DLG	Report on test in accordance with O.E.C.D. STANDARD CODE	O.E.C.D. No. 586



Agricultural Tractor
Fendt Favorit 610 LS Turbomatik

Manufacturer

X. Fendt und 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.

Performance of tests: May 1977 till January 1978
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: 11th April, 1978 O.E.C.D. No. 586

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 N ≙ 0,102 kp	or 1 kp ≙ 9,81 N
Powers	1 kW ≙ 1,36 PS	or 1 PS ≙ 0,736 kW
Pressures	1 bar ≙ 1,02 kp/cm²	or 1 kp/cm² ≙ 0,981 bar
	1000 mbar ≙ 750,1 mm Hg	

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PRÜFUNGS-ABTEILUNG
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Test **No. 76-118**

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. 100 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	X. FENDT UND CO
Model:	FAVORIT 610 LS TURBOMATIC
Type:	Wheeled tractor, unit construction semi-frame reinforced, all-wheel driven
Serial No:	282/21/0348

Engine

Make:	MOTORENWERKE MANNHEIM AG
Model:	D 226.6
Type:	4 stroke DIESEL engine with direct injection, watercooled
Serial No:	D 226.6.06 281
Cylinders:	6, vertical, in-line, bore 105 mm, stroke 120 mm; displacement 6240 cm^3; compression ratio 18:1;
Valves:	Overhead
Fuel system:	SOLEX fuel feed pump PE 15509; BOSCH in-line injection pump: PE 6A 80D 320/3 RS 1302; manufacturer's production setting 46 mm^3/stroke at 2400 rev/min and full load; injection timing 28° before TDC; BOSCH multihole injection nozzles; injection pressure 180 bar; KNECHT fuel filter with replaceable cartridge; capacity of fuel tank 220 l
Governor:	BOSCH centrifugal variable speed type governor: EP/RSV 325-1500 A2B 505 DR; governed range of engine speed 650 to 2410 rev/min; rated engine speed 2300 rev/min

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Air cleaner:	MANN UND HUMMEL dry paper element filter with precleaner incorporated, with replaceable maincartridge and additional safety cartridge; maintenance indicator
Exhaust silencer:	EBERSPÄCHER multichamber-reflection type silencer; 185 mm diameter, 625 mm long; on the left hand side of engine; mouth showing upwards; mouth 2645 mm above ground
Lubrication system:	Forced feed from gear type pump; strainer in sump; MANN full flow filter with by-pass and replaceable cartridge; oil capactity 12 l; oil and cartridge changing period 200 hours; recommended oil quality 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 set to 0,3 bar overpressure with by-pass thermostat; fan with 5 blades, 474 mm diameter; water capacity 19 l
Starting system:	Electrical; BOSCH screw-push starter motor, 2,9 kW; BERU flame plug in intake pipe
Electrical equipment:	12 Volt, negative earth; BOSCH 3 phase alternator 33A; 1 lead acid battery 143 Ah at 20 hours rating

Transmission

Clutch:	1. VOITH GETRIEBE KG fluid clutch 422 TDF for travel drive only 2. FICHTEL UND SACHS AG dry single disc type clutch G 310 K hydraulically pedal operated; self-adjusting; for travel drive only; disc clutch and service brake have the fluid tank in common p.t.o. clutch see page 7
Gear box:	Own make in cooperation with ZAHNRADFABRIK FRIEDRICHSHAFEN AG; T 3312; speed change gear with 6 speeds; 1st and 2nd gear collar shifted; 3rd to 6th gear synchronized; synchromesh group gear with 2 forward groups and 1 reverse group; the 6th gear of speed change gear is locked if the reverse group is shifted; creep speed group for the 1st and 2nd gear of speed change gear; optional a super creep speed group may be fitted instead of the creep speed group for the 1st to 4th gears of the speed change gear; not fitted on tractor tested; creep speeds and super creep speeds shall not be used for drawbar work; totally 16 forward and 8 reverse speeds at tractor tested
Rear axle and final drive:	Bevel gear drive with crown wheel and pinion; bevel gear type differential with lock; pedal operated, self disengaging; planetary final drives
Driven front axle:	ZAHNRADFABRIK FRIEDRICHSHAFEN AG APL-3052; driven by universal joint shaft; joint shaft situated on the left hand side of gear box

Driven front axle:	(Continuation) under load engageable and disengageable by a particular wet disc type clutch; handlever operated; bevel gear drive with crown wheel and pinion; bevel gear type self locking differential: LOC-O-MATIC; planetary final drives in front axle

Oil capacity:	Fluid clutch	10,0 l
	gear box (in common with hydraulic power lift)	38,0 l
	final drives in the rear axle each	8,0 l
	front axle differential	8,25 l
	final drives in the front axle each	1,15 l

Oil changing period:	Fluid clutch	5000 hours
	gears	1000 hours

Recommended oil qualities:	Fluid clutch	engine oil	HD SAE 10W
	final drives	hypoid oil	SAE 90 MIL-L-2105 B
	other gears	engine oil	HD SAE 20W/20 MIL-L-2104 C

Power take-off

Main p.t.o.: Independent p.t.o. (live p.t.o.);
at rear of tractor;
driven through a dry multiplate clutch independent from fluid clutch and single disc type clutch;
operated by hand lever situated below the steering wheel;
height above ground 666 mm in tractor's median plane;
29 x 34,9 x 8,7 mm = 1 3/8", 6 splines
DIN 9611 Form 1, BS.1495, ASAE S.203.7;
2 speeds are preselectable by hand lever:

540 rev/min p.t.o.
586 rev/min at rated engine speed;
standard p.t.o. speed 540 rev/min at 2118 rev/min engine speed

