

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



O.E.C.D. No.

1029



**Agricultural Tractor
FENDT FARMER 307 LSA
TURBOMATIK (4WD)
Type denomination FWA 170 S**

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: February till June 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: 24th October 1986

O.E.C.D. No. 1029

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/cm ²	or 1 kp/cm ²	=	0,981 bar
	1000 mbar	=	750,10 mm Hg			

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*) All stated dimensions refer to tyre sizes 14.5-20 MPT at front and 16.9 R 34 at rear, as well as to track widths 1573 mm at front and 1510 mm at rear	



Tractor manufacturer: X. Fendt & Co.
D-8952 Marktoberdorf

Submitted for test by: Manufacturer with agreement by DLG

Place of running-in: Marktoberdorf and Groß-Umstadt

Duration of running-in: Engine and tractor appr. 50 h

SPECIFICATION OF TRACTOR

Tractor

Make: FENDT

Trade name: FARMER 307 LSA TURBOMATIK

Model

denomination: FWA 170 S

Type: Wheel tractor, unit construction, 4 wheel driven

Serial No.: 170/21/0005

Start of series: 170/21/0001

Engine

Make: MWM

Model: TD 226B-3;

Type: Watercooled 4-stroke Diesel-engine with direct injection, supercharged

Serial-No.: TD 226.3.B 750 101

Cylinders: 3, vertical in line, bore 105 mm, stroke 120 mm, displacement 3117 cm³; compression ratio 15,5_{+0,5} : 1; wet cylinder liners, replaceable

Valves: Overhead

Fuel system: SOLEX fuel supply pump, model 7.15.509.00;
BOSCH in-line injection pump
PES 3A 90 D 320/3 RS 2658,
serial no. 25 059 668,
manufacturer's production setting 70₊₁ mm³/stroke at rated engine speed and full load;
injection timing 23₋₁° before TDC;
BOSCH multihole injection nozzles DLLA 151 S 972,
injection pressure 220₊₅ bar;
BOSCH fuel filter with replaceable paper cartridge; dual filter optional;
fuel tank with 80 l capacity



Governor: BOSCH centrifugal variable speed type governor
RSV 325-1500 A 2 B 505 2R;
governed range of engine speed 650 to 2330 1/min,
rated engine speed 2200 1/min

Supercharger: KKK, model K14-134 AA 087,
exhaust driven supercharger,
max. charge-air pressure 0,92 bar

Air cleaner: MANN
dry paper element filter with pre-cleaner,
replaceable main cartridge and safety cartridge,
electrical maintenance indicator;
air intake above bonnet

**Exhaust
silencer:** EBERSPÄCHER
reflection-absorption-type silencer,
above engine bonnet;
680 mm long, 110 mm dia,
mouth showing upwards, 2475 mm above ground;
silencer optional on the left side of engine
with mouth showing rearwards

**Lubrication
system:** Forced feed from gear type pump;
MANN filter in full flow with by-pass valve and
replaceable cartridge;
oil and cartridge change period
200 operating hours;
oil capacity 8 l;
specified oil quality MIL-L-2104 C
resp. API-CD,
recommended oil viscosities:

over	+30°C	SAE 40
over	0°C to +30°C	SAE 30
over	-10°C to +10°C	SAE 20W/20
below	- 5°C	SAE 10W
over	-10°C to +35°C	SAE 15W/40
over	-10°C to +25°C	SAE 15W/30

or STOU SAE 15W/30,
acc. to MIL-L 2105 resp. API-GL4
engine oil-cooling water heat exchanger
(10 plates) between oil filter and filter
socket



Cooling system: Watercooling with impeller pump;
overpressure valve set to 0,4 bar;
cooling circuit with by-pass and thermostat,
fan with 7 blades, 440 mm dia;
water capacity 12 l;
optional cooling system for tropic conditions

Starting system: Electrical;
BOSCH solenoid pre engaged-drive starting
motor 2,7 kW;
depressed pedal of travel clutch
as safety device;
BERU flame plug in intake manifold

**Electrical
equipment:** 12 Volt, negative earth;
BOSCH 3-phase alternator KI 14 V 55A 770W;
1 lead calcium battery, 90 Ah at 20 hours
rating; 540 A

Transmission

Clutch: 1. VOITH
fluid clutch 358 TD F8 for travel and
p.t.o. drive
2. FICHTEL & SACHS
dry single disc clutch GTF 320 N for travel
drive, disc 320 mm dia, hydraulically operated
by pedal, self readjusting

Gear box: FENDT type R 21/6;
synchro-mesh gear box with 3 forward
speeds and 1 reverse speed;
1 synchro-mesh close stepped range gear with
3 ranges (FL, FM and FS);
1 range gear with collar shifted road range
(S) and sliding gear shifted field range (A);
3 independent synchronized overdrive speeds,
total 21 forward and 6 reverse speeds;
optionally available with creeper range,
if creeper range is installed, fast range (FS)
and the 3rd overdrive are omitted, then
total 20 forward and 6 reverse speeds



PRÜFUNGS-ABTEILUNG
FENDT FARMER 307 LSA

Test No. 86-62

Rear axle and
final drives:

FENDT
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

Front axle and
final drives:

ZF, model APL 335,
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, multi-plate limited-slip
differential;
planetary final drives

Lubrication:

	Oil quality MIL-L-	Oil viscosity SAE	Oil capacity l	Oil change interval hours
Fluid clutch	46152	10W	5,8	5000
Gear box	2105	80	32,5	1000 or after 2 years
Front axle differential	2105 B	90	6,0	
Final drives at front			0,75 each	
Final drives at rear			3,0 each	



Total ratios and speeds

Range	Close stepped gear	Gear	Total ratio engine : driving wheel	Nominal travelling speed *) at rated engine speed km/h
Forward speeds				
A	FL	1	438,95	1,37
		2	274,35	2,20
		3	169,45	3,56
	FM	1	359,72	1,68
		2	224,82	2,68
		3	138,86	4,34
	FS	1	305,07	1,98
		2	190,67	3,16
		3	117,76	5,12
S	FL	1	109,74	5,49
		2	68,59	8,79
		3	42,36	14,23
	FM	1	89,93	6,71
		2	56,21	10,73
		3	34,72	17,37
	FS	1	76,27	7,91
		2	47,67	12,65
		3	29,44	20,48
1st Overdrive			24,92	24,20
2nd Overdrive			19,79	30,48
3rd Overdrive			15,92	37,88
Reverse speeds				
A	FL	R	303,22	1,99
	FM	R	248,49	2,43
	FS	R	210,74	2,86
S	FL	R	75,81	7,96
	FM	R	62,12	9,71
	FS	R	52,68	11,45

*) calculated with the radius index 745 mm and
2,4% slip of the fluid clutch



Power-take-off

Main p.t.o.:

Independent,
optionally shiftable as ground p.t.o. or with
reverse rotation (not installed on tested
tractor);
driven by dry multi-plate clutch, lever
operated, independent of travel clutch;
discs 168 mm dia;
1 p.t.o. shaft at rear of tractor,
in tractor's median plane;
height above ground 697 mm, 350 mm behind
rear wheel centre line, 35 mm dia,
6 splines ISO 500/DIN 9611, type 1;
rotation clockwise, viewed to tractor's rear

3 speeds are preselectable by hand lever, without power
restriction, (with 2 engaging pilot lamps):

P.t.o.	Transmission ratio	P.t.o. speed	Engine speed
		1/min	1/min
<u>540</u>	3,781	582	2200
		540	2042
<u>750</u>	2,895	760	2200
		540	1563
<u>1000</u>	2,072	1062	2200
		1000	2072

The stated speeds apply to unloaded p.t.o.
only;
under load the slippage of the fluid clutch
produces deviations of the p.t.o. speed,
see pages 20, 21, 34 and 35

Secondary p.t.o.: Optionally available front p.t.o.
1000 or 750 1/min;
(not installed on tested tractor)



Power lift

FENDT

hydraulic power lift in unit construction,
draft- and position-control, both steplessly
mixable, floating position;
upper link sensing, lowering throttle

