Report on test in accordance with OECD STANDARD CODE

OECD No. **1194**



Agricultural Tractor FENDT FARMER 280 P (4WD)

Type denomination 248/2

Manufacturer

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

Deutsche Landwirtschafts-Gesellschaft e.V.
Zimmerweg 16 · D-6000 Frankfurt a. M. 1
Telefon: (069) 71 68-0 · Telex: 04 131 85 dlg-d

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

Duration of tests: November 1988 till February 1989

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

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

Date of approval: 17th May 1989 OECD No. 1194

In this report all performance characteristics are given corresponding to the International System of Units.

The reference to the former used Technical System of Units is given by the following relations:

Forces	1 kN	=	1000 N	=	102 kp
Powers			1 kW	=	1,36 PS
Pressures	1 MPa	=	10 bar	=	10,2 kp/cm²
	100 kPa	=	1000 mbar	=	750,10 mm Hg

All rights including the right of translation, reprint and photo-mechanical copying — also of excerpts — reserved by the editor.

Printed in the Federal Republic of Germany
July 1989: DLG-No. 242

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

TABLE OF CONTENTS

		Page
SPECIFICATION OF TRACTOR		4 to 14
TEST CONDITIONS		14 to 16
COMPULSORY TESTS		
1	Main power take-off performance	17 to 20
2	Hydraulic power and lifting force	21
3	Drawbar power	22 and 23
4	Turning area and turning circle	24
5	Position of centre of gravity	24
6	Braking	25
7	External noise level	26
APPENDIX		
	Measurements of noise in the protective structure results of OECD-Test No. CSS 068/1/NM 0070	26

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Tractor manufacturer:	X. Fendt & Co., D-8952 Marktoberdorf
Location of tractor assembly:	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. 90 hours
Location of test:	D-6114 Groß-Umstadt

SPECIFICATION OF TRACTOR

Tractor

Make:	FENDT
Trade name:	FARMER 280 P
Type denomination:	248/2
Type:	Four wheel-drive tractor, unit construction for use in plantations
Serial No.:	248/21/0079 1st serial no.: 248/21/0026

Engine

Make:	DEUTZ
Model:	F4L 913
Type:	Aircooled 4-stroke diesel engine, direct injection, naturally-aspirated
Serial No.:	752162
Cylinders:	4, in-line, bore/stroke 102/125 mm, capacity 4086 cm³, compression ratio 17,0±3:1, replaceable ribbed cylinder liners
Valves:	Overhead
Fuel system:	PIERBURG fuel supply pump; replaceable BOSCH fuel filter, capacity of fuel tank 60 dm³; BOSCH in-line injection pump PES 4A 85D410/3RS 2610, serial no. 84104061, manufacturer's production setting of injection pump: Flow rate (rated engine speed and full load) 58±1,0 mm³/stroke, timing 22±1° static and +6° dynamic before TDC; BOSCH multihole injection nozzles DLLA 149 S 774, injection pressure 17,5±0,8 MPa

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Governor:	BOSCH, centrifugal variable speed governor RSV 325-1150 A8C 2102L, governed range of engine speed from 650 to 2520 rev/min, rated engine speed 2400 rev/min
Air cleaner:	KNECHT dry paper element filter with pre-cleaner, replaceable cartridge; air intake below bonnet, electrical maintenance indicator
Lubrication system:	Forced-feed lubrication with gear pump, MANN replaceable oil filter in full flow with by-pass valve; oil cooler to the right of engine within cooling stream of engine
Cooling system:	Air cooling with axial blower with 11 blades, 230 mm dia, driven by V-belt
Starting system:	Electrical; BOSCH solenoid pre-engaged-drive starting motor 2,7 kW; BERU-flame plug in air intake manifold; safety device: depressed pedal of travel clutch
Electrical system:	12 V, BOSCH 3-phase alternator K1 14V 55A 770W; 1 lead acid battery, 88 Ah at 20 hours rating
Exhaust system:	EBERSPÄCHER 2 multi-chamber reflection-absorption-type silencers, to the left, below engine, pre-silencer 100 mm dia, 264 mm long, main silencer oval, 119 to 164 mm dia, 525 mm long; mouth showing laterally rearwards down, 345 mm above ground; optionally available long exhaust pipe with mouth showing upwards