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Total ratios and speeds

Group		Gear	Total ratio engine : driving wheel	Nominal travelling speed *) at rated engine speed km/h	Nominal travelling speed *) at standard p.t.o. speed 540 rev/min km/h
Forward speeds					
Creep group	slow	1	638,48	1,05	0,97
		2	405,19	1,66	1,52
	fast	1	511,13	1,31	1,21
		2	324,37	2,07	1,90
Normal group	slow	1	260,07	2,58	2,38
		2	165,05	4,06	3,74
		3	105,63	6,35	5,85
		4	69,39	9,67	8,90
		5	44,66	15,02	13,83
		6	29,37	22,84	21,03
	fast	1	208,20	3,22	2,97
		2	132,12	5,08	4,68
		3	84,56	7,93	7,31
		4	55,55	12,07	11,12
		5	35,75	18,76	17,28
		6	23,51	28,53	26,28
Reverse speeds					
Creep group	slow	1	461,48	1,45	1,34
		2	292,86	2,29	2,11
Normal group	fast	1	187,97	3,57	3,29
		2	119,29	5,62	5,18
		3	76,35	8,79	8,09
		4	50,16	13,37	12,32
		5	32,28	20,78	19,14
		6	21,23	31,60	29,10

*) Calculated with the RADIUS INDEX 795 mm WdK 154
2% slippage of the fluid clutch is included

Main p.t.o. (Continuation)	1000 rev/min p.t.o. 1022 rev/min at rated engine speed; p.t.o. speed 1000 rev/min at 2249 rev/min engine speed p.t.o. speeds may be set by aid of tractormeter; direction of rotation clockwise, viewed from tractor rear
Secondary p.t.o.:	Optional, not fitted on tractor tested; independent p.t.o. at front of tractor; 723 mm above ground, in tractor's median plane; drive, dimensions and direction of rotation same as main p.t.o.; 1119 rev/min at rated engine speed; p.t.o. speed 1000 rev/min at 2055 rev/min engine speed

Power lift

Hydraulic system:	Own make in cooperation with ZAHNRADFABRIK FRIEDRICHSHAFEN AG; open system; BOSCH gear pump with 19 cm³/rev delivery; driven by transmission; ram, lift shaft and control valve in unit construction; BOSCH control valve for lifting and sinking, power control, position control, both stepless mixable, floating position; maximum oil pressure 175 bar; single acting main ram with 120 mm bore, 126 mm stroke and 2 single acting additional external rams with 50 mm bore and 246 mm stroke; up to 3 oil tappings, single or double acting at rear of tractor available; hydraulic oil tank in common with gear box; oil capacity 38 l, in special cases up to 43 l; max. 5 l may be taken off through oil tappings when tractor is travelling, 12,5 l when tractor is stationary, in special cases 10 or 17,5 l respectively; oil changing period and quality see page 7

Implement linkage:	Three point linkage category II Din 9674; optional category III; with quick-coupling device DIN 9675 lift rods adjustable from 650 to 785 mm lifting range above ground with: short lift rods from 333 to 1008 mm long lift rods from 60 to 815 mm
Holed bar:	Long bar fitted on the clevis of lower links; total length 1700 mm; length between the ball joints 830 mm; thickness of the bar 25 mm, width 100 mm; centre hole and 4 holes on either side with 80 mm distance each; with 245 mm distance right and left from this hole range further 4 holes with 80 mm distance each; totally 17 holes; all holes 33 mm diameter; height above ground adjustable by power lift from 135 to 1083 mm dependent on lift rods length, measured at the surface of the bar; in any height above ground hydraulically lockable; a mechanically acting lift lock is optional available; with lower links in horizontal position distance of holes centre line: to rear axle centre 1189 mm to p.t.o. shaft end 862 mm

Pull attachment

Swinging drawbar:	Height above ground 604 mm; diameter of clevis hole 33 mm; distance of clevis hole centre to rear axle centre 729 or 859 mm p.t.o. shaft end 402 or 532 mm adjustable by shifting swinging drawbar in longitudinal direction; about 506 mm swingable to either side pivot point 295 mm behind rear axle centre

Trailer hitch:	Own make in cooperation with ROCKINGER; height above ground 907 or 978 mm; adjustable by turning hitch; diameter of clevis hole 33 mm; distance of clevis hole centre to rear axle centre 580 mm; permissible vertical load 2000 kg to 25 km/h 1500 kg in the range from 25 to 30 km/h
Towing hitch:	780 mm above ground The tractor can be fitted optionally with a MÖBIUS hitch

Steering

Own make in cooperation with ZAHNRADFABRIK FRIEDRICHSHAFEN AG;
hydrostatic steering model 8451 with own oil circuit;
BOSCH gear pump with 16 cm³/rev delivery;
on the left hand side of engine;
directly driven by engine;
oil capacity 1,4 l;
recommended oil: engine oil HD SAE 20W/20;
oil changing period 1000 hours;
2 double acting rams,
45 mm bore, 195 mm stroke;
directly acting on the front axle;
steering hand wheel vertically adjustable to driver's size

Brakes

Parking brake:	Mechanically acting shoe type brake with 2 brake drums 250 mm diameter on the differential half shafts; operated by hand lever with ratchet
Service brake:	Own make in cooperation with KNOTT AND GIRLING; hydraulically acting shoe type brake with 2 brake drums 250 mm diameter on the differential half shafts; self-adjusting; additional partial disc brake with 274 mm disc diameter on the joint shaft; pedal operated; service brake and single disc clutch have the fluid tank in common

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

Wheels

Steered wheels:	Two pneumatics at front 12,4-28 AS 6 ply; diagonal type tyre casing; maximum permissible load per tyre 1275 kg at 1,7 bar inflation pressure and 30 km/h; track width 1680 or 1820 mm adjustable by turning wheels; rims W 10 x 28
Driving wheels:	Two pneumatics at front and at rear; specification of driving front wheels see at steered wheels; driving rear wheels: 2 pneumatics 16,9-38 AS 6 ply; radial type tyre casing; maximum permissible load per tyre 2520 kg at 1,7 bar inflation pressure and 30 km/h; track width 1700 or 1850 mm adjustable by turning wheels (optional: track adjustment wheels for track widths from 1520 to 2124 mm in steps of appr. 100 mm by turning wheels and offset lug type rims, not fitted on tractor tested) rims W 14L x 38
Wheel base:	2723 mm

