

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



O.E.C.D. No.

812



Agricultural Tractor FENDT FARMER 306 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: November 1980 till March 1981
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: 3rd November 1981

O.E.C.D. No. 812

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

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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. 80 hours

SPECIFICATION OF TRACTOR

Tractor

Make: X. FENDT UND CO
Model: FARMER 306 LS TURBOMATIK
Type: Wheel tractor, unit construction,
all wheel drive
Serial-No.: 168.21.0026

Engine

Make: MOTORENWERKE MANNHEIM AG
Model: D-226-4
Type: Watercooled 4-stroke Diesel-engine,
direct injection
Serial-No.: D 226.4.2.15035
Cylinders: 4, in line, bore 105 mm, stroke 120 mm,
displacement 4156 cm³, compression ratio 16;
dry cylinder liners
Valves: Overhead
Fuel system: SOLEX fuel feed pump PE 20136;
BOSCH in line injection pump:
PES 4A 80D 320/3 RS 1301,
manufacturer's production setting 53,9 mm³/stroke
at rated speed and full load;
injection timing 28° before TDC;
BOSCH multihole injection nozzles DLLB 150 S 821,
injection pressure 180 bar;
BOSCH fuel filter with replaceable cartridge;
capacity of fuel tank 108 l
Governor: BOSCH centrifugal variable speed type governor
EP/RSV 325-1500 A 2 B 505 DR;
governed range of engine speed 650 to 2345 rev/min;
rated engine speed 2200 rev/min



- Air cleaner:** MANN
dry paper element filter with pre-cleaner, with replaceable main cartridge and safety cartridge, electrical maintenance indicator; air intake above bonnet
- Exhaust silencer:** EBERSPÄCHER
reflection - absorption-type silencer; 110 mm dia, 700 mm long; on the left hand side above bonnet; mouth showing upwards, 2400 mm above ground; optionally available silencer with mouth showing rearwards to the left
- Lubrication system:** Forced feed from gear type pump; strainer in sump; filter in full flow with by-pass valve and replaceable cartridge; oil and cartridge change period 200 operating hours; oil capacity 9,5 l; specified oil quality MIL-L-46 152 or MIL-L-2104 C
recommended oil viscosities:
tropics SAE 40
over + 5°C SAE 30
over -10°C to +10°C SAE 20W/20
below - 5°C SAE 10W
- Cooling system:** Watercooling with impeller pump; overpressure valve set to 0,4 bar; cooling circuit with by-pass and thermostat; fan with 7 blades, 455 mm dia; water capacity 13 l
- Starting system:** Electrical
BOSCH pre engaged-drive starting motor, 3 kW; BERU flame plug in intake manifold optional, fitted on tested tractor
- Electrical equipment:** 12 Volt, negative earth
BOSCH 3-phase alternator G1-14V 33A 27, 462 W;
1 lead acid battery, 110 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 disc type clutch GTNX 310, 310 mm dia,
hydraulically by pedal operated,
self readjusting
- Gear box:** Own make
synchromesh speed change gear with
3 forward speeds and 1 reverse speed;
2 group gears: synchronized fine stepped
group gear high/low (FS/FL);
collar shifted road group (S),
sliding gear shifted field group (A);
2 independent synchronized overdrive speeds,
optionally third overdrive speed
(40 km/h) available;
totally 14 forward speeds and
4 reverse speeds on tested tractor;
optionally available creeper group
- Rear axle:** Own make
portal construction;
bevel gear drive; bevel gear differential with
pedal operated lock, not selfdisengaging;
differential lock with pilot lamp;
spur gear final drives in portals
- Driven front axle:** ZAHNRADFABRIK FRIEDRICHSHAFEN AG
APL 1351
driven by universal joint shaft on the left
hand side of gear box, dry multi-disc clutch
to be shifted by hand lever under load;
bevel gear drive;
bevel gear differential, optionally
available with automatic lock;
planetary final drives
- Oil change:** Fluid clutch all 5000 operating hours
other gears all 1000 operating hours
or once a year
- Recommended oil qualities:**
- | | |
|-------------------------|--------------|
| Gear box | MIL-L-2105 |
| final drives and | |
| front axle differential | MIL-L-2105 B |



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FENDT FARMER 306 LS

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Test No. 79-245

Oil capacity
and viscosity:

Fluid clutch	5,8 l	SAE 10W
gear box	32,5 l	SAE 80
rear axle final drives	3,0 l each	SAE 90
front axle differential	4,8 l	SAE 90
front axle final drives	0,5 l each	SAE 90

Total ratios and speeds

Group	Fine stepped group	Gear	Total ratio engine : driving wheel	Nominal travelling speed at rated engine speed *) km/h
Forward speeds				
A	FL	1	429,81	1,40
		2	268,63	2,24
		3	165,92	3,63
	FS	1	352,22	1,71
		2	220,14	2,74
		3	135,97	4,43
S	FL	1	107,45	5,61
		2	67,16	8,97
		3	41,48	14,52
	FS	1	88,06	6,84
		2	55,03	10,95
		3	33,99	17,72
1st overdrive			25,46	23,66
2nd overdrive			20,22	29,80
Reverse speeds				
A	FL	R	268,63	2,24
	FS	R	220,14	2,74
S	FL	R	67,16	8,97
	FS	R	55,03	10,95

*) Calculated with the radius index 745 mm and the slip of the fluid clutch of 2,5%, measured at rated speed and maximum power