Hydraulic system: Open centre system,
BOSCH tandem gear pump HY/ZFFS 11/16+14 L,
directly driven by engine,
delivery 37,4 l/min at rated engine speed;
BOSCH control valve HY/SR 175/60 L,
max. pressure 180+10 bar;
single acting ram with 86 mm bore and
138 mm stroke, no safety valve;
1 double acting BOSCH additional control
valve HY/SRZ 60 D;
up to 4 single or double acting additional
valves with oil tappings and separate oil
return pipes at rear of tractor and in
tractor's middle optionally available;
with optional automatic flow valve the
residual oil of the steering circuit can
be fed into the remote oil circuit
-"high speed operation"-, fitted on the
tested tractor, or used separately
-"creep speed operation"-;
separate hydraulic oil tank with 20 l
capacity, on the right side of engine;
up to 6 l oil may be taken off working
travelling and 15 l stationary;
recommended oil: engine oil SAE 20W/20
(tropics SAE 30), MIL-L-2104C or
MIL-L-46152;
oil filter in return line,
oil- and oil filter-change every
1000 hours or yearly

**Lift shaft
lubrication:**

Own oil reservoir in power lift unit,
oil level checking interval 200 hours;
specified oil: multi-purpose gear oil
SAE 80, MIL-L-2105



Implement linkage
at rear:

Three point linkage with WALTERSCHEID quick couplers, cat. 2 ISO 730/I, DIN 9674; lower link side stabilization by quick clamping devices with middle centering

Implement linkage
at front:

Optionally available, not fitted on tested tractor

Pull attachment

Swinging drawbar: Optionally available

Piton fix or
hitch:

Optionally available

Trailer hitch:

FENDT AK-001, non automatical
hitch point

above ground 482,544,727,769,811,853 or 895 mm

behind rear wheel centre line 515 mm

behind p.t.o. shaft end 165 mm

above p.t.o. shaft end 30,72,114,156 or 198 mm

below p.t.o. shaft end 215 or 153 mm

height adjustable by one-hand quick
adjustment; hole 33 mm dia;

maximum permissible vertical load 1340 kg

automatical trailer hitch optionally
available

Holed drawbar:

Long bar (optional short bar);

total length 1700 mm, length between joint
balls 810 mm, thickness 25 mm, width 100 mm;

9 holes between joint balls with 80 mm

distance each, outside of joint balls

4 holes on each side with 80 mm distance
each;

all holes 33 mm dia;

height above ground

minimum 195 mm

maximum 1075 mm

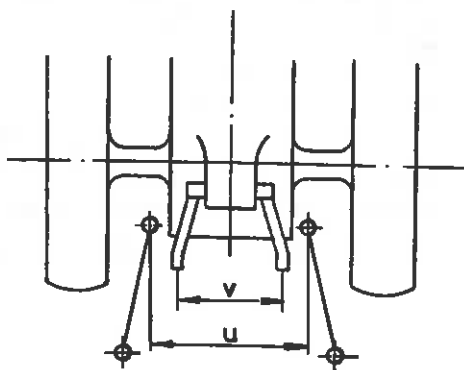
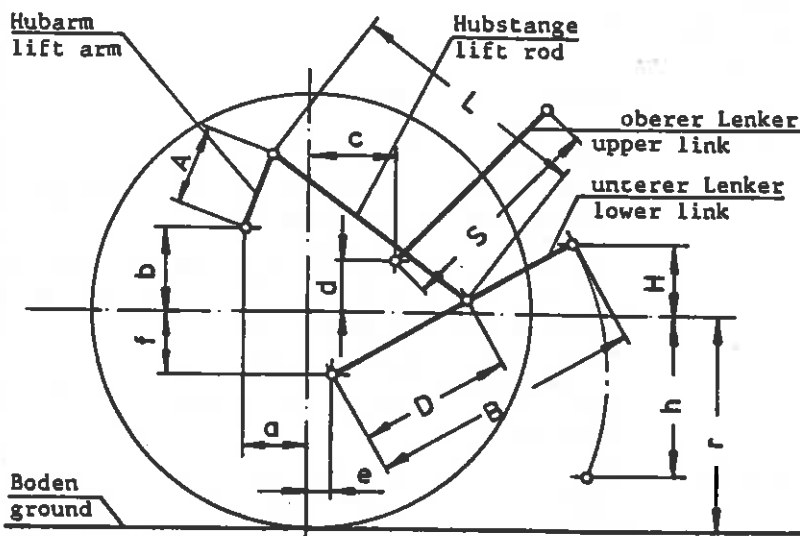
holes' centre line behind p.t.o. shaft end
(lower links in horizontal position) 630 mm

Towing hitch:

At front of tractor, 670 mm above ground



Implement linkage
at rear:





Dimensions of rear implement linkage (projected lengths in mm, underlined dimensions are valid for power lift measurements p. 29)

Rear tyres	radius index	(r)	745
Front tyres	radius index	(r')	503
Length of lift arms		(A)	285
Length of lower links		(B)	847
Distance of lift arm pivot points from rear wheelcentre	horizontal	(a)	-15
	vertical	(b)	303
Horizontal distance between lower link pivot points		(u)	445
Horizontal distance between lift arm end points		(v)	520
Length of upper link		(S)	577 to 877, <u>718</u>
Distance of upper link pivot point from rear wheelcentre	horizontal	(c)	146 or <u>135</u>
	vertical	(d)	408 or <u>446</u>
Distance of lower link pivot point from rear wheelcentre	horizontal	(e)	97
	vertical	(f)	200
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	516
Length of lift rods		(L)	633 to 762, <u>690</u>
Height of lower link hitch points relative to rear axle centre line (situated 745 mm above ground), these data are valid for unloaded power lift:			

Length of lift rods	(L)	<u>690</u>	633	762
Linkage distance of lift rods	(D)	516		
Lowest position	(h)	545	332	615
Highest position	(H)	155	265	140
Transport position	(h')	300	160	445

Type of transport lock: Hydraulic-mechanical



Steering

FENDT with ZF, model 8492;
hydrostatic steering; working pressure 130 bar,
oil supply by tandem part of hydraulic pump
with 33 l/min delivery at rated engine speed,
with flow-control valve 11 l/min;
1 double acting ram (symmetrical design),
integrated in front axle, 235 mm stroke,
63 mm dia, piston rod 36 mm dia

Brakes

- Parking brake:** Independent of service brake;
internal-expanding-shoe brake;
mechanically acting on 2 brake drums
with 180 mm dia and 30 mm width,
on each differential half shaft;
operated by pulling handle with ratchet;
brake indicator lamp
- Service brake:** FENDT with KNOTT and ATE;
pedal operated muscle power brake with
hydraulic transmission to 2 internal-expanding-shoe brakes on the differential half shafts with 180 mm dia and 60 mm width;
additional caliper disc brake, disc 260 mm dia, acting on joint shaft to front axle drive
- Steering brake:** Divided pedal of service brake,
for normal use locked together
- Trailer braking take-off:** None;
compressed-air brake or hydraulic brake optionally available

Wheels

- Steered wheels:** At front, 2 pneumatics
14.5-20 MPT, 10 ply, CONTINENTAL,
cross-ply tyres;
maximum permissible load per tyre 2300 kg
at 2,5 bar inflation pressure and 40 km/h;
track width 1573 mm, non adjustable;
rims 11 x 20



PRÜFUNGS-ABTEILUNG

FENDT FARMER 307 LSA

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Test No. 86-62

Driving wheels: At front and at rear;
rear driving wheels:
2 pneumatics 16.9 R 34 8 ply CONTINENTAL,
radial-ply tyres;
maximum permissible load per tyre 2015 kg
at 1,3 bar inflation pressure and 40 km/h;
track width 1510 mm, adjustable to 1410 mm
by reversing the wheels;
rims DW 14 x 34,
offset lug type rims optionally available

Wheel base: 2152 mm

Cab

FENDT, model 186.501;
OECD-tested, approval no. CSD 0989/5;
antivibration mounted by 4 silent blocks on
tractor, 1 door and 2 steps each on the
left and right;
steps 505 and 760 mm,
driver's platform 1025 mm above ground;
doors optionally lockable in ventilation
position; front-, rear- and side-windows
as well as roof hatch tiltable;
combined heating and ventilation system with
3-stage blower, heating connected to cooling
water circuit;
air intake below windscreen, dry air filter;
air outlet jets at instrument panel, defroster
nozzles, heating by circulating air possible;
additional ventilation system with 3-stage
blower incorporated in roof (outfit on
request), 6 air outlet jets for head room;
air intake above windscreen, dry air filter
(toxin-particles filter optional);
cab optionally available with air conditioner;
cab with roof, which is 70 mm lower,
optionally available