Seat

GRAMMER
DS 85
upholstered seat with back and arm rests;
back rest adjustable in inclination;
arm rests may be turned up;
adjustable spring with shock absorber;
height of seat platform 1175 mm above ground;
height of seat above platform adjustable
from 395 to 455 mm in 3 steps;
for and aft adjustable about 250 mm

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Cab	Own make safety cab OECD tested approval no. CS 1155f		
Weights	Ready for use as tested with cab		
		without driver	with driver
Without ballast:	front	2220 kg	2230 kg
	rear	3020 kg	3095 kg
	total	5240 kg	5325 kg
Front ballast:	no ballast		
Rear ballast:	5 weights per wheel 65 kg each		650 kg
	water in the tyres		580 kg
With ballast:	front	2205 kg	2215 kg
	rear	4265 kg	4340 kg
	total	6470 kg	6555 kg

Number of grease points 21

Dimensions

Total length:	4800 mm	with 3 point linkage
Total width:	2145 mm	at smallest track width
	2279 mm	at largest track width
Total height:	2780 mm	to top of cab
Ground clearance:	450 mm	below front axle differential

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Lighting equipment: Electrically, 12 Volt acc. to German governmental regulations

	Dimensions of area mm	Height above ground to centre mm	Distance from outside edge of tractor to centre *) mm
Head lights	135 x 120	850	830
Side lights	55 x 55	1570	165
Rear lights	160 x 60	1585	190
Reflectors			
1st pair	125 x 25	1485	190
2nd pair	60 Ø	485	615

*) at smallest track width

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Permissible total weights and axle loads

for all available wheel equipments

Wheel equipment front	Wheel equipment rear	Permissible total weight kg	Permissible front axle load kg	Permissible rear axle load kg
11,2-28	18,4-34	7000	2230	5130
	16,9-38	7000		5040
	9,5-48 *)	6270		4040
12,4-28	18,4-34	7000	2550	4800
	16,9-38	7000		4800
	9,5-48 *)	6590		4040
14,9-24	18,4-34	7000	3000	4800
	16,9-38	7000		4800
	9,5-48 *)	7000		4040

*) No standard tyre, special production by MICHELIN

All tyres are available as diagonal type as well as radial type tyre casing

FUELS AND LUBRICANTS USED IN TESTS

Fuel:	ARAL-DIESEL-fuel DIN 51601
	specific gravity at 15°C
	during engine tests 0,826 kg/l
	during p.t.o. tests 0,824 kg/l
	during drawbar tests 0,828 kg/l
Engine oil:	MOBIL DELVAC 1200 HD SAE 20W/20 MIL-L-46152
Transmission oil:	Speed change gear, group gear, rear axle and front axle differential:
	MOBIL DELVAC 1200 HD SAE 20W/20 MIL-L-2105 B
	Final drives of front and rear axle:
	ESSO hypoid oil SAE 90 MIL-L-2104 C
Hydraulic oil:	MOBIL DELVAC 1200 HD SAE 20W/20 MIL-L-2104 C
Fluid clutch:	ARAL engine oil SAE 20

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COMPULSORY TESTS

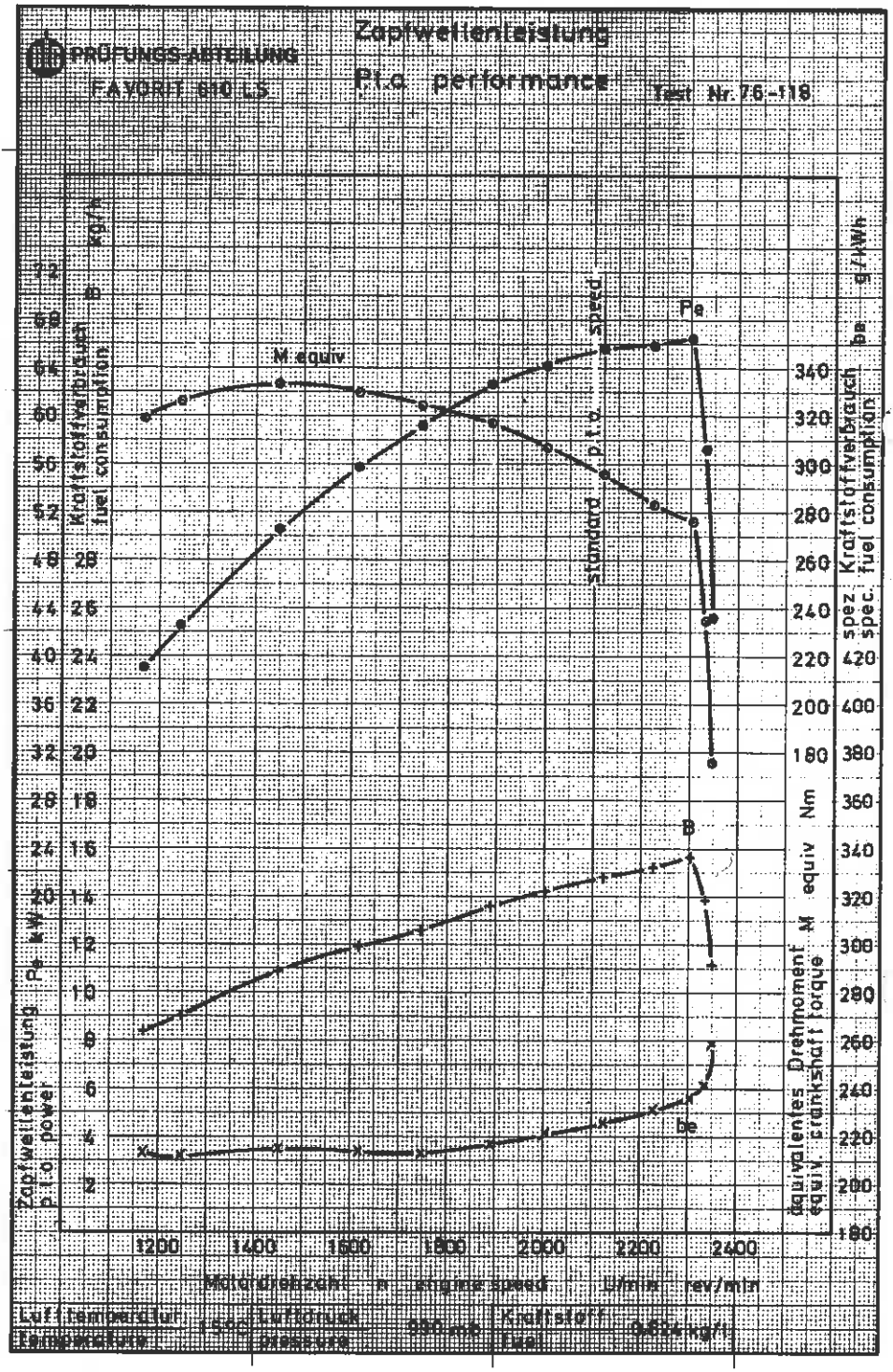
(1) MAIN POWER TAKE-OFF PERFORMANCE (540 rev/min)