Power take-off

- Main p.t.o.:** At rear of tractor;
driven by a dry multiplate clutch,
independent from driving clutch,
operated by hand lever on console;
height above ground 680 mm, in median
plane of tractor,
337 mm behind rear axle centre line;
35 mm dia, 6 splines ISO 500/DIN 9611, type 1
- 2 speeds preselectable by hand lever:
- 1000 rev/min p.t.o. (with pilot lamp)
1035 rev/min at rated engine speed and full load,
1062 rev/min at rated engine speed with no load,
standard p.t.o. speed 1000 rev/min at
2124 rev/min engine speed at full load or
2074 rev/min engine speed at no load
- 540 rev/min p.t.o.
582 rev/min at rated engine speed with no load,
standard p.t.o. speed 540 rev/min at
2042 rev/min engine speed with no load
- fluid clutch slippage at full load
at rated engine speed 2,5%,
at standard p.t.o. speed 1000 rev/min 2,5%
- direction of rotation clockwise, viewed
from tractor rear
- optionally available p.t.o. with 750 rev/min
instead of 1000 rev/min p.t.o.
- Ground speed**
- p.t.o.:** Optional,
not fitted on tested tractor
- Secondary**
- p.t.o.** Optionally available front p.t.o.
(1000 rev/min),
not fitted on tested tractor



Power lift

Own make
hydraulic power lift, unit construction,
draft and position control
both steplessly mixable,
floating position;
top link sensing, lowering throttle

Hydraulic system:

Open centre system;
BOSCH tandem gear type pump HY/ZFFS 11/16+14
directly driven by engine,
delivery 16 cm³/rev or 37,4 l/min
at rated engine speed;
hydraulic filter with replaceable cartridge
incorporated in return oil line, cartridge change
after 1000 operating hours or once a year;
BOSCH control valve HY/SR 175/60L,
maximum working pressure 175 + 12 bar;
single acting cylinder with 86 mm bore and
138 mm stroke, without safety valve;
1 external additional cylinder with 50 mm bore
and 185 mm stroke, fitted on tested tractor,
optionally 2nd additional cylinder available;
1 single acting auxiliary BOSCH control valve
with return line fitted;
up to 5 single, partially double acting
auxiliary valves with oil tappings and
return lines in the rear and middle of tractor
available;
optional flow dividing valve in steering oil
circuit and additional control valve:
residual oil flow of steering circuit may be
taken off directly or in common with oil flow of
hydraulic circuit through oil tappings
separate hydraulic tank with 20 l capacity;
max. 8 l may be taken off through oil tappings
when tractor is travelling,
16 l when tractor is working stationary
recommended oil:
engine oil SAE 20W/20 (tropics SAE 30)
MIL-L-2104C or MIL-L-46 152
oil change after 1000 operating hours
or once a year



Implement

linkage at rear: Three point linkage ISO 730/I or DIN 9674, category 2;
length of lift rods adjustable by crank handles from 633 to 762 mm,
mean length of lift rods 698 mm with lifting range above ground from 170 to 1275 mm

Implement

linkage at front: Optionally available, not fitted on tested tractor

Holed drawbar:

Long bar, fitted on clevis of lower links, can be used as towing bar;
short bar available;
total length 1700 mm;
length between joint balls 830 mm,
thickness 25 mm, width 100 mm,
centre hole and 8 holes to each side, all holes 33 mm Ø;
height above ground adjustable by power lift;
holed drawbar can be fixed hydraulically-mechanically to a height of 370 mm above ground measured at surface of bar;
lower links stabilization by quick clamping devices;
distance of holes' centre line with lower links in horizontal position:
from rear axle centre 970 mm
from p.t.o. shaft end 633 mm

Pull attachment

Trailer hitch:

ROCKINGER
273 U 140
non-automatical, optionally automatical hitch available;
height above ground adjustable by one-hand quick adjustment to 483, 543, 727, 769, 811, 853 and 895 mm;
hitch hole 33 mm dia,
distance of hitch hole centre to rear axle centre 510 mm, to p.t.o. shaft end 173 mm,
permissible vertical load 1500 kg



Swinging drawbar: Optionally available,
not fitted on tested tractor;
optionally available fixed pin (piton fix)
or hitch

Towing hitch: 720 mm above ground at front of tractor

Steering

Own make in cooperation with
ZAHNRADFABRIK FRIEDRICHSHAFEN AG
hydrostatic steering model 8491 with
own oil circuit and oil filter,
filter change after 1000 operating hours or
once a year;
oil supply by tandem part of hydraulic pump,
displacement 14 cm³/rev or 32,7 l/min at rated
engine speed;
optional flow dividing valve in oil circuit
of steering (see page 9, hydraulic system);
oil reservoir in common with power lift system;
1 double acting ram,
directly acting on front axle,
235 mm stroke, 50 mm dia,
piston rod 22 mm dia

Brakes

Parking brake: Internal-expanding-shoe brake;
mechanically acting on 2 brake drums
on each differential half shaft,
180 mm dia, 30 mm width,
operated by pulling handle with ratchet

Service brake: Own make in cooperation with
GIRLING BREMSEN GMBH
muscle power brake with hydraulic
transmission to 2 disc brakes on the
differential half shafts with 2 lining
discs each;
optional additional disc brake situated
on joint shaft to front wheel drive;
not fitted on tested tractor

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



Wheels

Steered wheels: 2 pneumatics in front 12,4-24 6 ply,
diagonal type casing;
max. permissible load per tyre 1200 kg
at 1,7 bar inflation pressure and 30 km/h;
track width 1573 mm;
track width adjustable to 1713 mm
by reversing wheels;
rims W9 x 24,
optionally offset lug type rims available

Driven wheels: At front and at rear
driving rear wheels: radial type casing
2 pneumatics 16,9 R 34 8 ply;
max. permissible load per tyre 2380 kg
at 1,7 bar inflation pressure and 30 km/h;
track width 1508 mm, adjustable to 1652 mm
by reversing wheels;
rims DW 14L x 34,
optionally offset lug type rims available