Noise reduction materials:

Floor	napped rubber mat with foam under it bitumen mat	15 mm 2 mm
Roof and roof hatch	phenolic resin bonded cotton fleece, molded, with FT-covering fabric	6-16 mm
Mudguards	PU-foam coated with imitation leather	15 mm
Seat support	napped rubber mat	10 mm
Rear wall	rubber mat	10 mm
Instrument and steering support	inside: bitumen mat foam on pedal openings	5 mm

Seat GRAMMER, model DS 85 H1/90 AR;
upholstered seat with arm rests and
adjustable back rest;
adjustable spring with hydraulic shock
absorber;
additional horizontal spring suspension
with shock absorber; rotating to both
sides about 15°;
height of unloaded seat above platform
adjustable in 2 steps from 500 to 560 mm;
longitudinal adjustment range 150 mm;
seat with pneumatic suspension optionally

Number of
grease points 20

Running-time
meter Mechanical, combined with tachometer,
driven by camshaft of engine;
reference engine speed for one really
counted hour 1715 1/min


Overall dimensions

Total length:	3780 mm without ballast 4297 mm with ballast
Total width:	1945 mm without ballast 2150 mm with ballast
Total height:	2593 mm to top of cab roof
Ground clearance:	410 mm below front axle

Lighting equipment Electrical, 12 Volt, as per German legislation

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre mm
Head lights	135 x 115	995	796
Side lights	70 x 20	1445	145
Rear lights	40 x 60	1532	260
Reflectors			
1st pair	117 x 28	1470	260
2nd pair	75 dia	690	635

Permissible tyres

Combinations acc. to operator's manual

Tyre sizes			
at front		at rear	
11.2-24	6 ply	16.9R34	6 ply
11.2R24	114 A8	16.9R34	8 ply
12.4R20	116 A8	13.6R38	8 ply
12.5-20	MPT 10 ply	13.6R38	128 A8
14.5-20	MPT 10 ply	16.9R30	6 ply
14.5R20	(375/75R20)	16.9R30	8 ply
9.5-24	6 ply VF	16.9R30	137 A8
9.5R28	6 ply VF	18.4R30	8 ply
9.5R28	109 A8 VF	18.4R30	142 A8
		9.5-44	8 ply VF



TEST CONDITIONS

Track setting 1573 mm at front
 1510 mm at rear

<u>Weights</u>		Without driver	With driver
Without ballast:	front	1340 kg	1355 kg
	rear	2105 kg	2190 kg
	total	3445 kg	3545 kg
Front ballast:	10 front end weights, total		350 kg
	9 additional weights, total		494 kg
	water in the tyres		165 kg
Rear ballast:	water in the tyres		446 kg
With ballast:	front	2485 kg	2500 kg
	rear	2415 kg	2500 kg
	total	4900 kg	5000 kg
Technically permissible axle loads:	front		2500 kg
	rear		3900 kg
Technically permissible total weight:			5000 kg

Remarks None

Repairs None

**Fuels and lubricants used in tests**

Fuel: ARAL Diesel-fuel DIN 51601
density at 15°C
at engine test 0,832 kg/l
at p.t.o. test 0,829 kg/l
at drawbar test 0,840 kg/l

Engine oil: MOBIL MOBILAND SUPER UNIVERSAL SAE 15W/30

Fluid clutch: MOBIL DELVAC 1110 SAE 10W

Transmission: MOBIL MOBILUBE GX 80 SAE 80

Differential in front axle and all final drives: MOBIL MOBILUBE HD 90 SAE 90

Power lift and power steering: MOBIL DELVAC 1320 SAE 20W/20

Operation of drive-clutch and service-brake: Brake-fluid DOT 4

Grease: Multi-purpose grease



COMPULSORY TESTS

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

Date of tests: 17th April 1986
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	engine 1/min	Speed	p.t.o. 1/min	Fuel consumption		Specific energy kWh/l
		fl.clutch output 1/min		hourly 1/h	spec. kg/h g/kWh	

MAXIMUM POWER

At 2-hour test

47.2	1950	1891	912	13.37	11.08	235	3.53
------	------	------	-----	-------	-------	-----	------

At rated engine speed

46.9	2200	2149	1037	13.88	11.51	245	3.38
------	------	------	------	-------	-------	-----	------

At standard p.t.o. speed

46.8	2122	2073	1000	13.69	11.35	243	3.42
------	------	------	------	-------	-------	-----	------

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

(i) the torque corresponding to maximum power at rated speed

46.9	2200	2149	1037	13.88	11.51	245	3.38
------	------	------	------	-------	-------	-----	------

(ii) 85% of the torque obtained in (i)

40.9	2248	2199	1061	12.48	10.34	253	3.28
------	------	------	------	-------	-------	-----	------

(iii) 75% of the torque defined in (ii)

31.1	2270	2227	1075	10.21	8.46	272	3.04
------	------	------	------	-------	------	-----	------

(iv) 50% of the torque defined in (ii)

20.9	2282	2253	1087	7.88	6.54	312	2.66
------	------	------	------	------	------	-----	------

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

10.6	2296	2280	1100	5.58	4.63	437	1.90
------	------	------	------	------	------	-----	------

(vi) unloaded

-	2331	2327	1123	3.49	2.89	-	-
---	------	------	------	------	------	---	---



Power kW	engine 1/min	Speed		p.t.o. 1/min	Fuel consumption		Specific energy kWh/l
		fl.clutch output 1/min			hourly 1/h	spec. kg/h	
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							
46.8	2122	2073	1000	13.69	11.35	243	3.42
(ii) 85% of the torque obtained in (i)							
40.5	2160	2112	1019	12.17	10.09	249	3.33
(iii) 75% of the torque defined in (ii)							
30.6	2170	2130	1028	9.79	8.12	265	3.13
(iv) 50% of the torque defined in (ii)							
20.6	2180	2148	1036	7.53	6.24	303	2.73
(v) 25% of the torque defined in (ii)							
10.3	2190	2160	1042	5.26	4.36	421	1.97
(vi) unloaded							
-	2206	2203	1063	3.63	3.01	-	-