Date of tests: 23rd November 1977
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
At 2-hour test						
66.4	2300	586	19.02	15.66	236	3.49
At standard p.t.o. speed (540 rev/min)						
65.6	2118	540	17.95	14.78	225	3.65
At the speed recommended for drawbar work						
66.4	2300	586	19.02	15.66	236	3.49
Part loads						
(i) 85% of the torque at maximum power at 2-hour test						
57.2	2329	594	16.79	13.82	242	3.41
(ii) unloaded						
-	2441	622	5.15	4.24	-	-
(iii) 50% of the load defined in (i)						
29.0	2362	602	10.60	8.73	301	2.74
(iv) maximum power						
66.4	2300	586	19.02	15.66	236	3.49
(v) 25% of the load defined in (i)						
14.7	2398	611	7.87	6.48	441	1.87
(vi) 75% of the load defined in (i)						
43.1	2344	597	13.56	11.17	259	3.18

No load maximum engine speed: 2441 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 276 Nm
Maximum equivalent crankshaft torque: 333 Nm at 1450 rev/min of the engine

Mean atmospheric conditions:	temperature	15 °C
	pressure	990 mbar
	relative humidity	70 %
Maximum temperatures:	coolant	81 °C
	engine oil	93 °C
	fuel	19 °C
	engine air intake	17 °C

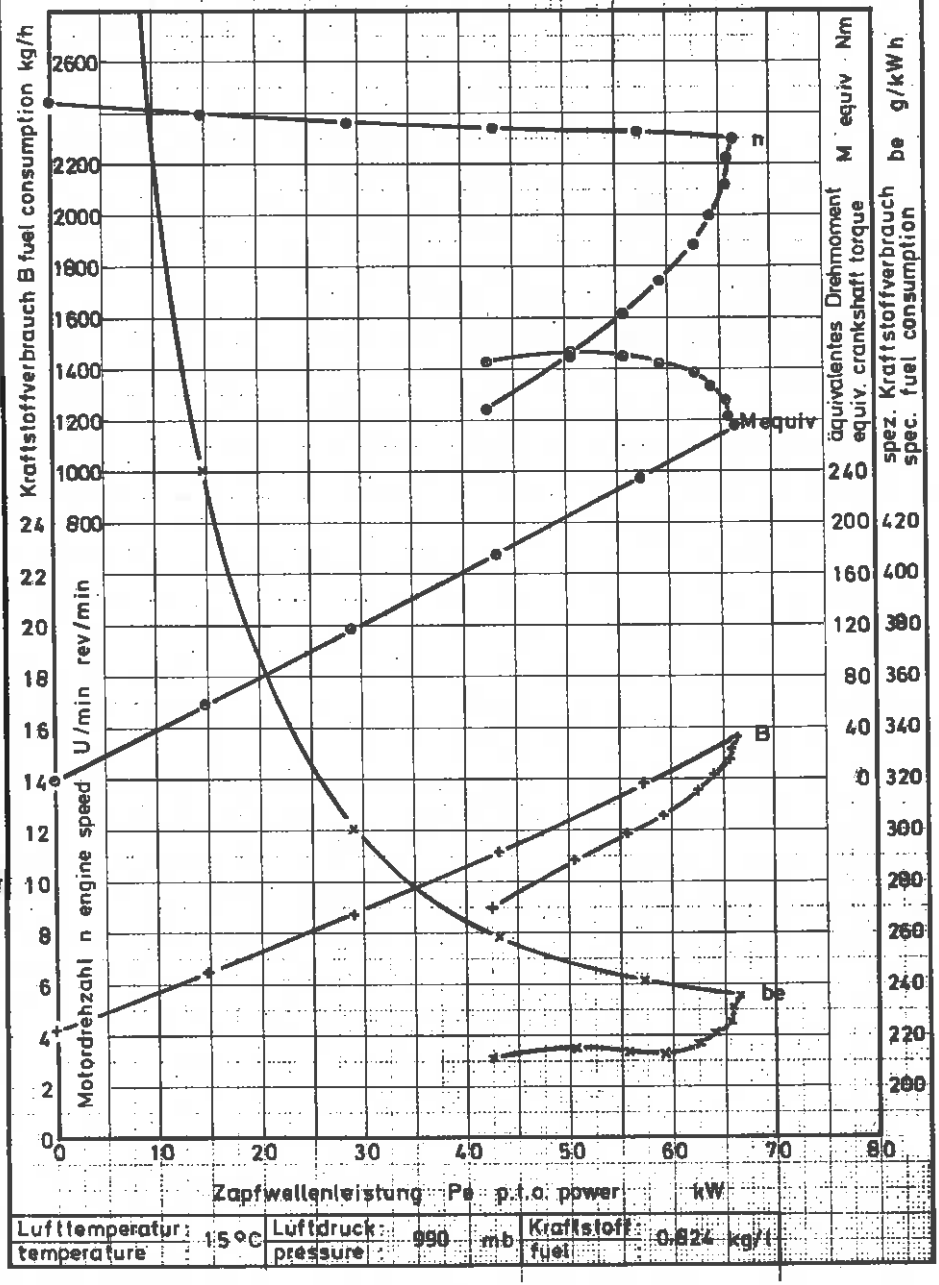

PRÜFUNGS-ABTEILUNG
FAVORIT 610 LS
Zapfwellenleistung
P.t.o. performance
Test Nr. 76-118
Zapfwellenleistung P.t.o. power kW
Kraftstoffverbrauch fuel consumption kg/h
Äquivalentes Drehmoment M equiv Nm
equiv. crankshaft torque
spez. Kraftstoffverbrauch spec. fuel consumption g/kWh
M equiv
Pe
B
be
standard p.t.o. speed
Motordrehzahl n engine speed U/min rev/min
1200
1400
1600
1800
2000
2200
2400