Wheel base: 2320 mm

Cab

Own make
OECD-tested safety-cab
OECD-No. CSD 0274/3;
optionally OECD-tested safety frame with
roof available;
cab mounted to tractor by 4 silent blocks;
front-, rear- and side windows tiltable;
doors on both sides with additional stop
devices for ventilation;
2 steps each on either side;
combined heating and ventilation system with
blower, connected to the cooling circuit;
air outlet jets near the cab floor and at the
windscreen;
additional fan-assisted ventilation system
in the roof optionally available
noise-reduction materials
floor:
2-layer-bitumen-mat 4 mm,
heavy-layer nap pattern mat with rubber
foam lining 12 mm



mudguards:
PUR-foam coated with imitation leather 15 mm;

roof:
moulded resin-impregnated, cotton fibres 6 mm;
instrument and steering console:
sheet metal plates coated with bitumen-mat 4 mm,
rubber foam mat 40 mm below instrument panel,
additional rubber foam stripes 50 to 70 mm in
lower part of console

Seat

GRAMMER DS 85H/50R
upholstered seat with arm rests and folding
back rest (upper part),
adjustable spring with shock absorber;
additional horizontal spring suspension with
shock absorber; in longitudinal direction;
height of platform above ground 1035 mm,
height of unballasted seat above platform
adjustable in 2 steps from 492 to 552 mm;
longitudinal adjustment range 250 mm;
optionally seat GRAMMER DS 85H/90 AR available

Number of grease points 18

Dimensions

Total length:	3923 mm	without ballast
	4885 mm	with ballast
Total width:	1915 mm	without ballast
	2680 mm	with ballast
Total height:	2597 mm	to top of cab roof, optionally cab with roof which is 70 mm lower available
Ground clearance:	437 mm	below front axle differential

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Lighting equipmentElectrical, 12 Volt
as per German legislation

	Dimensions mm	Height above ground to centre mm	Distance from outside edge of tractor to centre mm
Head lamps	135 x 115	1020	765
Side lamps	65 x 20	1445	125
Rear lamps	33 x 60	1490	255
Reflectors			
1st pair	115 x 25	1435	255
2nd pair	70 Ø	590	575

Permissible total weights and axle loads

for all available wheel equipment

Wheel equipment		Permissible total weight kg	Permissible axle load	
front	rear		front kg	rear kg
11,2-24 6 ply	9,5-44 8/12 ply	5500	2200	3890
11,2-28 6 ply	13,6-36 6 ply			3230
13,6-24 8 ply	13,6-38 6 ply			3320
14,9/80-24 10 ply	16,9-30 6 ply			3800
12,4-24 6 ply	16,9-34 8 ply			4030

Running-time meterMechanical, with tachometer combined,
driven by camshaft of engine;
reference engine speed for one really
counted hour 1635 rev/min

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

Date of tests: 17th December 1980

Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

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

Maximum powerAt 2-hour test

47.1	2200	2146	1035	14.24	11.77	250	3.31
------	------	------	------	-------	-------	-----	------

At the speed recommended for drawbar work

47.1	2200	2146	1035	14.24	11.77	250	3.31
------	------	------	------	-------	-------	-----	------

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

40.9	2240	2192	1057	12.52	10.34	253	3.27
------	------	------	------	-------	-------	-----	------

(ii) unloaded

-	2336	2332	1125	3.55	2.93	-	-
---	------	------	------	------	------	---	---

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

21.0	2282	2250	1085	8.06	6.66	317	2.60
------	------	------	------	------	------	-----	------

(iv) maximum power

47.1	2200	2146	1035	14.24	11.77	250	3.31
------	------	------	------	-------	-------	-----	------

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

10.7	2310	2289	1105	5.93	4.90	459	1.80
------	------	------	------	------	------	-----	------

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

31.2	2270	2231	1076	10.29	8.50	272	3.04
------	------	------	------	-------	------	-----	------



Power kW	engine rev/min	Speed fl.clutch output rev/min	p.t.o. rev/min	Fuel consumption total		spec. g/kWh	Specific energy kWh/l
				l/h	kg/h		
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							
40.3	2152	2103	1015	12.23	10.10	251	3.30
(ii) unloaded							
-	2227	2227	1074	3.43	2.84	-	-
(iii) 50% of the torque defined in (i)							
20.6	2188	2155	1040	7.61	6.28	304	2.71
(iv) maximum power							
46.7	2124	2073	1000	13.95	11.52	247	3.35
(v) 25% of the torque defined in (i)							
10.5	2203	2183	1053	5.52	4.56	436	1.89
(vi) 75% of the torque defined in (i)							
30.6	2170	2129	1027	9.84	8.13	266	3.11

Standard specific fuel consumption (g/kWh): 253/317/251/304

No load maximum engine speed: 2336 rev/min

Equivalent flywheel torque at maximum power (2 hours): 210 Nm

Maximum equivalent flywheel torque: 258 Nm at 1500 rev/min
of the engine

Mean atmospheric conditions: temperature 20 °C
pressure 990 mbar
relative humidity 35 %

Maximum temperatures: coolant 85 °C
engine oil 107 °C
fuel 20 °C
engine air intake 21 °C