Transmission to wheels

Clutch:	F & S dry dual disc clutch DUT 295 L; travel drive pedal operated disc 295 mm dia, p.t.o. drive hand lever operated disc 280 mm dia
Gear box:	FENDT, R 21/6 synchromesh gear box with 3 forward gears and 1 reverse gear; 1 close stepped synchromesh range gear with 3 ranges FL, FM and FS; 1 range gear with road range S (collar shifted) and field range A (sliding gear shifted); 3 independent synchronized overdrive speeds; total 21 forward and 6 reverse speeds, 3 shift levers;
Rear axle and final drives:	FENDT bevel gear drive; bevel gear differential with pedal operated lock, not self disengaging, with pilot lamp; spur gear final drives
Front axle and final drives:	SIGE, type 213 FSD 50, driven by universal joint shaft in median plane of tractor; wet multiplate clutch, electro-magnetically disengaged, 2 modes can be preselected by electric switch: a) front wheel drive disengages automatically when steering angle exceeds 35 degrees b) front wheel drive engaged, independent of steering angle; bevel gear drive, bevel gear with multi-disc limited slip differential; planetary final drives

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Total ratios and travelling speeds

Range	Close stepped range	Gear	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed *) at rated engine speed of 2400 rev/min km/h
Forward speeds				
A	FL	1	398,31	1,45
		2	248,94	2,33
		3	157,66	3,67
	FM	1	326,41	1,77
		2	204,01	2,84
		3	129,20	4,48
	FS	1	276,82	2,09
		2	173,01	3,35
		3	109,57	5,28
S	FL	1	99,58	5,82
		2	62,24	9,30
		3	39,42	14,69
	FM	1	81,60	7,10
		2	51,00	11,35
		3	32,30	17,93
	FS	1	69,21	8,37
		2	43,25	13,39
		3	27,39	21,14
1st overdrive			25,28	22,91
2nd overdrive			20,07	28,85
3rd overdrive			16,15	35,86
Reverse speeds				
A	FL	R	275,15	2,10
	FM	R	225,48	2,57
	FS	R	191,22	3,03
S	FL	R	68,79	8,42
	FM	R	56,37	10,27
	FS	R	47,81	12,11

*) calculated with a tyre dynamic radius of 640 mm (ISO 4251/1-1984)

Number of revolutions of front wheels for one revolution of rear wheels: 1,5495

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Power take-off

Main p.t.o.: Independent,
driven by 2nd disc of dual disc clutch,
1 p.t.o. shaft at rear of tractor;
2 (optional 3) p.t.o. speeds are
preselectable by hand lever;
35 mm dia, 6 splines, in conformity
with ISO 500-1979, type 1;

height above ground	592 mm
distance from tractor's median plane	0 mm
distance from rear wheel axis	291 mm

P.t.o.	P.t.o. speed rev/min	Engine speed rev/min	Ratio of rotation speeds (engine speed/ p.t.o. speed)	Power restriction kW
540	540	2287	4,2348	-
	567	2400		
750	540	1732	3,2078	-
	748	2400		
1000 1)	1000	2294	2,2941	
	1046	2400		

1) not fitted

Optional p.t.o.: Front p.t.o. is available for
540 or 1000 rev/min;
(1000 rev/min p.t.o. fitted on tested
tractor)

Power lift

FENDT and BOSCH, EHR
Electronic-hydraulic power lift,
disintegrated construction;
draft and position control, steplessly
mixable, floating position, adjustable
limitation of lifting height, lower link
sensing, lowering throttle, power lift
can also be controlled by additional
control valve

Hydraulic system: Open centre with 2 independent circuits;
BOSCH tandem gear type pump HY/ZFFS
11/13+11L, gear driven by engine;

1st circuit:
1st pump with 41 l/min delivery at rated
engine speed supplies power lift and up to
4 additional valves

2nd circuit:
2nd pump with 28 l/min at rated engine speed,
supplies steering via priority valve and
1 single acting flow controlled additional
valve with residual flow;

this residual flow of circuit 2 can be fed into circuit 1 by sequence valve- "fast action";
oil filter in return line

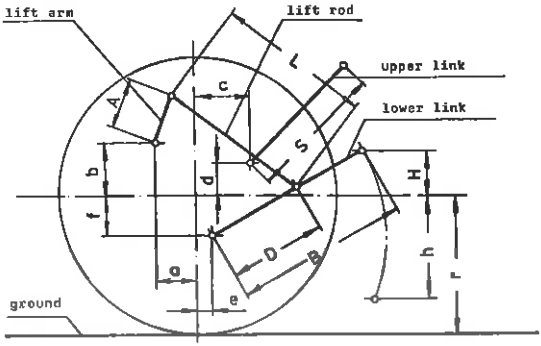
BOSCH control valve,
max. working pressure 18,0+0,1 MPa;
2 single acting cylinders, 55 mm bore, 175 mm stroke, no safety valve

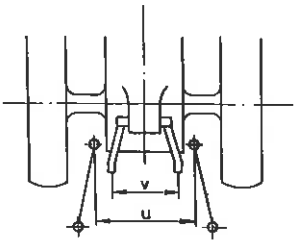
3 single acting additional valves and 1 double acting valve;
oil tappings and separate return lines at rear and in the middle of tractor;

separate oil reservoir at the right side of the engine with 14 dm³ capacity, 12 dm³ can be taken off stationary or travelling