PRÜFUNGS-ABTEILUNG

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Zapfwellenleistung
P.t.o. performance

Test Nr. 76-118



Lufttemperatur; temperature	15 °C	Luftdruck; pressure	990 mb	Kraftstoff; fuel	0.824 kg/l

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(2) DRAWBAR PERFORMANCE

Date of tests: 19th December 1977 till 3rd January 1978
Type of track: Concrete

Gear No. and Group	Speed km/h	Power kW	Drawbar pull N	Engine speed rev/min	Slip of wheels %	Specific energy kWh/l
(i) MAXIMUM POWER with ballast height of drawbar above ground 500 mm						
1 slow	2,30	41,0	64130	2337	14,7	2,64
1 fast	2,83	50,5	64240	2319	14,8	2,73
2 slow	3,84	57,3	53680	2301	7,5	3,01
2 fast	4,90	58,4	42880	2300	5,3	3,09
3 slow	6,23	58,5	33820	2300	3,8	3,09
3 fast	7,87	58,2	26610	2300	2,8	3,08
4 slow	9,65	57,9	21610	2300	2,1	3,06
(ii) FIVE-HOUR-TEST at 75% of pull at maximum power in 3rd gear of slow group						
3 slow	6,47	45,6	25370	2349	2,6	2,92
(iii) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (i)						
1 fast	-	-	64240	-	-	-
(v) MAXIMUM POWER without ballast height of drawbar above ground 500 mm						
1 slow	2,30	35,7	55810	2349	15,0	2,50
1 fast	2,86	44,2	55610	2333	15,0	2,68
2 slow	3,68	55,1	53920	2300	11,0	2,90
2 fast	4,85	57,9	42990	2300	6,6	3,05
3 slow	6,20	58,4	33900	2300	4,6	3,05
3 fast	7,83	58,4	26850	2300	3,4	3,06
4 slow	9,62	58,3	21820	2300	2,4	3,06
4 fast	12,08	57,3	17080	2300	1,7	3,00

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

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Tyres make and size front: FULDA PIONIER 12,4-28 AS 6 PR
rear: PIRELLI CINTURATO 16,9-38 AS 6 PR

Tread bar height at the beginning of drawbar tests 80,5% of the value when new

Specific fuel consumpt. g/kWh	Temperatures Fuel °C	Coolant °C	Engine-oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 1,7 bar rolling radius of tyres under static load 798 mm						
314	8	85	68	2	98	1007
303	10	85	70	3	96	1006
274	10	85	78	3	98	1008
268	9	85	78	3	98	1008
267	11	85	79	5	95	1008
267	11	85	75	4	86	1008
271	8	85	82	-2	100	1006
284	8	85	85	0	99	1008
-	9	85	87	0	96	1008
tyre inflation pressure 1,4 bar rolling radius of tyres under static load 796 mm						
331	10	85	68	5	95	1000
308	10	85	78	7	94	1000
285	12	85	77	7	83	1000
271	13	85	78	8	91	1000
270	15	85	81	8	84	1000
268	15	85	81	7	92	1002
270	13	85	78	7	91	1002
274	13	85	80	8	90	1002

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

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(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 12,4-28 AS Front 6 ply
rear: 16,9-38 AS 6 ply

Track of wheels front: 1680 mm
rear: 1700 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	5,60	5,66	6,64	6,63
Radius of turning circle	5,33	5,39	6,36	6,35

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	980 mm
Distance forward from rear axle centre	1129 mm
Distance right from tractor's median plane	2 mm

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(5) BRAKING PERFORMANCE

A) SERVICE BRAKE

Date of tests: 22th and 23rd December 1977
Type of track: Concrete
Type of decelerometer: MOTO METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor: 6550 kg with driver

Cold brakes

		With ballast	Without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s^2	6,4	6,4
Stopping distance	m	4,4	4,4
Force on pedal	N	410	490
Force on pedal to achieve a deceleration of 2,5 m/s^2	N	150	130

Brake fade characteristics (hot tests)

Deceleration	hot/cold	%	94	100
Stopping distance	cold/hot	%	105	100
Force on pedal	cold/hot	%	128	110

B) PARKING BRAKE

Tractor facing up 16% slope:
Pull on hand brake 210 N, tractor does not roll

Tractor facing down 16% slope:
Pull on hand brake 210 N, tractor does not roll

(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 5th January 1978
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2203

Results of test

Gear: 6th fast
Travelling speed before acceleration: 22,8 km/h
Sound level: 88 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 5th January 1978
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2607
Type of frequency analyzer: BRÜEL AND KJAER model 1614
(fitted with octave filter)

A safety cab was fitted on tractor
O.E.C.D. tested, approval no. CS 1155f

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level	Travelling speed nominal	Travelling speed effective	Sound level
	N	km/h	km/h	dB(A)
1 slow	55070	2,58	2,31	85,5
1 fast	54280	3,22	2,90	86,5
2 slow	52820	4,06	3,72	86,5
2 fast	41930	5,08	4,94	86,5
3 slow	33800	6,35	6,25	86,5
3 fast *)	26150	7,93	7,92	86,5
4 slow	20040	9,67	9,74	87,5
4 fast	15990	12,07	12,17	86,5
5 slow	12210	15,02	15,17	87
5 fast	9650	18,76	18,99	87,5
6 fast	light load	28,53	30,42	83