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



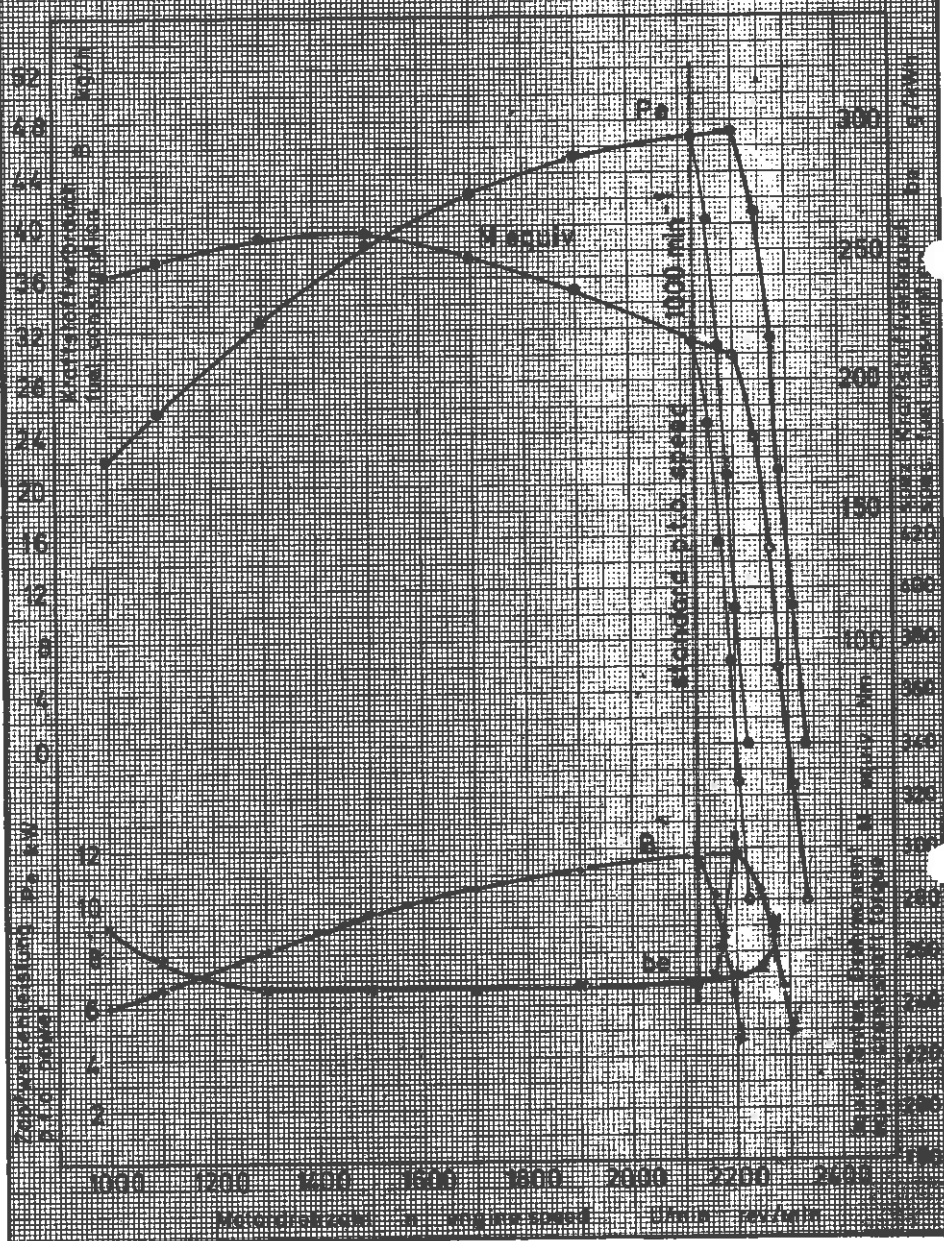
PRO-DINGS-ASTEELONG

FAST EARNER FOR L.S.

Zapwellenleistung

Pt.a performance

Test Nr. 79-243





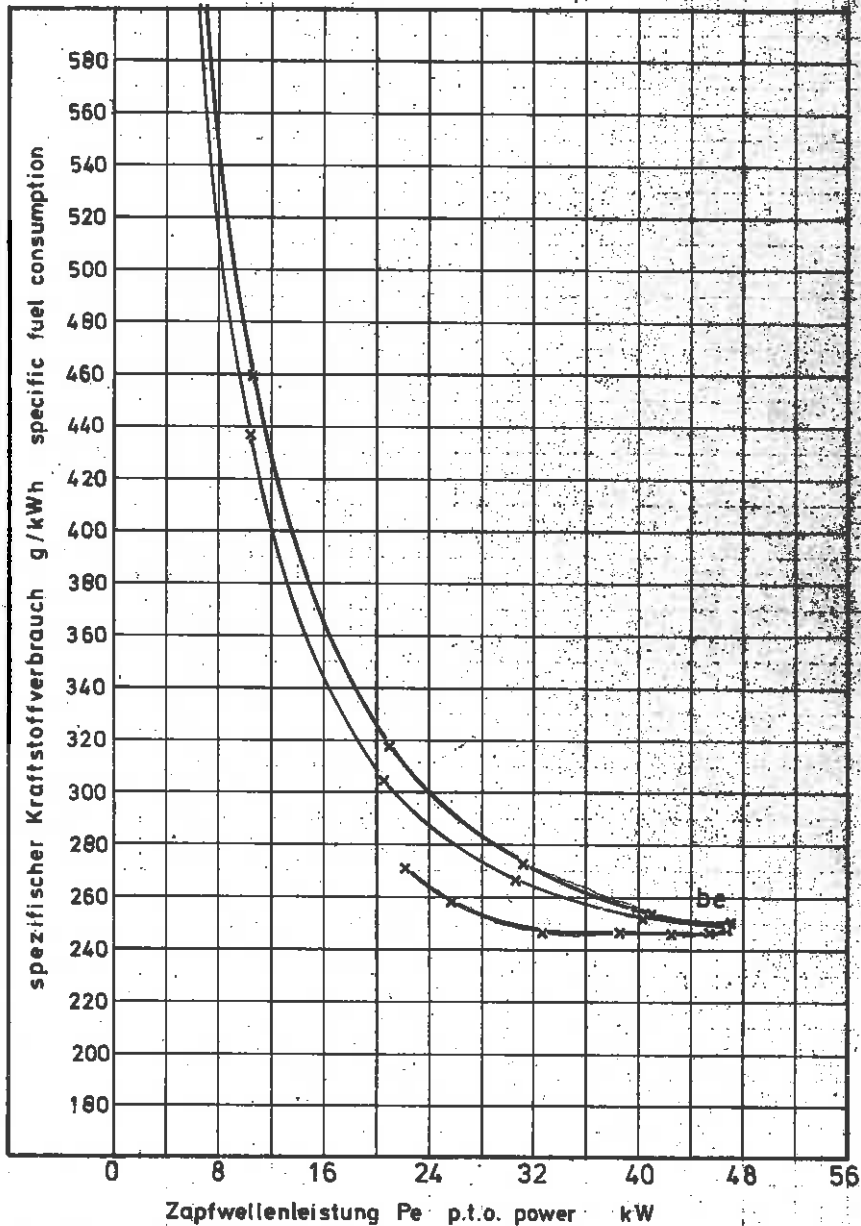
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FENDT FARMER 306 LS