Standard specific fuel consumption (g/kWh): 253/312/249/303

No load maximum engine speed: 2331 1/min

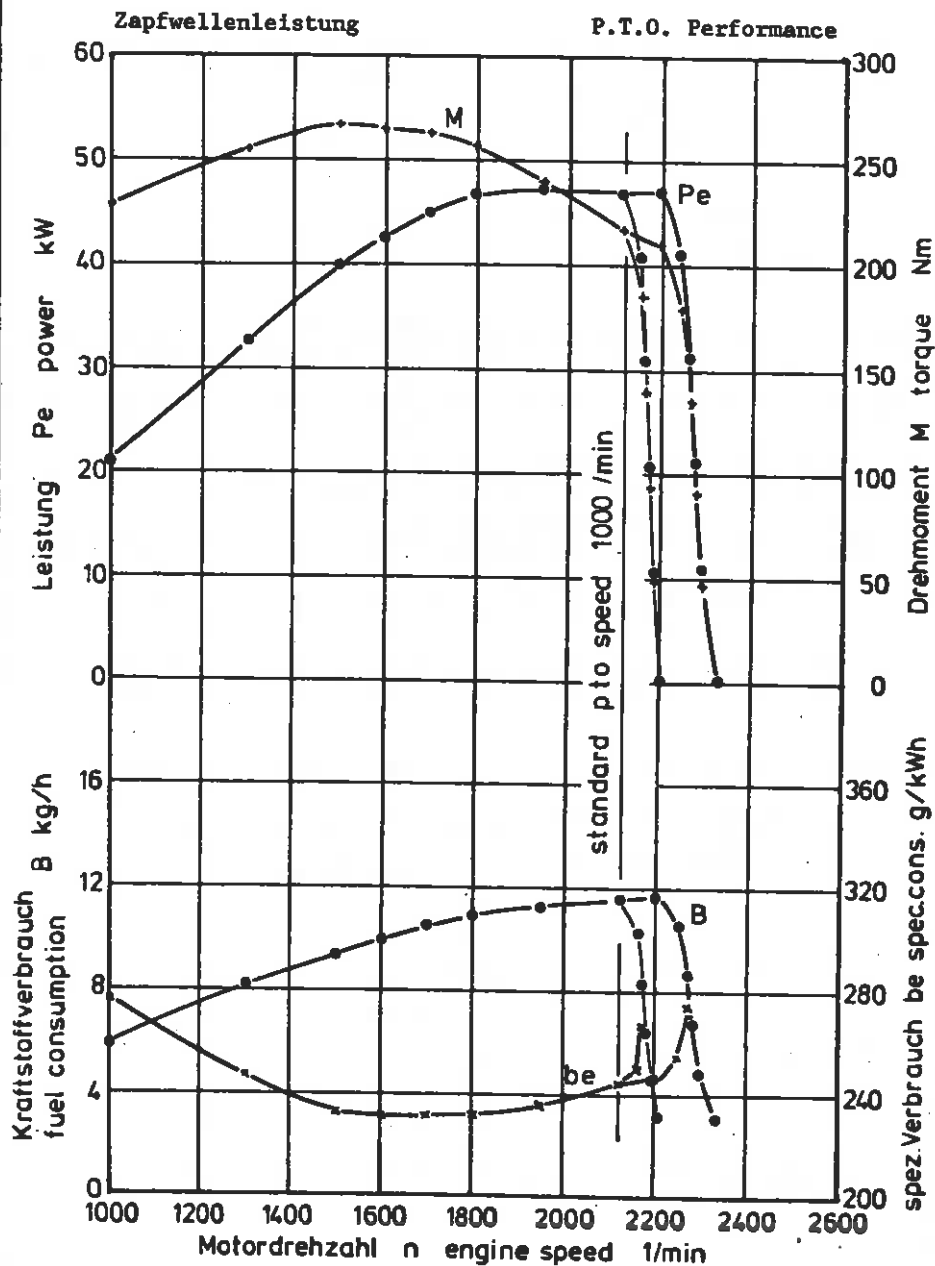
Equivalent flywheel torque at rated engine speed: 208 Nm

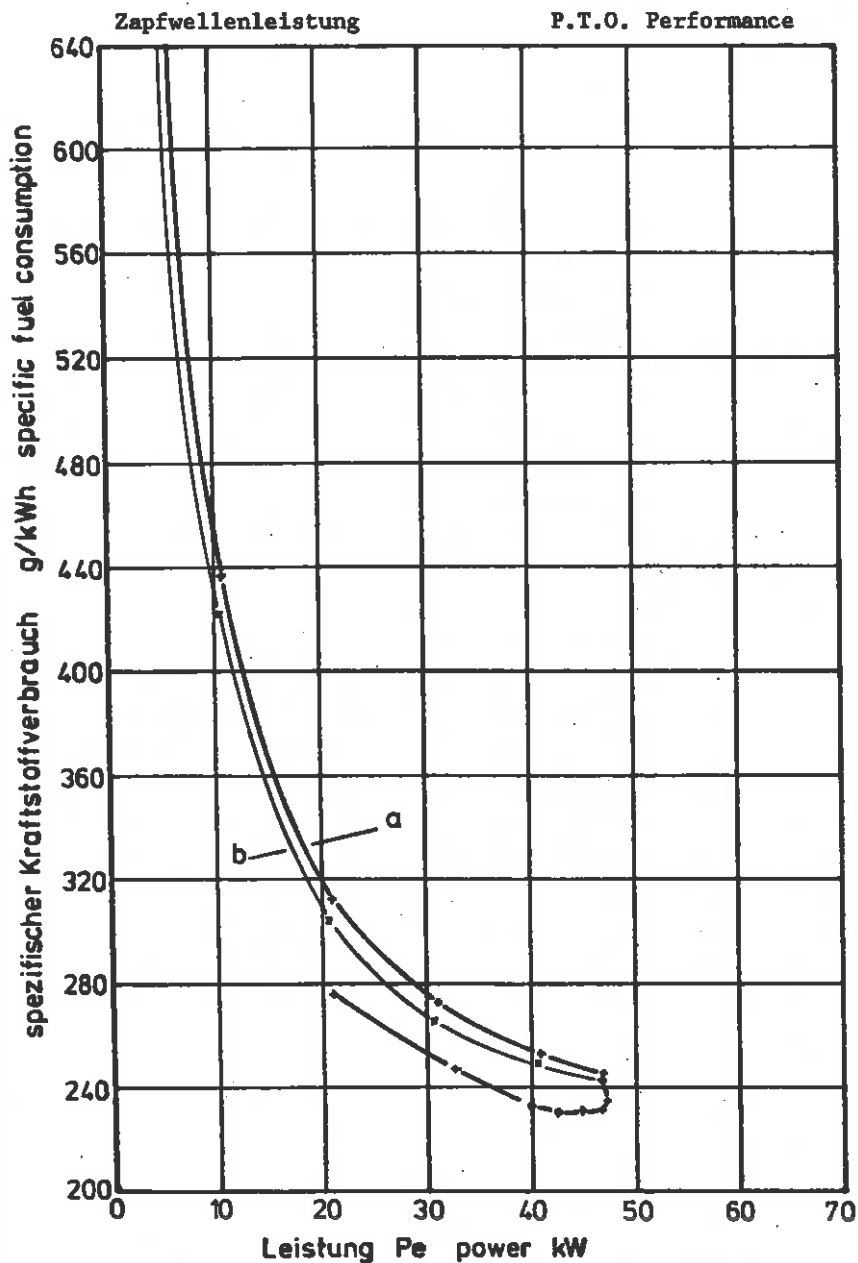
Maximum equivalent flywheel torque: 266 Nm at 1500 1/min
of the engine

Mean atmospheric conditions: temperature 19 °C
pressure 985 mbar
relative humidity 50 %

Maximum temperatures: coolant 90 °C
engine oil 103 °C
fuel 20 °C
engine air intake 20 °C

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







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FENDT FARMER 307 LSA

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(2) DRAWBAR PERFORMANCE

Date of tests: 28th April till 22nd May 1986

Type of track: Concrete

Gear	Driving speed	Power	Drawbar pull	Engine speed	Slip of wheels
	km/h	kW	daN	1/min	%

(1) MAXIMUM POWER (unballasted)
height of drawbar above ground 480 mm

3 A FL	3,15	31,9	3641	2251	15,0
3 A FM	3,58	36,3	3648	2120	15,1
3 A FS	3,98	37,5	3393	1950	12,5
1 S FL	4,33	39,1	3253	1950	11,5
1 S FM	5,50	39,9	2609	1951	7,7
1 S FS	6,61	40,2	2188	1952	6,0
2 S FL	7,41	40,5	1970	1950	5,2
2 S FM	9,11	40,2	1590	1947	4,1
2 S FS	10,85	39,2	1302	1953	3,3

(ii) MAXIMUM POWER (ballasted)
height of drawbar above ground 475 mm

1 A FL	1,25	17,1	4930	2302	15,1
1 A FM	1,51	20,9	4971	2284	14,9
1 A FS	1,77	24,4	4965	2278	14,9
2 A FL	1,96	27,0	4950	2265	15,0
2 A FM	2,36	32,5	4958	2254	14,9
2 A FS	2,65	36,5	4952	2153	15,0
3 A FL	2,73	36,6	4829	1948	13,6
3 A FM	3,52	38,6	3952	1953	8,7
3 A FS	4,24	39,2	3325	1948	6,8
1 S FL	4,55	40,4	3198	1947	6,4
1 S FM	5,65	40,6	2588	1951	4,8
1 S FS	6,72	40,5	2170	1949	3,8
2 S FL	7,52	40,4	1932	1952	3,4
2 S FM	9,24	39,3	1533	1952	2,6

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

1 S FM	6,65	35,9	1941	2245	3,4
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(iv) FIVE-HOUR-TEST
at pull corresponding to 15% wheel slip in test (ii)

2 A FS	2,61	36,0	4971	2134	-
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Total oil consumption during ten hours duration of tests
(iii) and (iv) 38 g/h



Tyre size front: 14.5-20 MPT 10 ply
 rear: 16.9R34 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 rear; 1,5 bar at front