*) The 3rd fast gear corresponds to the travelling speed nearest to 7,5 km/h

PRÜFUNGS-ABTEILUNG
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(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

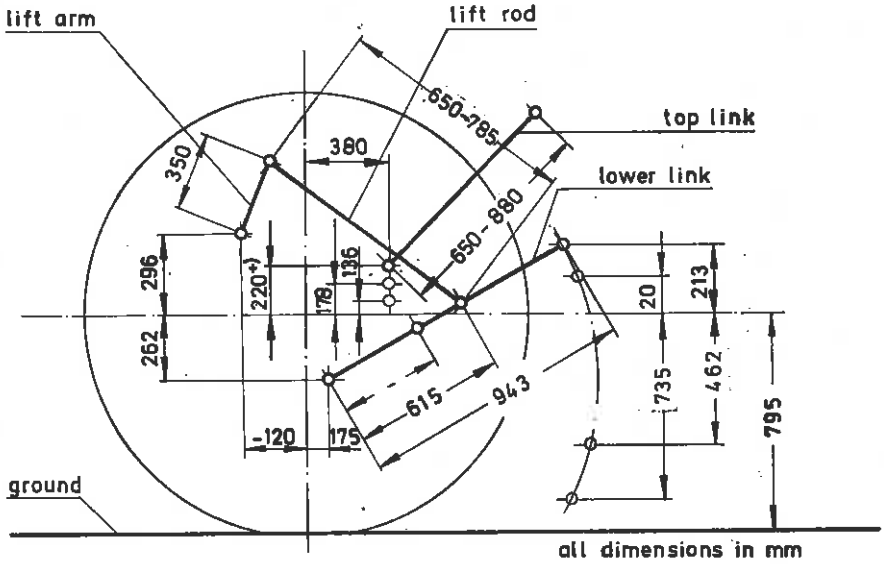
Date of tests: 20th May and 7th June 1977

HYDRAULIC PUMP

(1) Opening pressure of relief valve in remote circuit	153 bar
Sustained pressure by open relief valve	174 bar
(2) Pump delivery rate at minimum pressure and maximum engine speed	44,3 l/min
(3) Pump delivery rate	40,3 l/min
Delivery pressure	159 bar
Hydraulic power	10,7 kW

POWER LIFT

Dimensions of linkage geometry for the table on page 28



+) category III only

PRÜFUNGS-ABTEILUNG
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LIFTING FORCES

Lifting heights relative to horizontal lower links

mm	-473	-455	-400	-300	-232	-200	-100	0
at hitch points maximum mechanical advantage								
N						35400	36650	37400
minimum mechanical advantage								
N	31750		32350	33500		34150	34700	34930

Max. force exerted throughout the whole range 35400 N

Front of tractor does not lift

at test frame maximum mechanical advantage								
N		38400	37300	35800		34180	33050	32050
minimum mechanical advantage								
N					33400	33500	33600	32900

Max. force exerted throughout the whole range 28950 N

Force at which front of tractor lifts with maximum allowable front ballast 32890 N

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+100	+200	+277	+287	+300	+400	+475	+500	+572

lift rods 650 mm long

37900	37900			37750	37580	37550		

lift rods 785 mm long

34850	34850		34850					

lift rods 785 mm long

30950	29900	28950						

lift rods 655 mm long

31950	30730			29350	27950		26600	26000

All values of forces for pressure at max. hydraulic power 159 bar, see page 25; calculated from measurements at max. oil pressure 174 bar

LINKAGE GEOMETRY when connected to the standard frame	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view:		
Lower links	943 mm	943 mm
Lift arms	350 mm	350 mm
Lift rods	785 mm	650 mm
Top link	733 mm	735 mm
Distance of lift rod connection point from pivot point of lower link	615 mm	615 mm
The following dimensions are given relative to rear axle centre line 795 mm above ground		
Lower link pivot point	175 mm behind, 262 mm below	175 mm behind, 262 mm below
Top link pivot point	380 mm behind, 178 mm above	380 mm behind, 136 mm above
Lift arm pivot point	120 mm behind, 296 mm above	120 mm behind, 296 mm above
Maximum and minimum height of lower link hitch points	20 mm above, 735 mm below	213 mm above, 462 mm below
Height of lower link hitch points above ground when locked in highest transport position	815 mm	1008 mm

