O.E.C.D. Report No.: 625

BUNDESVERSUCHS - UND PRÜFUNGSANSTALT
für landwirtschaftliche Maschinen und Geräte,
Wieselburg

Diesel-Tractor STEYR 377.25

Trade name:

Diesel-Tractor STEYR 8120a



Date of approval: 1979 02 20

Date of tests: 1978

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. Test Code

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Tractor manufacturer:	STEYR-DAIMLER-PUCH AG., Steyr, Austria STEYR-HELLAS ABE., Sindos, Greece
Submitted for test by:	Manufacturer
Selected by:	Manufacturer by agreement with BVPA-Wieselburg
Place of running in:	Steyr, Austria
Duration of running in:	42 hours

SPECIFICATION OF TRACTOR

Tractor:

Make:	STEYR-DAIMLER-PUCH AG.
Model:	Diesel-Tractor STEYR 377.25 Trade name: STEYR 8120a
Type:	Wheel tractor, four wheel driven, unit construction
Serial No.:	377.25 - 999

Engine:

Make:	Own make
Model:	WD 611.85
Type:	4 stroke diesel engine with direct injection and turbo-super charger
Serial No.:	611.85 - 997
Cylinders:	6, vertical in line Bore/stroke: 100/110 mm Capacity: 5184 cm^3 Compression ratio: 16,2 Wet liners
Valves:	Overhead valves
Fuel system:	Capacity of fuel tank: appr. 122 l Fuel feed by gravity BOSCH fuel filter Dual filter with water trap and changeable elements, model 0450 134 002 Fuel precleaner 1 Z 1457 434 002 BOSCH distributor injection pump Prototype model VA 6/10 H 1150 CRV 3656 (=serial model VA 6/10 H 1150 CR 160-5) Manufacturers production setting: 51 mm^3/stroke at 2300 rev/min and full load Injection timing: 14° before TDC at 1 mm pump stroke

Fuel system: (cont.)
BOSCH injectors
Multi hole injection nozzles DLLA 150 SV 11 966
Injection pressure: 21,6 MPa (216 bar)

Governor:
BOSCH variable speed governor
Hydraulically acting, incorporated in injection pump
Range of speed: 500 to 2580 rev/min
Rated speed: 2300 rev/min

Super charger:
KÜHNLE, KOPP UND KAUSCH
Exhaust type turbo-super charger, K 26-2470 V 12.22
supercharge pressure appr. 600 mbar
without air intercooler

Air cleaner:
MANN & HUMMEL or PUROLATOR
Main-cleaner: Dry type with changeable element and electrical indicator
Model: MANN & HUMMEL 45.225.65.424; optional: additional safety element CF 800
PUROLATOR LP 080/1; optional: additional safety element SE 080
Pre-cleaner: Cyclonic type, dust container
Model: MANN & HUMMEL 48.068.67.900

Exhaust silencer:
EBERSPÄCHER
Absorption type, at left side of the engine, mouth upwards
Modell: T 16.47.576.02.0.00

Lubrication:
Forced lubrication with EATON pump, strainer in sump, paper filter in full flow
Oil capacity: appr. 10 l
Changing interval: 200 hours; paper filter: 400 hours
Recommended oil viscosity: SAE 20 W/30 HD,
SAE 10 W/30 HD in cold environment
(MIL-L-2104 B, MIL-L-46 152)

Cooling system:
Double circuit water cooling with centrifugal pump, pump and 6 blade fan (dia: 460 mm) belt driven
Tubular radiator, longtime filling with frostprotection down to -20°C
Thermostat control, cooling water thermometer and sight glass for level indication
Coolant capacity: appr. 18 l (20 l with cab heating)
Overpressure: max. 50 kPa (0,5 bar)

Starting system:
Electrically
BOSCH screw push starter, model: 001 367 005 JF
12 V, 3 kW
Cold starting aid: BERU or BOSCH
2 glow plugs in intake pipe, BERU model 184 G
BOSCH model A 250 00. 1088

Electrical system:
Voltage: 12 V, negative earth
Generator: BOSCH, three phase type
model G 1 - 14 V 28 A 22 - 392 W, 0120 339 526
14 V, 28 A, 392 W
Batteries: 1 with 165 Ah capacity at 20 hours rating

Transmission:

Clutches:
Main clutch: FICHTEL & SACHS
Single plate dry clutch, model G 350 KR, 350 mm dia
pedal operated
P.t.o.-clutch: KLÖCKNER HUMBOLDT DEUTZ
Wet multiplate clutch, 132 mm dia, overload function,
hydraulically engaged, hand switch operated
Front wheel drive clutch: KLÖCKNER HUMBOLDT DEUTZ
Wet multiplate clutch, 135 mm dia,
hydraulically engaged, hand switch operated