328	2,53	27	82	89	18	72	994
316	2,63	26	81	89	17	69	994
298	2,78	29	83	90	15	78	996
284	2,92	29	84	92	16	74	996
276	3,01	30	83	93	16	74	996
273	3,03	31	85	95	18	71	996
271	3,06	34	83	93	20	71	997
276	3,00	33	84	94	20	67	997
282	2,93	35	84	94	19	68	997

tyre inflation pressure 0,8 bar at rear; 1,5 bar at front

404	2,08	26	85	88	21	96	996
374	2,21	26	85	85	21	94	996
355	2,37	27	85	86	20	95	996
344	2,44	26	84	86	21	95	997
330	2,54	27	83	87	21	94	997
317	2,65	26	84	88	20	97	997
306	2,75	29	83	93	23	98	997
288	2,91	31	84	95	22	94	997
284	2,96	30	83	95	22	86	997
275	3,05	30	83	95	22	88	997
275	3,06	30	86	94	22	90	997
273	3,07	30	85	93	22	89	997
277	3,04	30	84	94	22	90	997
282	2,98	30	86	94	21	97	998

298	2,82	32	85	98	22	66	1007
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-	-	32	85	99	20	74	1006
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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 (Front wheel drive disengaged)

Wheel equipment front: 14.5-20 MPT 10 ply
rear: 16.9R34 8 ply

Track of wheels front: 1573 mm
rear: 1510 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	4,36	3,72	5,05	4,35
Radius of turning circle	3,94	3,43	4,78	4,06

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	940 mm
Distance forward from rear axle centre	822 mm
Distance from tractor's median plane, to the left	2 mm

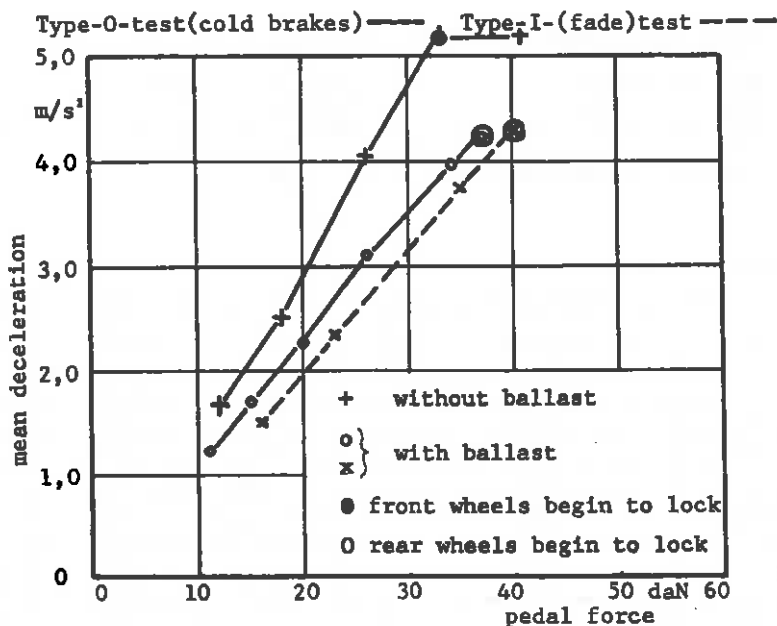


(5) BRAKING (Front wheel drive disengaged)

Date of tests: 30th April and 2nd May 1986

	Tractor mass (with driver)			Speed before application of brakes km/h
	front kg	rear kg	total kg	
Without ballast	1355	2190	3545	40,1
With ballast	2500	2500	5000	39,5

A) Service brake



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 $1 m/s^2$

B) Parking brake

	Ballasted tractor on 18%-slope		Unballasted tractor on 12%-slope with trailer of 3000kg	
	up	down	up	down
Braking device control force daN	19	20	18	18



(6) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 29th April 1986
Type of track: Concrete
Type of sound level meter: BRÜEL & KJÆR model 2209

Results of test

Gear: 3rd Overdrive +)
Travelling speed before acceleration: 29,4 km/h
Sound level: 83,5 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 28th April 1986
Type of track: Concrete
Type of sound level meter: BRÜEL & KJÆR model 2209

Tractor 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	3615	1,37	1,21	76,5
1 A FM	3647	1,68	1,50	77,0
1 A FS	3605	1,98	1,78	77,0
2 A FL	3631	2,20	1,95	77,5
2 A FM	3624	2,68	2,36	78,0
2 A FS	3644	3,16	2,54	78,0
3 A FL	3623	3,56	3,00	78,5
3 A FM	3498	4,34	3,67	80,0
3 A FS	2931	5,12	4,61	79,5
1 S FL	2694	5,49	5,14	79,5
1 S FM	2265	6,71	6,34	79,5
1 S FS*)	1862	7,91	7,61	79,5
1 S FS*)	light load	7,91	8,52	75,5
2 S FL	1700	8,79	8,46	79,0
2 S FM	1346	10,73	10,42	79,5
2 S FS	1088	12,65	12,37	78,5
3 S FL	978	14,23	13,95	79,5
3 S FM	769	17,37	17,18	79,5
3rd Overd.+) light load		37,88	39,20	78,0

+) Front wheel drive disengaged

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



PRÜFUNGS-ABTEILUNG
FENDT FARMER 307 LSA

Test No. 86-62

(8) LIFTING FORCES AND HYDRAULIC POWER

Date of tests: 4th June 1986

Lifting Forces (Linkage dimensions: see page 13)

	Height of lower hitch points 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	200	685	2170	164	-	-
On the frame	200	802	1880	164	2922	11

Temperature of hydraulic fluid at start of test 65°C

Lifting heights relative to horizontal lower links

mm	-392	-345	-300	-200	-100	0	+100	+200	+300	+340	+400	+410
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Lifting forces at hitch points

daN		2170	2315	2460	2530	2590	2550	2550	2530	2550		
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Lifting forces at test frame

daN	2020		2150	2210	2240	2240	2170	2100	2060		1900	1880
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Hydraulic Power

Sustained pressure with relief valve open 182 bar*)/188 bar +)
Pump delivery rate at minimum pressure 40,1 l/min*)/61,4 l/min+)

	Hydraulic power kW	Flow rate l/min	Pressure bar	Oil temperature °C
*) at 90% of the actual	10,4	38,2	164	65
+) relief valve setting	12,7	45,2	169	65
*) maximum	10,4	38,2	164	65
+) maximum	14,7	54,6	162	65

*) at standard delivery
+) at valve position "high speed operation", see page 10
Tapping point used for test: at rear of tractor

**PRÜFUNGS-ABTEILUNG**

FENDT FARMER 307 LSA

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Test No. 86-62

OPTIONAL TESTS**(9) ENGINE PERFORMANCE**

Date of tests: 10th March 1986
 Location of tests: DLG-Testing-Station Groß-Umstadt
 Type of dynamometer: SCHENCK eddy-current dynamometer W 150

Power kW	Engine speed 1/min	1/h	Fuel consumption hourly kg/h	specific g/kWh	Specific energy kWh/l
<u>Maximum power</u>					
At 2-hour test					
53.4	1950	13.44	11.18	209	3.97
At rated engine speed					
52.8	2200	13.92	11.58	219	3.79
At standard p.t.o. speed (1000 1/min)					
53.2	2122	13.78	11.46	215	3.86
<u>Part loads</u>					
(i) the torque corresponding to maximum power at rated speed					
52.8	2200	13.92	11.58	219	3.79
(ii) 85% of the torque obtained in (i)					
45.9	2250	12.36	10.29	224	3.71
(iii) 75% of the torque defined in (ii)					
34.8	2272	9.95	8.28	238	3.49
(iv) 50% of the torque defined in (ii)					
23.3	2285	7.45	6.20	266	3.13
(v) 25% of the torque defined in (ii)					
11.7	2303	5.01	4.17	355	2.35
(vi) unloaded					
-	2333	2.72	2.27	-	-