Three-point linkage at rear:

WALTERSCHEID quick couplers, category 1 or 2; in conformity with ISO 730/1-1977





Three-point linkage at front:

Optional available, category 2, fitted to tested tractor, controlled by single acting additional valve;
lower links can be dismounted

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Dimensions of rear implement linkage (cat.2, projected lengths in mm, underlined dimensions are valid for power lift measurements p.21)

Rear tyres Front tyres	radius index static radius	(r) (r')	640 383
Length of lift arms		(A)	264
Length of lower links		(B)	851
Distance of lift arm pivot points from rear wheel centre	horizontal vertical	(a) (b)	-110 334
Horizontal distance between lower link pivot points		(u)	413
Horizontal distance between lift arm end points		(v)	478
Length of upper link		(S)	574 to 847, <u>673</u>
Distance of upper link pivot point from rear wheel centre	horizontal vertical	(c) (d)	217, 257 or <u>297</u> 356, 300 or <u>244</u>
Distance of lower link pivot point from rear wheel centre	horizontal vertical	(e) (f)	92 155
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	461
Length of lift rods		(L)	539 to 654, <u>592</u>

Height of lower link hitch points relative to rear wheels' centre line (situated 640 mm above ground), these data are valid for unloaded power lift:

Length of lift rods	(L)	<u>592</u>	539	654
Linkage distance of lift rods	(D)	461		
Lowest position	(h)	440	535	565
Highest position	(H)	188	275	85
Transport position	(H')	188	275	85

Transport lock: Hydraulical, control-valve switch locked

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Pull attachments

Swinging drawbar:	Optionally available, not fitted	
Trailer hitch:	FENDT, AK-004, non automatical	
	height above ground adjustable by one-hand quick adjustment	
	hitch hole dia	33 mm
	hitch point	
	above ground	382, 424, 674, 716, 758, 810 mm
	behind rear wheel axis, horizontally	458 mm
	above p.t.o. shaft end, vertically	82, 124, 166, 218 mm
	below p.t.o. shaft end vertically	168, 210 mm
	behind p.t.o. shaft end, horizontally	167 mm
	maximum permissible vertical load	1000 kg
Holed drawbar:	Short bar,	
	length between joint balls	683 mm
	thickness/width	30/80 mm
	7 holes between joint balls, distance between the holes each	80 mm
	hole dia	33 mm
	height above ground	
	minimum	75 mm
	maximum	915 mm
	horizontal distance of holes' centre line to p.t.o. shaft end (lower links in horizontal position)	652 mm
Towing hitch:	Not fitted due to front p.t.o.	

Steering

DANFOSS, OSPC 70 LSR/OL SA 40
hydrostatic,
oil in common with power lift;
oil supply by tandem part of power lift pump and priority valve;
1 FENDT steering cylinder, symmetrical design, integrated in front axle, directly acting on steering levers;
bore/stroke 63/145 mm, piston rod 36 mm dia

Brakes

Service brake:

KNOTT, ATE and FENDT,
pedal operated muscle power brake with hydraulic transmission, acting on 2 brake drums on the differential half shafts of rear axle, 180 mm dia, 60 mm width;
1 additional caliper brake on joint shaft to front axle drive, disc 224 mm dia;
front wheel drive is additionally engaged, when braking

Steering brake:	Divided pedal of service brake, locked together for normal use
Trailer brake:	Optionally available, not fitted
Parking brake:	Lever operated muscle power brake with mechanical transmission, acting on 2 brake drums on the differential half shafts of rear axle; drum 180 mm dia, 30 mm width

Wheels

Steered wheels:	At front, 2 pneumatics 11.5/80-15.3, rims 9.00x15.3
Driving wheels:	At front and at rear, at rear: 2 pneumatics 14.9 R 28, rims W12x28
Wheel base:	2180 mm
Track adjustment:	At front 1395 and 1495 mm, by reversing wheels; at rear 1188 to 1488 mm in steps of 100 mm by offset lug type rims

Available tyres:

Tyre size	
Front	Rear
7.50 - 18 MPT 6 ply	14.9 R 24 126 A8
10.5 - 18 MPT 6 ply	420/70 R 24 130 A8
275/80 R 18 123 G	14.9 R 24 127 A8
10.5 - 20 MPT 6 ply	12.4 R 28 121 A8
275/80 R 20 125 G	13.6 R 28 123 A8
11.5/80-15.3 Impl.8 ply	14.9 R 28 6 ply
11L R 16 122 A8	16.9 R 28 8 ply
7.50 R 20 6 ply	420/70 R 28 133 A8
	14.9 R 30 6 ply
	12.4 - 32 6 ply
	9.5 - 36 114 A8