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OPTIONAL TESTS

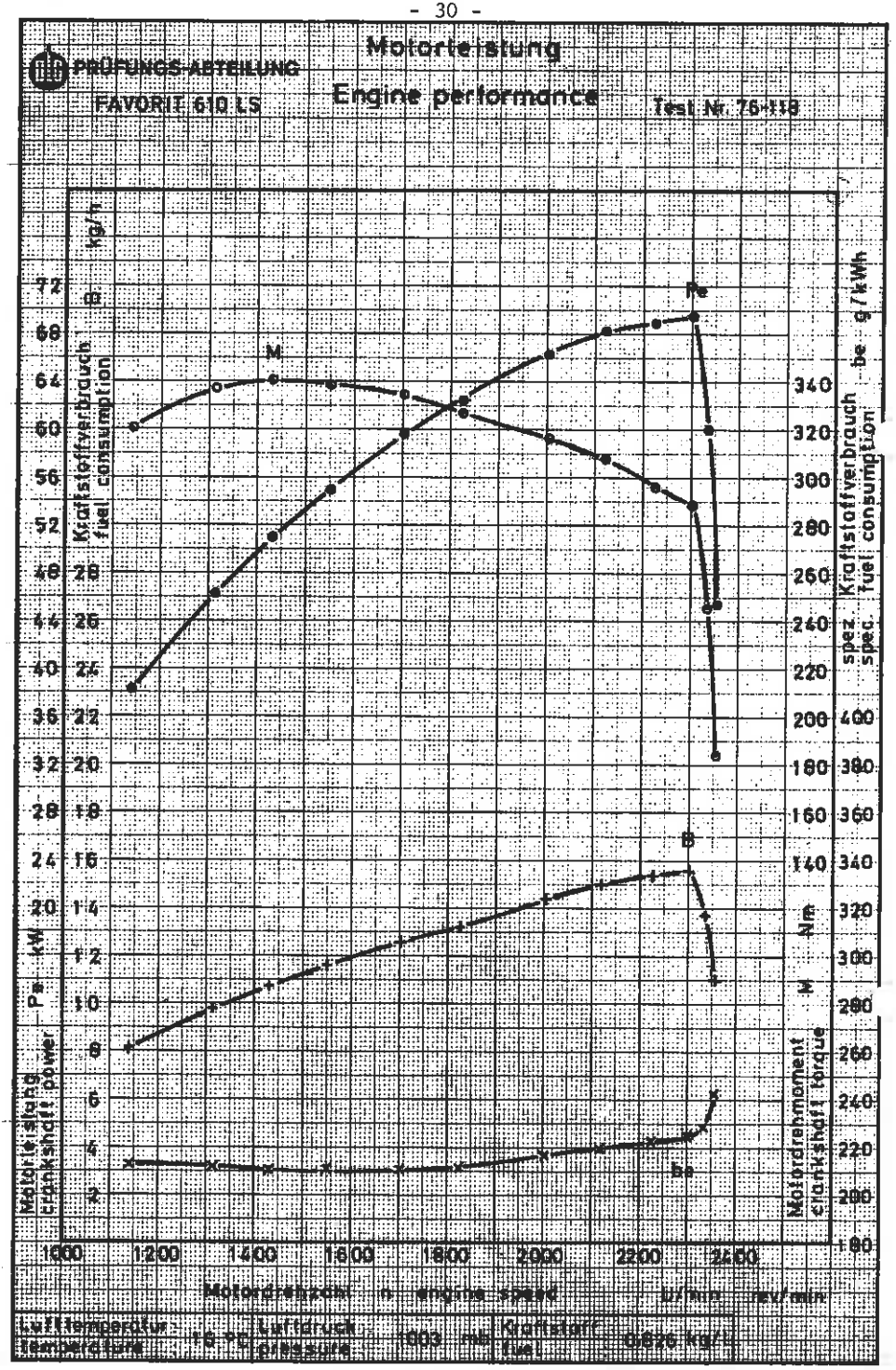
(1) ENGINE PERFORMANCE

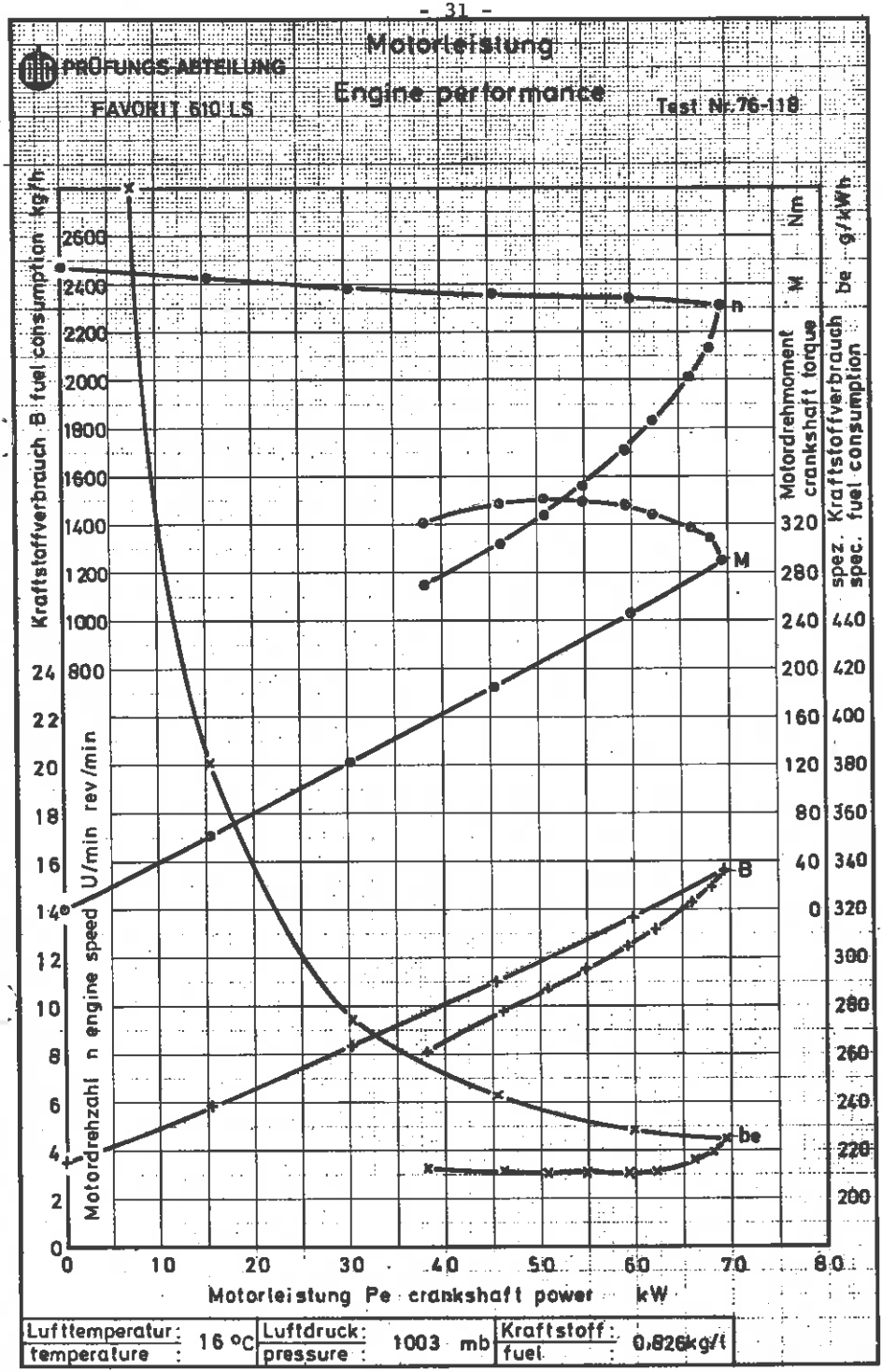
Date of tests: 8th November 1977
Type of dynamometer: SCHENCK eddy-current dynamometer W 400