Zapfwellenleistung

Pt.o. performance

Test Nr. 79-245





(2) DRAWBAR PERFORMANCE

Date of tests: 23rd till 30th March 1981

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 (unballasted)
height of drawbar above ground 460 mm

2 A FS	2,39	26,8	4039	2255	14,9
3 A FL	3,11	34,8	4032	2224	15,0
3 A FS	4,05	39,4	3499	2201	8,1
1 S FL	5,30	41,2	2797	2204	5,0
1 S FS	6,54	40,8	2246	2200	3,7
2 S FL	8,66	40,6	1686	2202	2,7
2 S FS	10,59	40,4	1368	2202	2,0
3 S FL	14,16	39,6	1006	2202	1,4

(ii) MAXIMUM POWER (ballasted)
height of drawbar above ground 450 mm

1 A FL	1,25	19,1	5509	2273	14,9
1 A FS	1,51	23,0	5484	2264	15,0
2 A FL	1,95	29,7	5479	2239	15,0
2 A FS	2,38	36,0	5438	2198	12,9
3 A FL	3,39	38,8	4124	2199	6,5
3 A FS	4,21	38,9	3325	2199	4,7
1 S FL	5,38	40,0	2679	2198	3,6
1 S FS	6,64	39,5	2139	2203	2,6
2 S FL	8,73	40,0	1646	2202	2,1
2 S FS	10,69	39,6	1333	2202	1,6
3 S FL	14,21	37,8	957	2199	1,2
3 S FS	17,38	37,2	771	2203	1,0

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

1 S FS	6,85	30,5	1604	2250	2,0
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(iv) FIVE-HOUR-TEST
at pull corresponding to 15% wheel slip in test (ii)

2 A FL	2,03	31,1	5509	-	-
--------	------	------	------	---	---

Total oil consumption during ten hours duration of tests
(iii) and (iv) 19 g/h



Tyre size front: 12,4-24 6 ply
 rear: 16,9 R 34 8 ply

Tread bar height at the beginning of drawbar tests:
 95% at front, 94% at rear, of the value when new

Specific fuel consumpt. g/kWh	Specific energy kWh/l	Temperatures			Atmospheric conditions		
		Fuel °C	Coolant °C	Engine- oil °C	Tempe- rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 0,8 bar at front and at rear							
355	2,33	19	80	96	16	73	990
333	2,48	19	79	97	16	73	990
299	2,76	19	79	97	15	82	990
287	2,88	18	81	97	15	82	990
290	2,84	18	80	97	15	81	990
290	2,84	18	81	98	15	81	990
292	2,83	18	82	98	15	83	990
300	2,75	18	82	96	15	82	990

tyre inflation pressure 1,5 bar at front, 1,1 bar at rear

410	2,01	21	80	92	21	71	995
371	2,22	21	80	94	21	70	995
350	2,36	21	80	96	21	72	995
324	2,55	22	81	99	22	70	994
300	2,75	22	82	99	22	69	994
300	2,75	22	82	99	22	71	995
291	2,83	23	82	97	22	71	995
296	2,79	23	82	96	22	71	995
294	2,81	17	79	97	14	80	1001
297	2,78	17	80	98	14	85	1001
312	2,64	17	80	97	14	83	1001
317	2,60	17	79	97	14	80	1001

313	2,63	22	85	100	21	77	993
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-	-	16	85	101	14	95	992
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Test (iv) was carried out with additional ballast,
 the figures not quoted are therefore irrelevant

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

Wheel equipment front: 12,4-24 6 ply

rear: 16,9 R 34 8 ply

Track of wheels front: 1573 mm

rear: 1508 mm

Front axle drive disengaged

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	4,81	4,75	5,79	5,49
Radius of turning circle	4,47	4,36	5,45	5,15

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	934 mm
Distance forward from rear axle centre	893 mm
Distance from tractor's median plane, to the right	2 mm



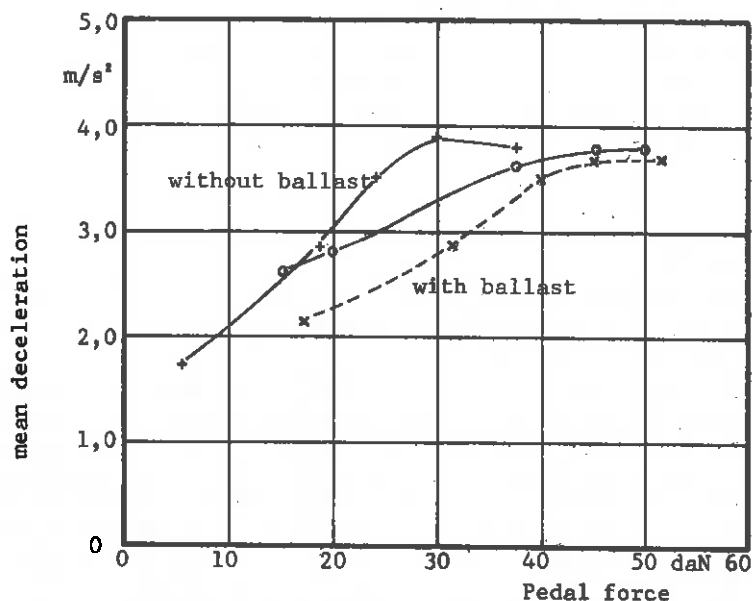
(5) Braking

Date of tests: 24th and 25th March 1981

Tractor masses during tests with driver:	front kg	rear kg	total kg
without ballast	1425	2270	3695
with ballast	2200	3300	5500