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Protective structure

Cab:	FENDT, model 294.500; OECD-tested, approval no. CSS 068/1/NM 0070 not tiltable, mounted by 4 silent blocks on tractor; 1 door and 1 step each on the left and right; steps 460 mm, driver's platform 660 mm above ground; front- and rear-windows tiltable, roof hatch; separate heating and ventilation system in the roof; EBERSPÄCHER diesel-fuel heater with blower (1-stage), additional fresh air blower (3-stages), air intake above windscreen, air outlet jets in the roof, heating possible by recirculating air		
Noise reduction materials:			
roof and roof hatch	plastic (GFK), foam with textile		3-10 mm
front wall - in the middle, bottom	plastic molded part (sealed with silicone-caoutchouc at the clutch housing and at the cab - front wall)		10-30 mm
rear wall - middle - bottom	foam with textile foam with PU-hide		3-10 mm 20 mm
mudguards	foam with PU-hide		20 mm
side walls, doors, middle posts	foam with textile		3-10 mm
floor	nopped mat (PUR) Polyethylen-foam (PE)	 appr.	4-5 mm 9 mm
seat support and gear box cover	multi-layer laminated fabric		6-12 mm
instrument and steering support			
- upper part	plastic and foam		3-30 mm
- lower part	PUR-sealing	up to	20 mm
- between steering support and clutch housing	soft damping fleece		25 mm
engine hood			
- rear part	foam, surface flame resistant		20-30 mm
Running-time meter	Electronic, digital displays for travel speed and engine or p.t.o. speeds, operating hours are really counted		

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Driver's seat: GRAMMER, DS 44/1HB
mechanical suspension,
adjustable;hydraulic shock absorber;
upholstered seat;
height of unloaded seat above platform steplessly adjustable from 580 mm to 640 mm;
longitudinal adjustment range 180 mm

Lighting: Electrical, 12 Volt, corresponding to German legislation

	Size mm	Height above ground of centre mm	Distance from outside edge of lights to median plane of tractor mm
Headlights	140 x 75	805	225
Sidelights	65 x 15	1330	675
Rearlights	85 x 25	1300	657
Reflectors			
1st pair	90 x 40	1255	659
2nd pair	80 Ø	585	325

TEST CONDITIONS

Overall dimensions

	Without ballast	With ballast
Length	3665 mm	4765 mm
Width	1850 mm	2380 mm
Height	2260 mm to top of cab	
Ground clearance	260 mm below front axle differential	

Tractor mass (with cab)

	Ballasted		Unballasted	
	Without driver kg	With driver kg	Without driver kg	With driver kg
Front	1995	2010	1125	1140
Rear	2415	2490	1575	1650
Total	4410	4500	2700	2790

Ballast

	Number of weights	Total mass kg	Water kg
Front	frame and weights	600	-
Rear	18	792	318

Tyres and track widths specifications

	Front	Rear
Tyres:	CONTINENTAL	KLEBER
dimensions	11.5/80-15.3 Impl.	14.9 R 28
ply rating/load and speed index	8 ply/-	-/128 A8
type	diagonal	radial
maximum load	1005 kg	1800 kg
at inflation pressure	275 kPa	160 kPa
at travelling speed	40 km/h	40 km/h
radius index	383 mm (static)	640 mm
Chosen track width	1495 mm	1488 mm
Technically permissible axle load	2000 kg	3400 kg

Technically permissible total weight 4500 kg

Oils and lubrication

Capacity and change interval:

	Capacity dm^3	Oil change h/years	Filter change h/years
Engine	9,3	250/-	250/-
Gearbox including rear axle	26,5	1000/2	-
Rear final drives	2,7 each	1000/2	-
Front axle differential	6,0		
Front final drives	0,3 each		
Hydraulic system including steering	14,0	1000/2	1000/2

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

Specification

	Recommended	Used during test
Engine oil:		
Type	Engine oil	ESSO UNIFARM
Viscosity below -10°C	SAE 10W	
over -10°C	SAE 15W/30 or SAE 15W/40	15W/40
Classification API	CD	CD
Gear oil:		
Gear box		
Type	Multipurpose-gear oil	MOBIL MOBILUBE GX 80
Viscosity	SAE 80	SAE 80
Classification API	GL4	GL4
Front axle and all final drives		
Type	Hypoid-gear oil	MOBIL MOBILUBE
Viscosity	SAE 85W/90 or 80W/90	SAE 85W/90
Classification API	GL5	GL5
Hydraulic system and steering		
Typ	Engine oil	ESSO Essolube XD 3+
Viscosity	SAE 20W/20	20W/20
Classification API	CD	CD

Grease: Multipurpose grease

Number of lubrication points: 9

Fuel

Type: ARAL Diesel-fuel in conformity with DIN 51 601

Density at 15°C:
at p.t.o. tests 0,837 kg/l
at drawbar performance tests
without ballast 0,836 kg/l
with ballast 0,835 kg/l