Gearbox:
KLÖCKNER HUMBOLDT DEUTZ
Group gear with 3 forward and 1 reverse group combined
with synchronised 4 speed change gear (25 km/h model)
or optional with synchronised 5 speed change gear
(30 km/h model, as tested)
Model: TW 90. 30
Totally: 12 (15) forward and 4 (5) reverse speeds

Optional (not on tested tractor):
Super crawler group: 4th forward group of group gear
Torque amplifier group: only on 4 speed change gear
model with optional speed ratios 1, 222 or 0, 807 (0, 807 at
torque-amplifier-30 km/h-model)
hydraulically engaged by wet multiplate clutch

Totally (with all options): 32 forward and 8 reverse speeds

Rear axle and final drive:
KLÖCKNER HUMBOLDT DEUTZ
Central axle with spur gear transmission from differential;
Pinion and bevel gear, bevel gear differential, spur gears,
lockable wheelshafts acting on rear wheels
Differential lock: foot lever operated, lockable

Front axle and final drive: ZF-PASSAU
Central steering axle
Driving shaft, pinion and bevel gear, bevel gear differential, half shafts, universal joints, planetary gears in wheel hubs.
Front wheel drive: hydraulically engaged, hand switch operated
Optional: Automatically locking differential

Total ratios and speeds

Group	Gear No.	Number of engine revolutions for one revolution of driving wheel	Nominal travelling speed for rated speed of engine *) km/h
forward super crawler K	1 **)	1758,73	0,38
	2 **)	1151,92	0,58
	3 **)	939,53	0,71
	4 **)	647,95	1,03
	5 **)	527,96	1,26
forward slow L	1	329,29	2,03
	2	215,68	3,10
	3	175,91	3,80
	4	121,32	5,50
	5 ***)	98,85	6,75
forward medium Z	1	162,51	4,11
	2	106,44	6,27
	3	86,81	7,69
	4	59,87	11,15
	5 ***)	48,78	13,69
forward fast S	1	77,48	8,62
	2	50,75	13,16
	3	41,39	16,13
	4	28,55	23,40
	5 ***)	23,26	28,70
reverse R	1	132,41	5,04
	2	86,72	7,70
	3	70,73	9,44
	4	48,78	13,69
	5 ***)	39,75	16,80

*) calculated with basis tyre equipment, 18,4-34 AS; index radius: 770 mm
**) optional, not on tested tractor
***) optional, on tested tractor

Switching aid circuit:
Aid for p.t.o., front wheel drive and optional equipment (i.e. torque amplifier) switching
Own oil circuit with BOSCH gear pump, directly driven by engine, incorporated in gearbox, oil supply from gearbox
Delivery rate: 23 l/min
Working pressure: 2 MPa (20 bar)

Oil capacity:
Gearbox and rear axle: appr. 50 l multipurpose oil
Front axle differential: 5,7 l
Planetary final gears: 0,8 l each
Changing interval: 1000 hours or one year
Recommended oil for gearbox: MIL-L-2104B/MIL-L-46 152 (API-CC) or MIL-L-2104C (API-CD) (SAE 20 W/20, SAE 15 W/30, SAE 20 W/40, STOU)
For differential and planetary gears: MIL-L-2105 B (SAE 90 HD)

Power take off:

Rear p.t.o.:
2 shafts at rear of tractor, 50 mm right and left hand of median plane, 621/606 mm above ground
Dimension: ISO R 500, Type 1; (35 mm, 6 splines)
ISO R 500, Type 2; (35 mm, 21 splines)
Live p.t.o., common driven by hydraulically engaged multi plate clutch, hand switch operated
Speeds: 540/ 604 rev/min at 2057/2300 rev/min engine speed
1000/1110 rev/min at 2071/2300 rev/min engine speed
Engine speed resp. p.t.o. speed indication by "Traktormeter"
Direction of rotation: clockwise viewed from driving end

Front p.t.o.: Optional (not on tested tractor)

Power lift:
Own make, open center type
Draught control with two stage pull adjustment and upper link sensing, position control, floating position
"STEYR SIMPLEMATIK" standard linkage, category II, double hole lift arms
BOSCH gear type pump, directly driven by engine
BOSCH control unit
Own oil supply, capacity: 16 l
Recommended oil: SAE 20 W
Working cylinder: single acting type, bore/stroke: 105/160 mm

Optional (not on tested tractor):
WALTERSCHEID linkage quick coupler, category II
Additional working cylinders for increased power lift performance (50 mm dia each)
Oil tappings: up to three oil circuits with BOSCH control units for single or double acting cylinders
Capacity of tappings: 6 l