A) Service brake

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



Speed before application of brakes, without ballast 31,1 km/h
with ballast 30,7 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	23	22	18	19



(6) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 30th January 1981
 Type of track: Concrete
 Type of sound level meter: BRÜEL AND KJAER model 2209

Results of test

Gear: 2nd Overdrive
 Travelling speed before
 acceleration: 23,2 km/h
 Sound level: 88,0 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 22nd January 1981
 Type of track: Concrete
 Type of sound level meter: BRÜEL AND KJAER model 2209

The tractor was fitted with FENDT safety cab

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	3973	1,40	1,11	82,0
1 A FS	3995	1,71	1,35	82,5
2 A FL	4030	2,24	2,03	83,0
2 A FS	4034	2,74	2,41	82,5
3 A FL	3969	3,63	3,11	83,0
3 A FS	3613	4,43	4,01	83,5
1 S FL	2868	5,61	5,32	83,0
1 S FS*)	2338	6,84	6,55	83,0
2 S FL	1736	8,97	8,61	82,5
2 S FS	1406	10,95	10,56	83,0
3 S FL	1008	14,52	14,09	83,0
3 S FS	779	17,72	17,26	82,5
2nd Overdrive	light load	29,80	30,95	82,5
1 S FS*)	light load	6,84	7,34	81,5

*) 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: 3rd and 4th February 1981

Power Lift

	Height of lower hitch point above ground in down pos. mm	Ver- tical move- ment 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	170	705	2100	158	-	-
On the frame	170	805	1710	158	2657	13 *)

Temperature of hydraulic fluid at start of test 65 °C

*) max. tilting angle of mast from vertical position to max. height 9°

Lifting heights relative to horizontal lower links

mm	-425	-400	-375	-300	-200	-100	0	+100	+200	+300	+330	+380
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Lifting forces at hitch points

daN			2100	2200	2310	2400	2420	2400	2400	2400	2400	
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Lifting forces at test frame

daN	1910	1930		2000	2040	2040	2010	1950	1890	1800		1710
-----	------	------	--	------	------	------	------	------	------	------	--	------

Hydraulic Pump Performance

Opening pressure of the relief valve in remote circuit 158 bar

Sustained pressure with relief valve open 178 bar

Pump delivery rate at minimum pressure, the governor control lever being set for max. power 41,1 l/min

Hydraulic power at 90% of relief valve setting 10,2 kW

Corresponding delivery rate 38,4 l/min

Pressure 160 bar

Temperature of hydraulic fluid 65 °C

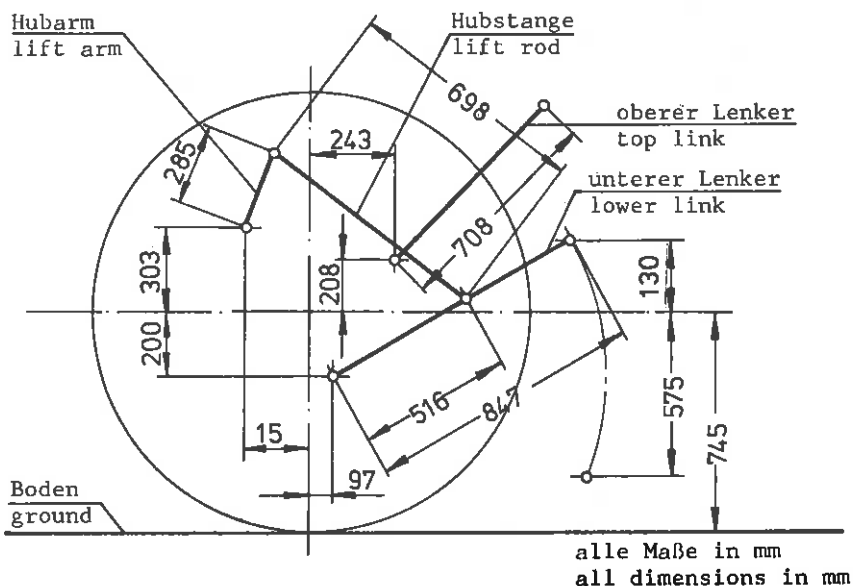
Tapping point used for test: At rear of tractor

LINKAGE GEOMETRY when connected to the standard frameProjected length in side view:

Lower links	847 mm
Lift arms	285 mm
Lift rods	698 mm
Top link	708 mm
Distance of lift rod connection point from pivot point of lower link	516 mm

The following dimensions are given relative to the rear wheel
centre line, situated 745 mm above ground:

Lower link pivot point	97 mm behind, 200 mm below
Top link pivot point	243 mm behind, 208 mm above
Lift arm pivot point	15 mm forward, 303 mm above
Maximum and minimum height of lower link hitch points	575 mm below, 130 mm above
Height of lower link hitch points when locked in transport position	375 mm below



**PRÜFUNGS-ABTEILUNG**

FENDT FARMER 306 LS

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Test No. 79-245

OPTIONAL TESTS**(9) ENGINE PERFORMANCE**

Date of tests: 17th December 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					
52.8	2200	14.29	11.82	224	3.69
At standard p.t.o. speed (1000 rev/min)					
52.1	2124	14.01	11.58	222	3.73
At the speed recommended for drawbar work					
52.8	2200	14.29	11.82	224	3.69