Optimum fuel consumption: 205 g/kWh at 44 kW and 1630 1/min

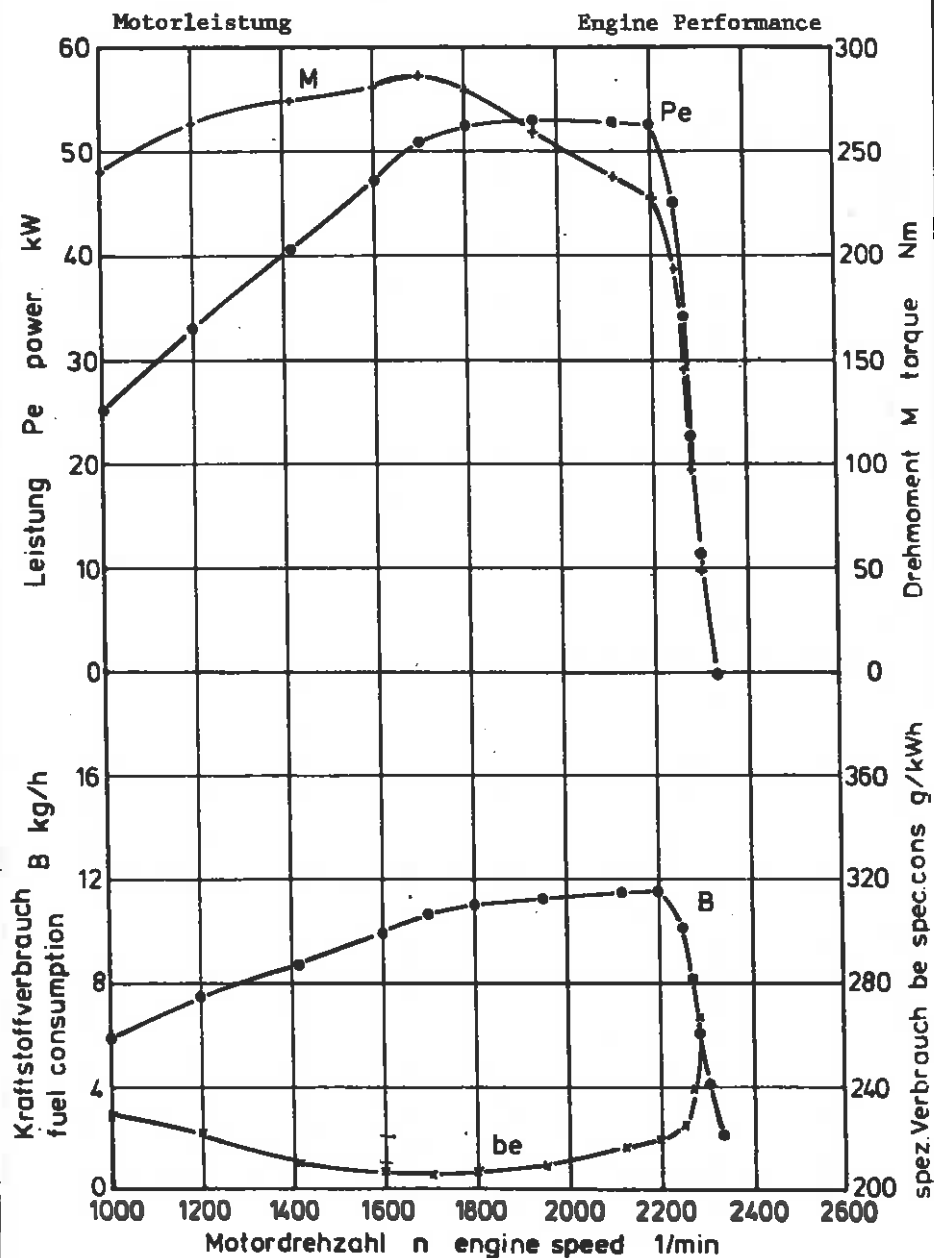
No load maximum engine speed: 2333 1/min

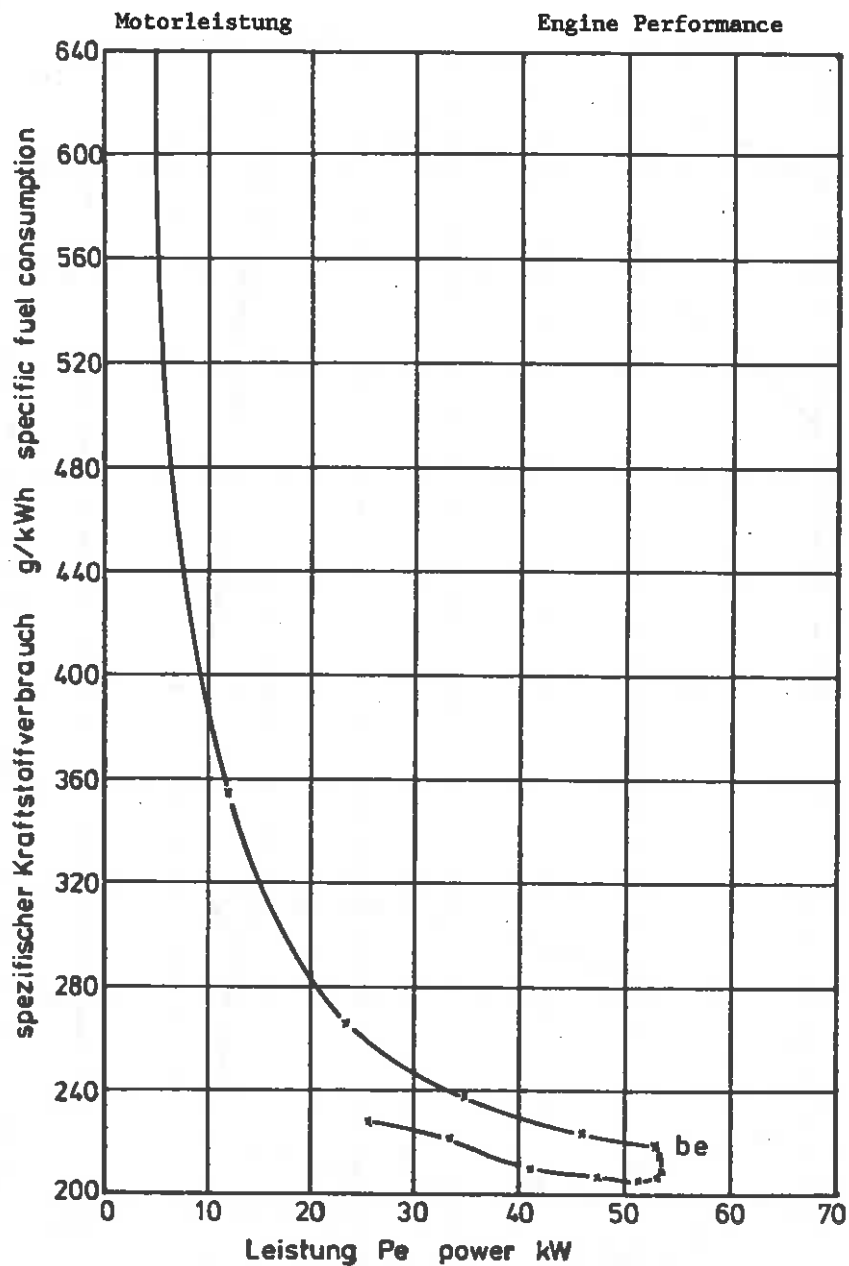
Torque at rated engine speed: 229 Nm

Maximum torque: 288 Nm at 1699 1/min of the engine

Mean atmospheric conditions: temperature 18 °C
 pressure 1001 mbar
 relative humidity 45 %