REPAIRS: None

REMARKS: None

PRÜFUNGS-ABTEILUNG
Fendt Farmer 280 P

Test No. 88-170

COMPULSORY TESTS

1. MAIN POWER TAKE OFF PERFORMANCE (540 rev/min)

Date of tests: 8th November 1988
Location of tests: DLG-Testing Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed Engine rev/min	Speed P.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
1.1 At 2-hour test						
55,3	2400	567	16,39	13,72	248	3,37
1.2 At rated speed						
55,3	2400	567	16,39	13,72	248	3,37
1.3 At standard p.t.o. speed						
54,1	2287	540	15,86	13,27	245	3,41
1.4 Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)						
1.4.1 the torque corresponding to maximum power at rated speed						
55,3	2400	567	16,39	13,72	248	3,37
1.4.2 85% of the torque obtained in 1.4.1						
47,5	2425	573	14,09	11,80	248	3,37
1.4.3 75% of the torque defined in 1.4.2						
36,2	2464	582	11,49	9,62	266	3,15
1.4.4 50% of the torque defined in 1.4.2						
24,1	2465	582	8,78	7,35	305	2,75
1.4.5 25% of the torque defined in 1.4.2						
12,2	2484	586	6,39	5,35	440	1,90
1.4.6 unloaded						
-	2520	595	4,26	3,56	-	-

PRÜFUNGS-ABTEILUNG

Fendt Farmer 280 P

Test No. 88-170

Power kW	Speed Engine rev/min	Speed P.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
1.5 Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load (curve b)						
1.5.1 the torque corresponding to maximum power						
54,1	2287	540	15,86	13,27	245	3,41
1.5.2 85% of the torque obtained in 1.5.1						
46,5	2312	546	13,56	11,35	244	3,43
1.5.3 75% of the torque defined in 1.5.2						
35,4	2343	553	10,92	9,14	258	3,24
1.5.4 50% of the torque defined in 1.5.2						
23,7	2360	557	8,37	7,01	295	2,83
1.5.5 25% of the torque defined in 1.5.2						
12,0	2385	563	6,08	5,09	424	1,97
1.5.6 unloaded						
-	2410	569	3,95	3,31	-	-

No load maximum engine speed: 2520 rev/min
Equivalent flywheel torque at rated engine speed: 220 Nm
Maximum equivalent flywheel torque: 259 Nm at 1496 rev/min of the engine