Part loads

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

45.7	2243	12.39	10.25	224	3.69
------	------	-------	-------	-----	------

(ii) unloaded

-	2344	3.27	2.71	-	-
---	------	------	------	---	---

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

23.3	2289	7.67	6.34	272	3.04
------	------	------	------	-----	------

(iv) maximum power

52.8	2200	14.29	11.82	224	3.69
------	------	-------	-------	-----	------

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

11.6	2319	5.36	4.43	383	2.16
------	------	------	------	-----	------

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

34.7	2269	9.95	8.23	237	3.49
------	------	------	------	-----	------

Optimum fuel consumption: 209 g/kWh at 27.6 kW and 1210 rev/min

No load maximum engine speed: 2344 rev/min

Torque at maximum power (2 hours): 229 Nm

Maximum torque: 277 Nm at 1396 rev/min of the engine

Mean atmospheric conditions:

temperature	21 °C
pressure	1012 mbar
relative humidity	35 %

Maximum temperatures:

coolant	82 °C
engine oil	65 °C
fuel	22 °C
engine air intake	21 °C



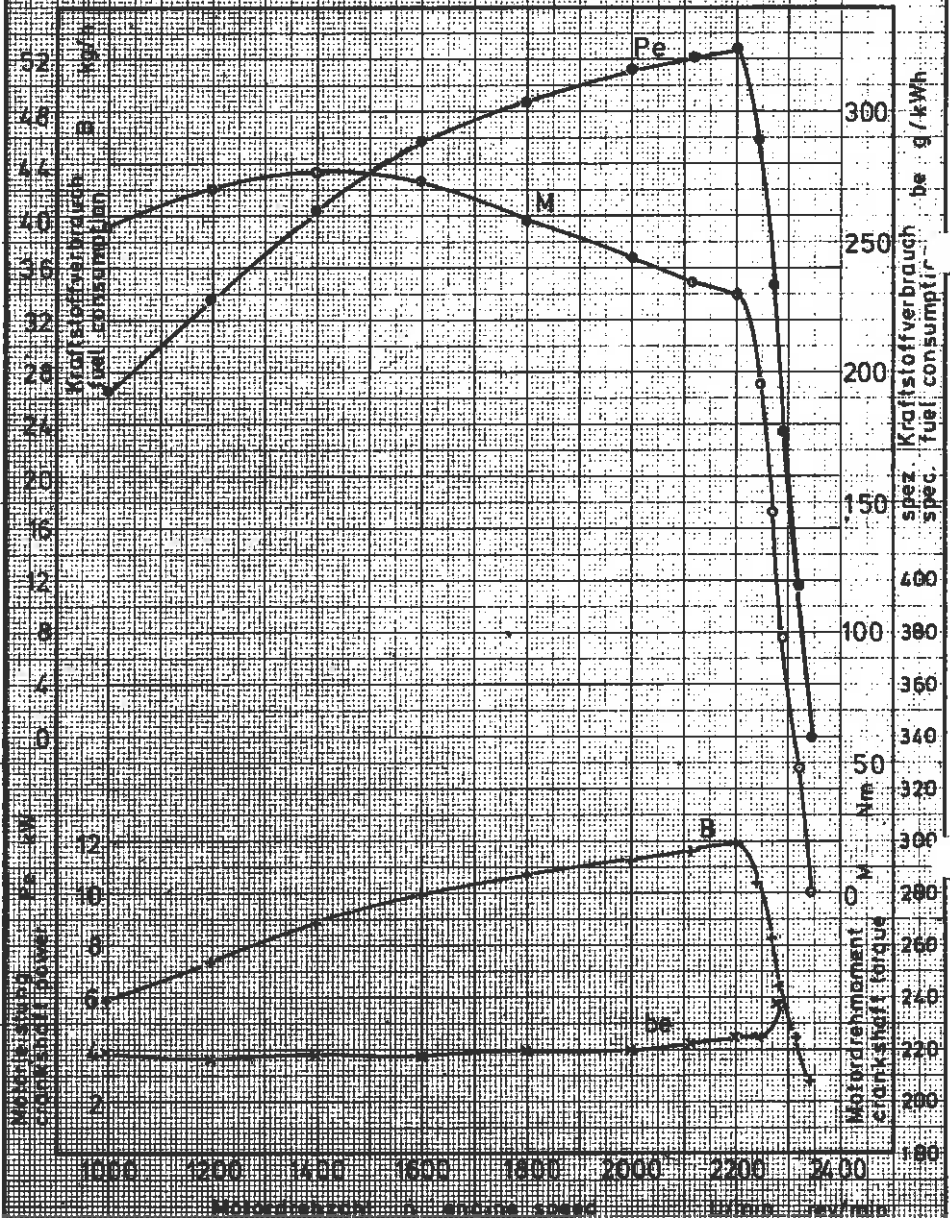