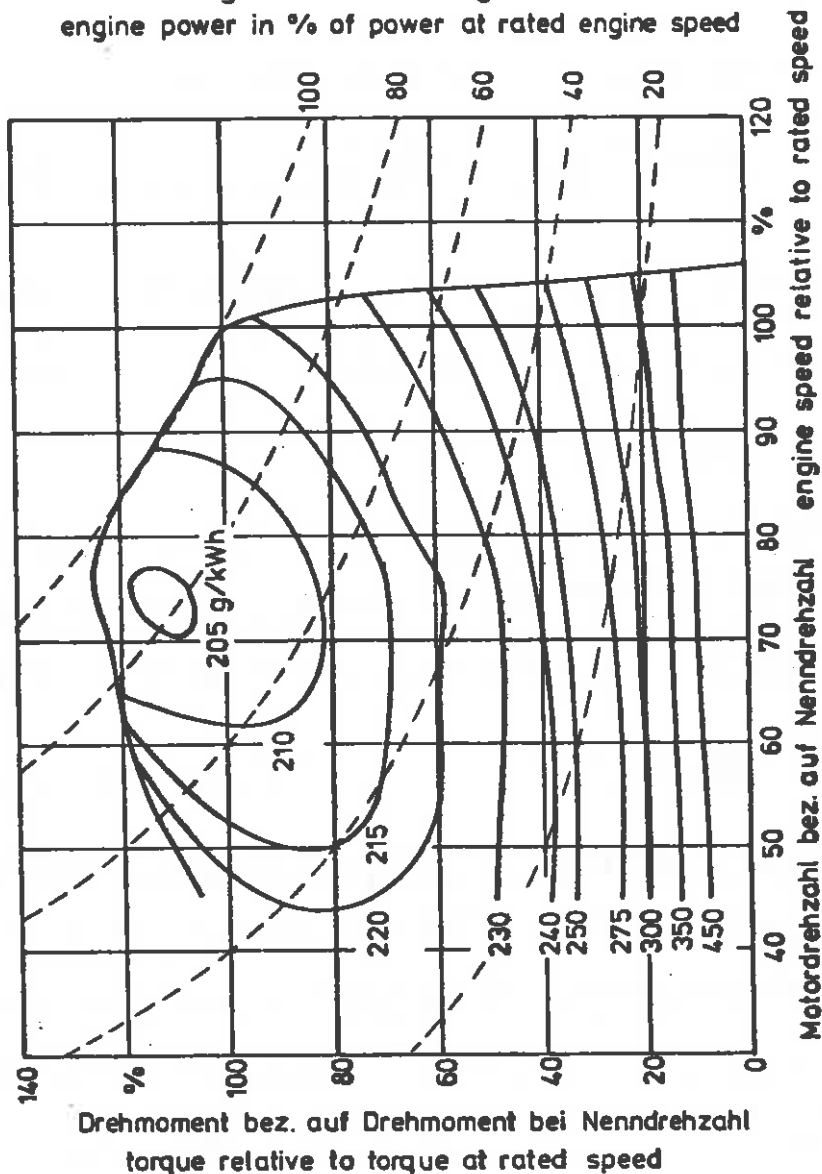
Maximum temperatures: coolant 92 °C
 engine oil 104 °C
 fuel 23 °C
 engine air intake 21 °C







Motorleistung in % der Leistung bei Nenndrehzahl
engine power in % of power at rated engine speed





ADDITIONAL TESTS

(1) MAIN POWER TAKE-OFF PERFORMANCE (750 1/min)

Date of tests: 21st April 1986
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	engine 1/min	Speed fl.clutch output 1/min	p.t.o. 1/min	Fuel consumption hourly		Specific spec. g/kWh	Specific energy kWh/l
				1/h	kg/h		

MAXIMUM POWER

At 2-hour test

47.1	1950	1892	654	13.39	11.10	236	3.52
------	------	------	-----	-------	-------	-----	------

At rated engine speed

46.8	2200	2148	742	13.87	11.49	245	3.38
------	------	------	-----	-------	-------	-----	------

At standard p.t.o. speed

42.8	1624	1563	540	11.92	9.88	231	3.59
------	------	------	-----	-------	------	-----	------

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

(i) the torque corresponding to maximum power at rated speed

46.8	2200	2148	742	13.87	11.49	245	3.38
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(ii) 85% of the torque obtained in (i)

40.7	2242	2198	759	12.45	10.32	254	3.27
------	------	------	-----	-------	-------	-----	------

(iii) 75% of the torque defined in (ii)

30.9	2264	2224	768	10.17	8.43	273	3.04
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(iv) 50% of the torque defined in (ii)

20.8	2280	2245	775	7.85	6.51	313	2.65
------	------	------	-----	------	------	-----	------

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

10.5	2292	2276	786	5.57	4.62	439	1.89
------	------	------	-----	------	------	-----	------

(vi) unloaded

-	2323	2318	801	3.46	2.87	-	-
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Power kW	engine 1/min	Speed fl. clutch p.t.o. output 1/min		Fuel consumption hourly		spec. g/kWh	Specific energy kWh/l
		1/min	1/min	1/h	kg/h	g/kWh	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							
42.8	1624	1563	540	11.92	9.88	231	3.59
(ii) 85% of the torque obtained in (i)							
37.0	1646	1591	550	10.34	8.57	232	3.58
(iii) 75% of the torque defined in (ii)							
28.1	1660	1612	557	8.16	6.76	240	3.45
(iv) 50% of the torque defined in (ii)							
19.1	1680	1641	567	5.98	4.96	260	3.19
(v) 25% of the torque defined in (ii)							
9.8	1704	1681	581	3.95	3.28	335	2.48
(vi) unloaded							
-	1734	1731	598	2.05	1.70	-	-

Standard specific fuel consumption (g/kWh): 254/313/232/260

No load maximum engine speed: 2323 1/min

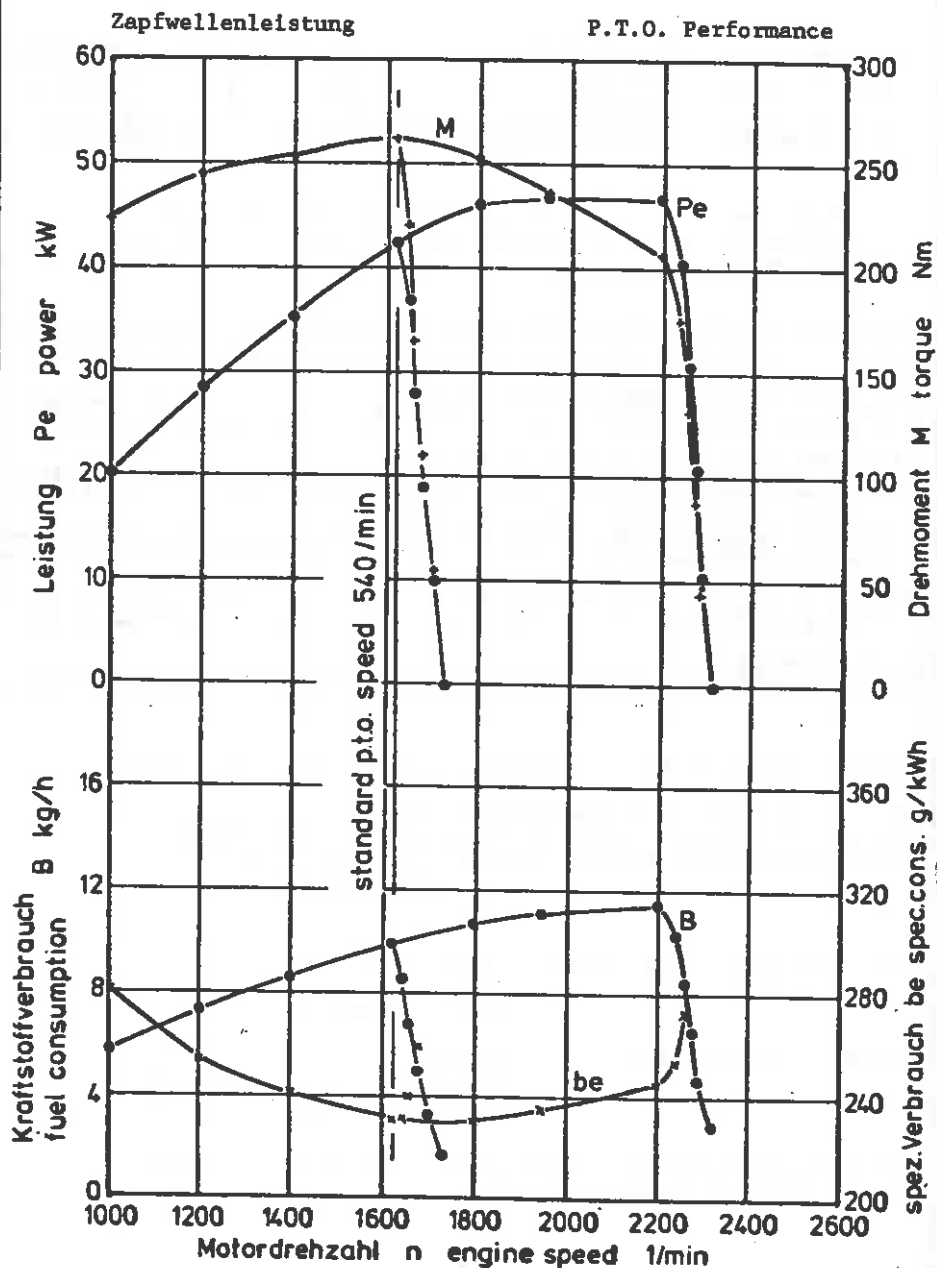
Equivalent flywheel torque at rated engine speed: 208 Nm