Power kW	Engine speed rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power					
At 2-hour test					
69.5	2300	18.92	15.63	225	3.67
At standard p.t.o. speed (540 rev/min)					
68.3	2120	18.14	14.99	220	3.76
At the speed recommended for drawbar work					
69.5	2300	18.92	15.63	225	3.67
Part loads					
(i) 85% of the torque at maximum power at 2-hour test					
60.0	2333	16.61	13.72	229	3.61
(ii) unloaded					
-	2459	4.23	3.49	-	-
(iii) 50% of the load defined in (i)					
30.3	2370	10.08	8.33	275	3.01
(iv) maximum power					
69.5	2300	18.92	15.63	225	3.67
(v) 25% of the load defined in (i)					
15.4	2413	7.11	5.88	381	2.17
(vi) 75% of the load defined in (i)					
45.4	2353	13.37	11.04	243	3.40

Optimum fuel consumption: 208 g/kWh at 48.0 kW and 1500 rev/min
No load maximum engine speed: 2459 rev/min
Torque at maximum power (2 hours): 288 Nm
Maximum torque: 340 Nm at 1429 rev/min of the engine

Mean atmospheric conditions:	temperature	16 °C
	pressure	1003 mbar
	relative humidity	82 %
Maximum temperatures:	coolant	80 °C
	engine oil	94 °C
	fuel	22 °C
	engine air intake	21 °C


Motorleistung
PRÜFUNGS-ABTEILUNG
FAVORIT 610 LS
Engine performance
Test Nr. 76-118
Kraftstoffverbrauch fuel consumption kg/h
spez. Kraftstoffverbrauch spec. fuel consumption be g/kWh
Motorleistung Crankshaft power Pe kW
Motordrehmoment Crankshaft torque M Nm
M
Pe
be
B
Motordrehzahl n engine speed U/min rev/min
Lufttemperatur temperature °C
Luftdruck pressure mb
Kraftstoff fuel Oktz kg/l


Motorleistung
Engine performance
PRÜFUNGS ABTEILUNG
FAVORIT 610 LS
Test Nr. 76-118
Kraftstoffverbrauch B fuel consumption kg/h
Motordrehzahl n engine speed U/min rev/min
Motordrehmoment crankshaft torque M Nm
spez. Kraftstoffverbrauch spec. fuel consumption be g/kWh
n
M
B
be
Motorleistung Pe crankshaft power kW
Lufttemperatur: temperature : 16 °C
Luftdruck: pressure : 1003 mb
Kraftstoff: fuel : 0,826kg/l

PRÜFUNGS-ABTEILUNG

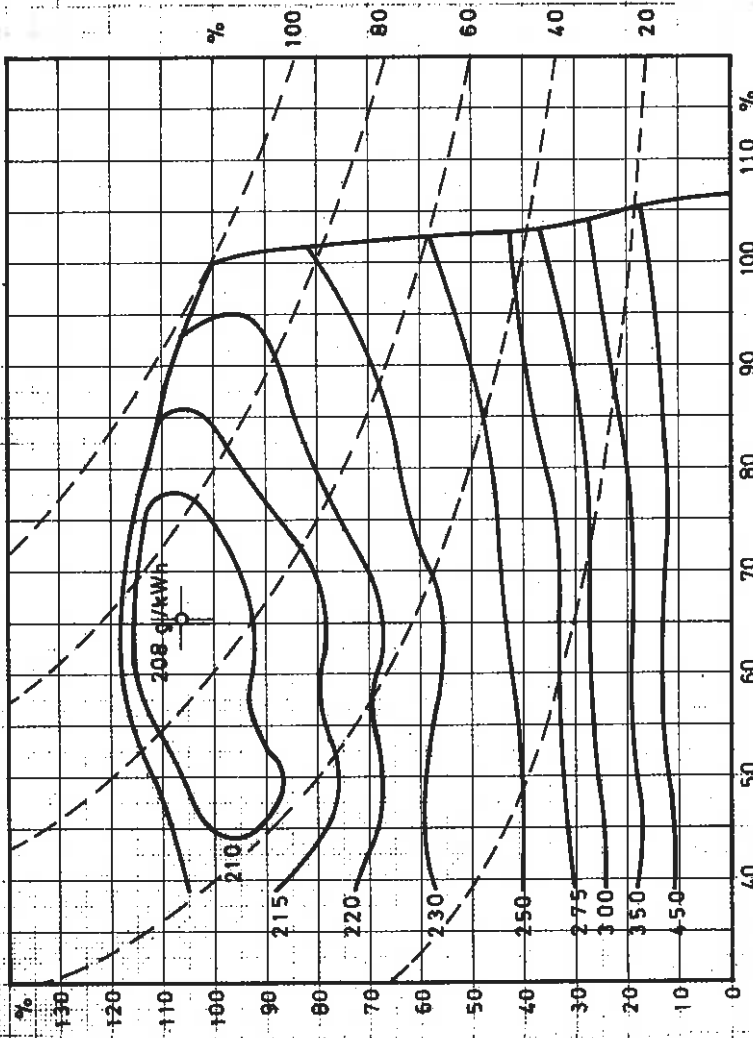
FAVORIT 610 LS

Motorleistung
Engine performance

Test Nr. 76-118

Motorleistung in % der Leistung bei Nenndrehzahl

engine power in % of power at rated engine speed



Belastung in % des Drehmomentes bei Nenndrehzahl

load in % of torque at rated engine speed

Lufttemperatur: temperature	16 °C	Luftdruck: pressure	1003 mb	Kraftstoff: fuel	0,826 kg/l

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