Mean atmospheric conditions

temperature	20 °C
pressure	100 kPa
rel. humidity	32 %

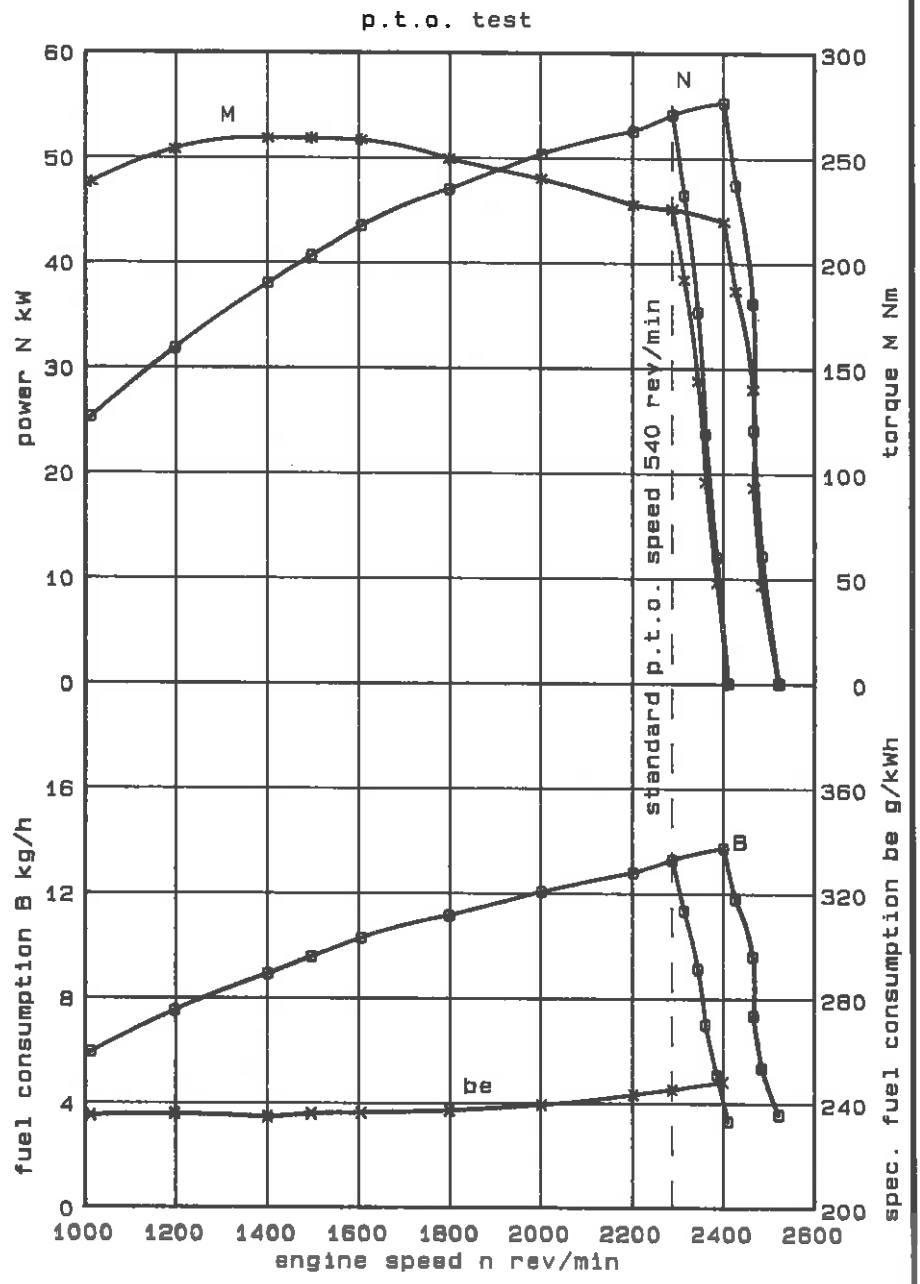
Maximum temperatures

cylinder head	85 °C
oil	120 °C
fuel	22 °C
air intake	22 °C

PRÜFUNGS-ABTEILUNG

Fendt Farmer 280 P

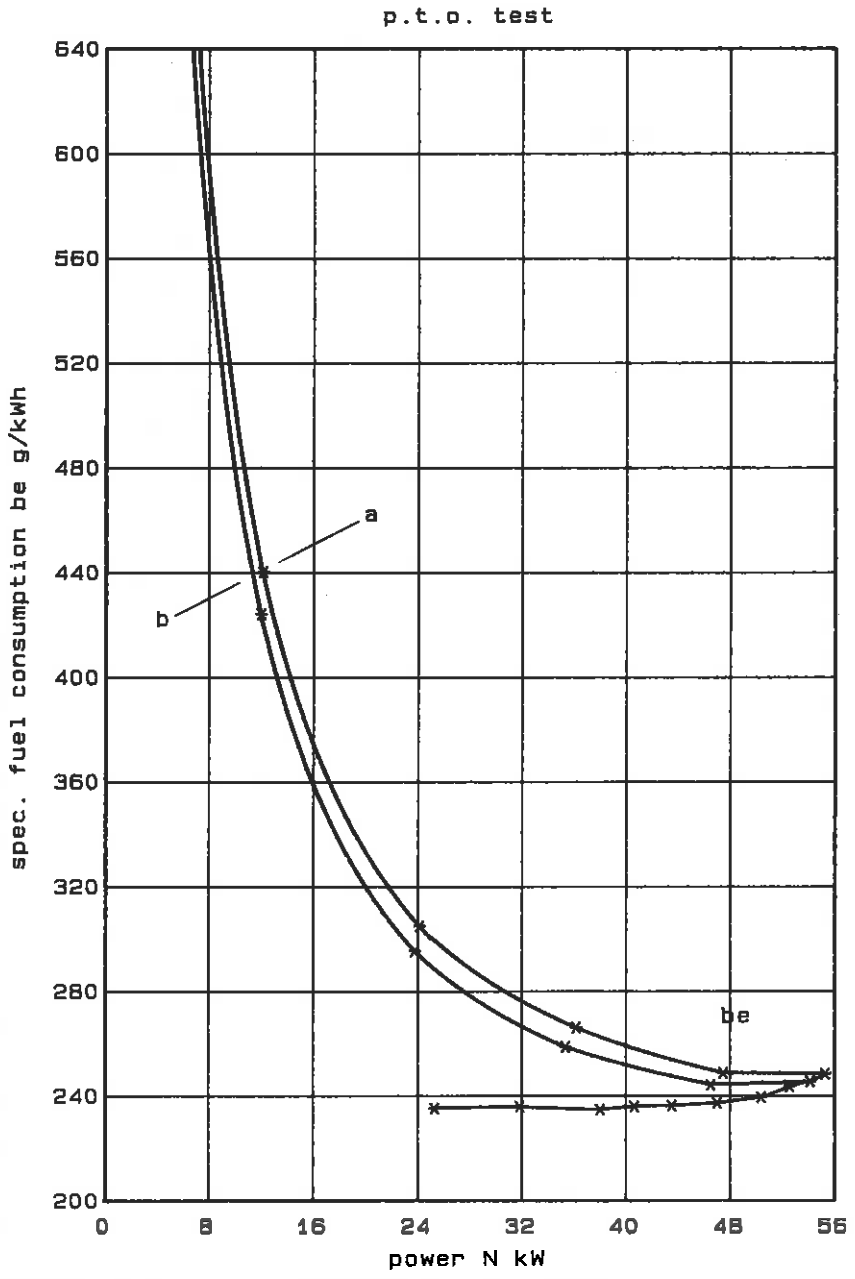
Test-No.88-170



PRÜFUNGS-ABTEILUNG

Fendt Farmer 280 P

Test-No.88-170



PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests: 19th December 1988 and 9th January 1989

2.1 Hydraulic power test ("fast action" delivery)

Sustained pressure with relief valve open 18,4 MPa
Pump delivery rate at minimum pressure 72,1 l/min

	Hydraulic power kW	Flow rate l/min	Pressure MPa	Oil temperature °C
At 90% of the actual relief valve setting	18,4	66,4	16,6	65
At max. power	18,4	66,4	16,6	65

Tapping point used for test: At rear of tractor

2.2 Power lift test

	At the hitch point	On the frame
Height of lower hitch points above ground in down position	200 mm	200 mm
Vertical movement without lifting forces	628 mm	769 mm
Vertical movement with lifting forces	605 mm	742 mm
Max. corrected force exerted through full range	16,9 kN	14,7 kN
Corresponding pressure	16,6 MPa	16,6 MPa
Moment about rear axle	-	22,8 kNm
Max. tilt angle of mast from vertical	-	10,0 °

Lifting heights relative to horizontal lower links

mm	-332	-300	-285	-200	-100	0	+100	+200	+300	+320	+400	+410

Lifting forces at hitch points, corrected to 16,6 MPa

kN			16,9	17,8	18,9	19,9	20,6	21,3	21,5	21,4		

Lifting forces at standard frame, corrected to 16,6 MPa