Maximum equivalent flywheel torque: 261 Nm at 1624 1/min
of the engine

Mean atmospheric conditions: temperature 19 °C
pressure 985 mbar
relative humidity 45%

Maximum temperatures: coolant 90 °C
engine oil 103 °C
fuel 20 °C
engine air intake 20 °C

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





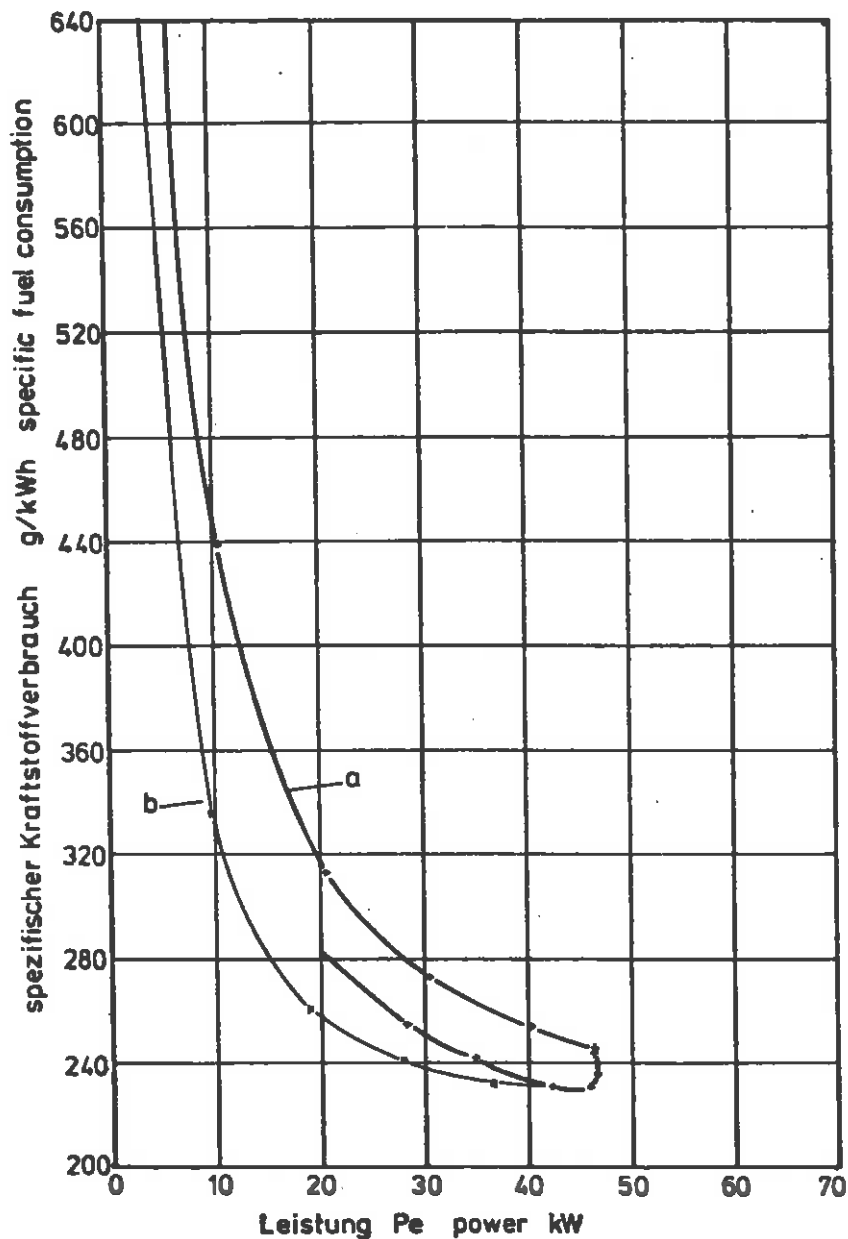
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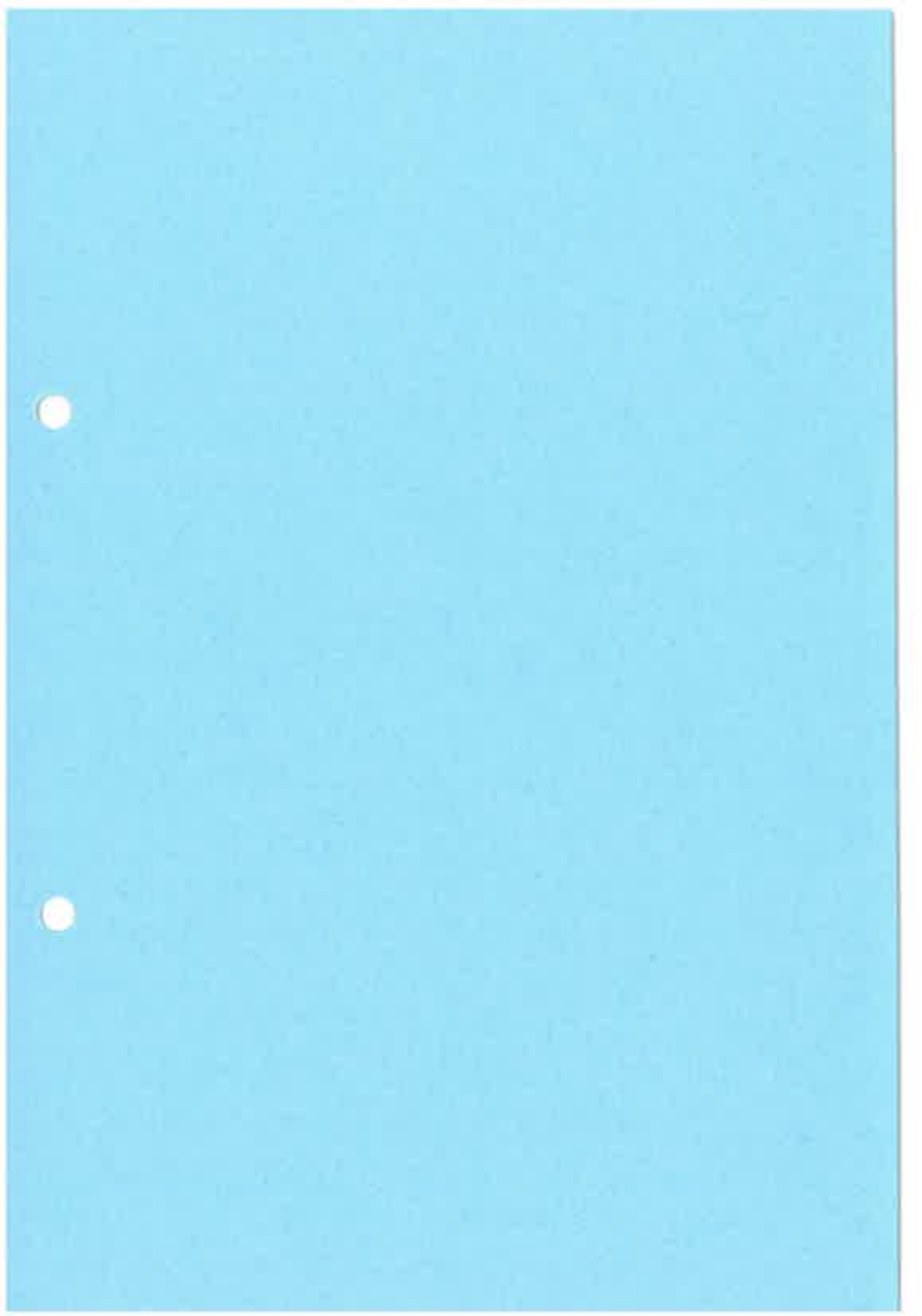
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Test No. 86-62

Zapfwellenleistung

P.T.O. Performance





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