PRÜFUNGS-ABTEILUNG

FENDT FARMER 306 LS

Motorleistung

Engine performance

Test Nr. 79-245



Motorleistung

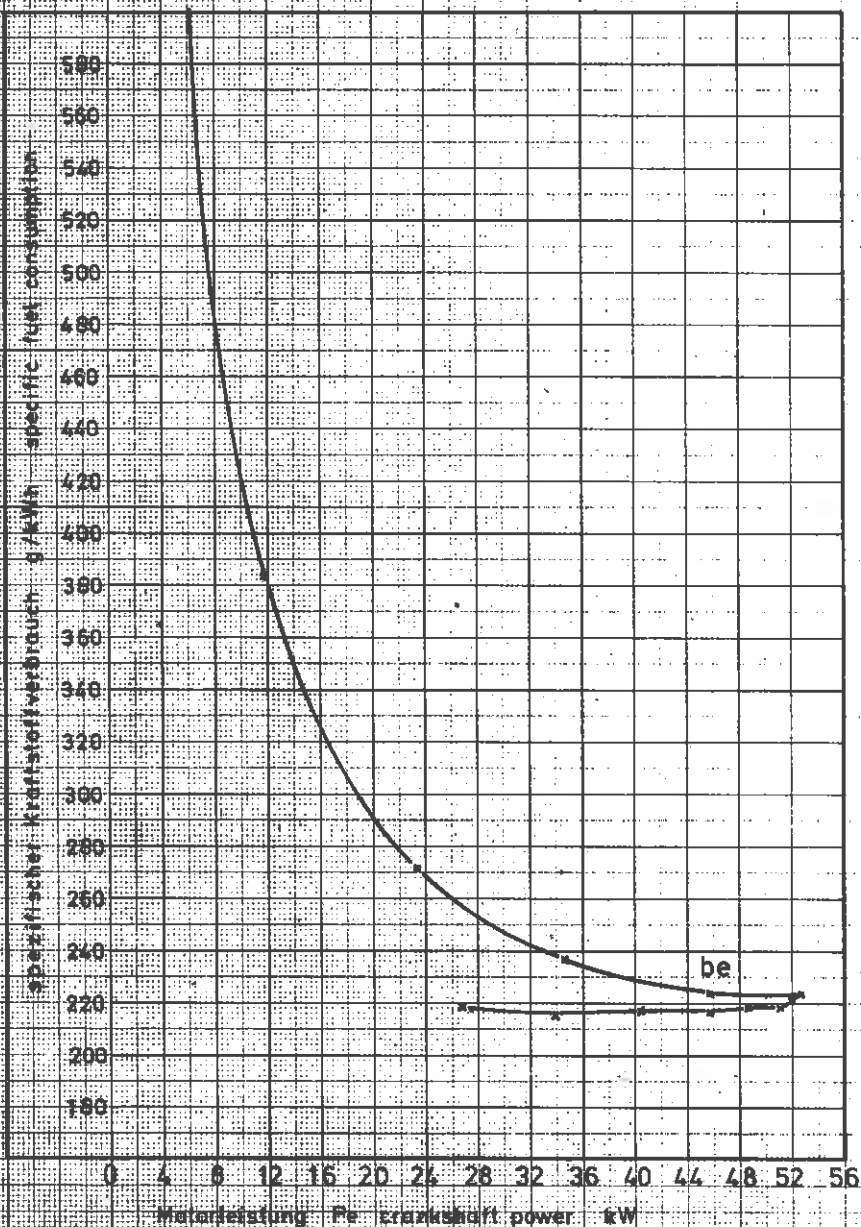


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Engine performance

Test Nr. 79-245





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FENDT FARMER 306 LS

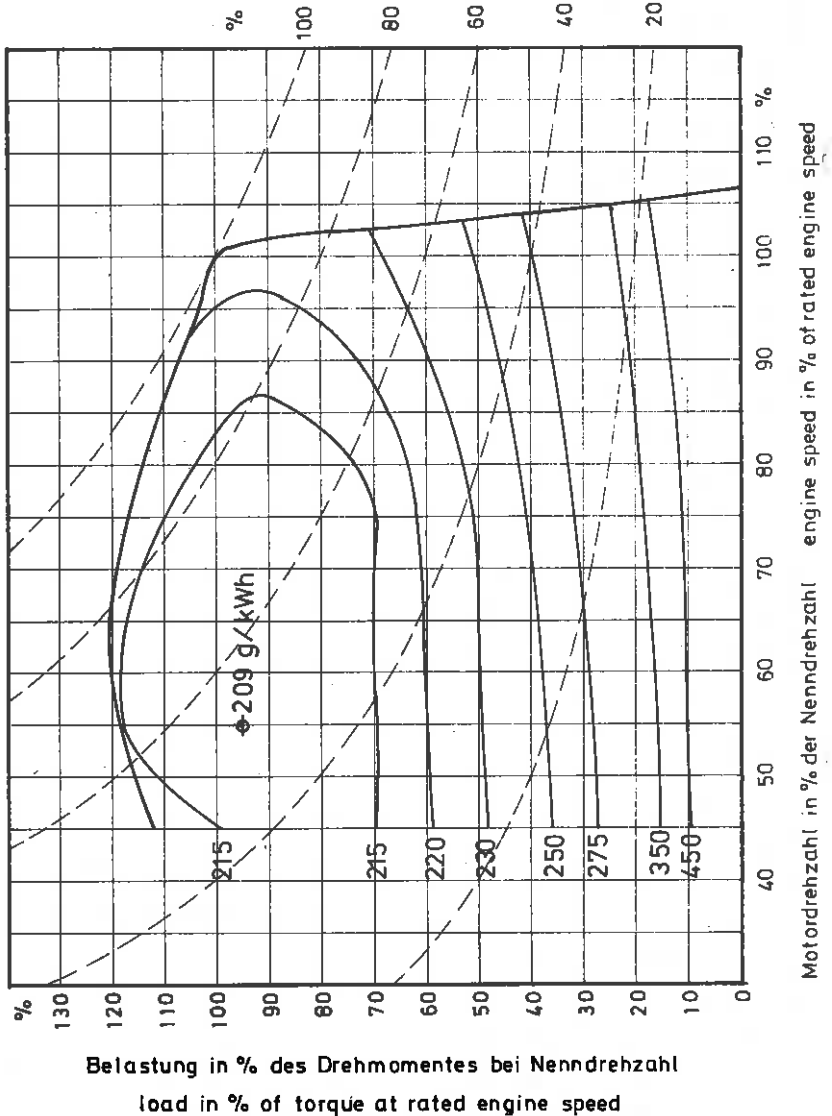
Motorleistung

Engine performance

Test Nr. 79-245

Motorleistung in % der Leistung bei Nenndrehzahl

engine power in % of power at rated engine speed



the 1990s, the number of people in the UK who are employed in the public sector has increased by 1.5 million, from 2.5 million in 1980 to 4 million in 1995. The public sector has grown from 10% of the economy to 15% of the economy.

There are a number of reasons for this increase. One of the main reasons is the increasing demand for public services. The population is ageing, and there is a growing need for health and social care services. There is also a growing need for education and training services.

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