kN	15,3	15,5		16,0	16,4	16,5	16,4	16,1	15,6		14,9	14,7

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

3 DRAWBAR PERFORMANCE

Date of tests: 24th January till 2nd February 1989
Type of track: Concrete

Gear	Driving speed km/h	Power kW	Drawbar pull kN	Engine speed rev/min	Slip of wheels %
3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor) height of drawbar above ground 375 mm					
3 A FS	4,58	36,6	28,77	2457	15,0
1 S FL	4,98	40,0	28,88	2435	15,0
1 S FM	6,38	45,5	25,66	2403	9,6
1 S FS	7,70	47,3	22,13	2396	7,0
2 S FL	8,67	47,2	19,61	2399	5,8
2 S FM	10,80	47,1	15,71	2403	4,1
2 S FS	12,78	46,9	13,21	2396	3,4
3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor) height of drawbar above ground 370 mm					
1 A FL	1,26	15,4	43,97	2470	15,0
1 A FM	1,53	18,7	44,11	2460	15,1
1 A FS	1,80	22,0	44,02	2454	15,1
2 A FL	2,00	24,4	43,95	2451	15,0
2 A FM	2,44	29,9	44,05	2448	14,9
2 A FS	2,86	35,0	44,02	2438	15,0
3 A FL	3,12	38,1	43,97	2422	14,9
3 A FM	3,94	44,0	40,24	2396	10,8
3 A FS	4,81	45,5	34,08	2403	7,8
1 S FL	5,35	46,4	31,24	2403	6,6
1 S FM	6,65	47,4	25,64	2403	4,9
1 S FS	7,92	47,8	21,74	2399	3,9
2 S FL	8,86	47,1	19,12	2403	3,4
2 S FM	10,87	46,7	15,45	2403	2,6
3.3.1 FIVE-HOUR-TEST at 75% of pull at maximum power in 1 S FM gear					
1 S FM	6,86	36,8	19,29	2441	3,4
3.3.2 FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test 3.2					
3 A FL	3,11	38,1	44,12	2415	-

Total oil consumption during ten hours duration of tests 3.3.1 and 3.3.2 : 57 g/h

PRÜFUNGS-ABTEILUNG

Test No. 88-170

Tyre size front: 11.5/80 - 15.3
rear: 14.9 R 28

Specific fuel consumpt. g/kWh	Specific energy kWh/l	Temperatures Fuel °C	Cylinder-head °C	Engine-oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 150 kPa at front, 100 kPa at rear							
332	2,52	28	49	80	2	99	1015
325	2,57	27	53	81	2	98	1015
304	2,75	27	73	95	1	99	1015
292	2,86	27	73	96	1	99	1015
293	2,85	28	75	87	1	99	1015
294	2,85	28	70	93	1	98	1015
295	2,83	28	72	93	2	99	1015
tyre inflation pressure 275 kPa at front, 100 kPa at rear							
471	1,77	28	48	82	4	69	1025
432	1,93	31	44	79	4	88	1025
401	2,08	28	47	79	4	95	1025
385	2,17	29	49	79	4	99	1025
357	2,34	29	52	80	4	97	1025
342	2,44	28	53	81	4	99	1025
334	2,50	28	54	86	3	99	1025
315	2,65	29	65	89	3	98	1025
304	2,74	29	76	99	3	99	1024
295	2,83	31	65	95	3	97	1024
291	2,86	31	73	95	3	99	1024
289	2,89	28	70	95	3	99	1024
294	2,84	29	74	97	3	99	1024
296	2,82	31	72	94	3	99	1024
302	2,76	28	54	85	5	84	1018
-	-	27	54	85	3	95	1019

Test 3.3.2 was carried out with additional ballast of 360 kg, the figures not quoted are therefore irrelevant

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

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

Wheel equipment front: 11.5/80 - 15.3
rear: 14.9 R 28

Track of wheels front: 1495 mm
rear: 1488 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning area	3,65	3,67	4,00	4,01
Radius of turning circle	3,41	3,43	3,76	3,77

5 LOCATION OF CENTRE OF GRAVITY

Height above ground	751 mm
Distance forward from rear axle centre	892 mm
Distance from tractor's median plane, to the left	1 mm

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

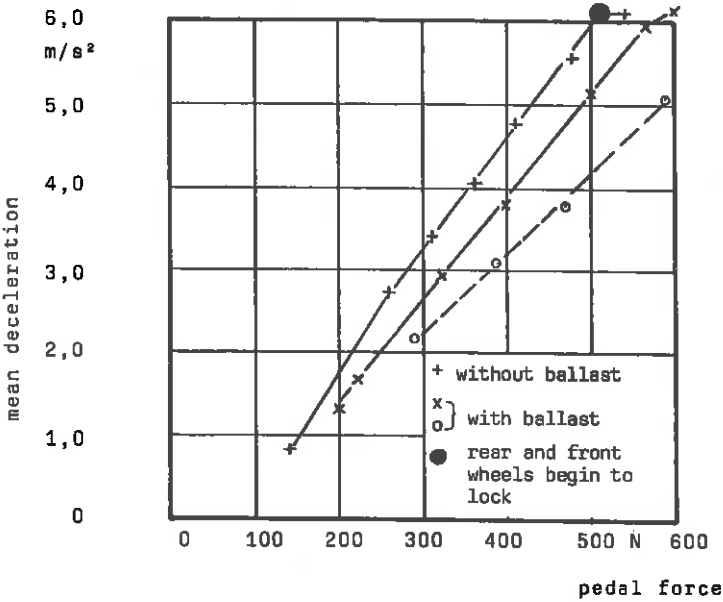
6 BRAKING (Front wheel drive switch in position "off", front wheel drive is engaged automatically when braking)

Date of tests: 25th till 31st January 1989

	Tractor mass (with driver) front kg	rear kg	total kg	Speed before application of brakes km/h
Without ballast	1140	1650	2790	36,9
With ballast	2010	2490	4500	36,5

6.1 Cold service braking device test

6.2 Fade test



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

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

6.3 Parking braking device test

		Ballasted tractor on 18% - slope up	down
Braking device control force	N	180	180

PRÜFUNGS-ABTEILUNG
FENDT FARMER 280 P

Test No. 88-170

7 MEASUREMENTS OF EXTERNAL NOISE LEVEL

Date of test: 24th January 1989
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2233

Results of test

Gear: 3rd Overdrive*)
Travelling speed before acceleration: 27,4 km/h
Sound level: 86,5 dB(A)

APPENDIX

MEASUREMENTS OF NOISE IN THE PROTECTIVE STRUCTURE

Results of OECD-test no. CSS 068/1/NM 0070 with FENDT safety cab model 247.500;
measured with long exhaust pipe, mouth showing upwards

Date of test: 8th August 1988
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2233

Gear	Drawbar pull kN	Travelling speed km/h	Sound level dB(A)
1 S FM +)	24,11	6,51	84,5
1 S FM +)	light load	7,47	82,5
3rd Overdrive*)	light load	37,27	83,0

+) The 1 S FM gear corresponds to the nominal travelling speed nearest to 7,5 km/h

*) Front wheel drive disengaged

Published
with the support of the Federal Minister for Food, Agriculture and Forestry

Deutsche Landwirtschafts-Gesellschaft e.V. (DLG)
Fachbereich Landtechnik — Prüfungsabteilung —
Zimmerweg 16 (DLG-Haus)
D-6000 Frankfurt am Main 1