Holed drawbar: Fitted in the clevis of the lower links of the threepoint linkage, category II
Number of holes: 7, diameter: 32 mm, distance: 115 mm

Height above ground		Min. lift rod length (basis adjustment)	Max. lift rod length
Lift arm length:	193 mm	from 425 to 980 mm	from 210 to 820 mm
	245 mm	from 295 to 1000 mm	from 80 to 840 mm

Method of changing: by power lift, lift rod and lift arm length
Distance to rear axle: 1045 mm (lower links horizontally)
Distance relative to p.t.o.: 520 mm

Pull attachement:

Trailer hitch:

Own make
Fork type, heights adjustable in 4 positions
Height above ground: 888, 858, 818, 798 mm
Distance from rear axle: 668 mm
Position relative to p.t.o.: rearwards 142 mm
Diameter of coupling pin: 31 mm
Maximum vertical load: 15 kN

Optional (not on tested tractor)
ROCKINGER automatic coupler
Fork type, heights adjustable in 4 positions
Heights above ground: 888, 858, 818, 798 mm
Distance from rear axle: 689 mm
Position relative to p.t.o.: rearwards 163 mm
Diameter of coupling pin: spherical 38 mm
Maximum vertical load: 15 kN

ROCKINGER
Fork type, heights adjustable in 8 positions
Height above ground: 935, 875, 835, 795, 755, 695, 655, 615 mm
Distance from rear axle: 669 mm
Position relative to p.t.o.: rearwards 143 mm
Diameter of coupling pin: 31 mm
Maximum vertical load: 15 kN

ROCKINGER automatic coupler
Fork type, heights adjustable in 8 positions
Heights above ground: same heights as above
Distance from rear axle: 696 mm
Position relative to p.t.o.: rearwards 170 mm
Diameter of coupling pin: spherical 38 mm
Maximum vertical load: 15 kN

Towing hitch:

Fork type
Height above ground: 820 mm
Distance from front axle: frontwards 466 mm
Diameter of coupling pin: 32 mm

Steering:

ZF-SCHWÄBISCH GMÜND
Hydrostatic steering, model ZF 8453
Own oil circuit, gear pump directly driven by engine
Capacity of oil case: 2,8 l
Delivery rate: 22 l/min
Working pressure: 10 MPa (100 bar)
Operated by steering wheel, acting on front wheels

Brakes:

Service brake: TEVES, hydraulically acting dry disc brake, acting on differential shafts, pedal operated

Parking brake: KNOTT, mechanically acting drum brake, acting on differential shafts, hand lever with ratchet

Steering assistance brake: Operated by divided pedal of service brake

Optional brake equipment: (not on tested tractor)
Front wheel brake:
TEVES, hydraulically acting dry disc brake on front wheels, pressure air controlled by main braking valve
Trailer braking valve: high pressure air system, one or two line system, air compressor V-belt driven
Storage pressure: 1,8 MPa (18 bar)
Working pressure: 0,72 MPa (7,2 bar)

Wheels:

Front wheels: 2 pneumatics, steering and driving function, diagonal or radial carcass
13,6-24 AS, PR 8; rim: W 11 x 24
Maximum permissible load on each tyre:
15 160 N at 2,0 bar inflation pressure
21 220 N at 2,5 bar inflation pressure and max. 8 km/h driving speed for front implement working
Track width: 1680 mm (changeable to 1778 mm by reversing wheels)

Optional front wheel equipment:
11,2-28 AS

Rear wheels: 2 pneumatics, driving function, diagonal or radial carcass
18,4-34 AS; PR 8; rim: DW 16 x 34
Maximum permissible load on each tyre:
25 160 N at 1,4 bar inflation pressure
Track width: 1654 mm (1910 mm by reversing wheels)

Optional rear wheel equipment:
16,9-38 AS, PR 8

Wheel base: 2540 mm

Lighting:

Unrestricted beam angle of head light in plan view: 92 mrad (5, 27°)

	*) Height above ground of centre mm	Dimension mm	**) Distance from outside edge of tractor to centre mm
Head lights	1085	140 x 125	925
Side Lights	1719	164 x 70	239
Rear lights	1719	164 x 70	239
Reflectors	1533 709	102 x 54 80 dia	198 555

*) with tyre equipment: 13,6 R 24 and 18,4-34 AS
**) with overall width of 2140 mm

Number of grease points: 20

Driver seat:

BOSTROM
Model XH 2 TS 2; tested on tractor according to national regulation (Prot. Nr. 132/78)
X-lever suspension with torsion springs, adjustable to drivers weight
Hydraulically damping
Horizontal adjustment range: 140 mm
Vertical adjustment range: 70 mm

GRAMMER
Model DS 85 H/3; tested on tractor according to national regulation (Prot. Nr. 136/78)
X-lever suspension with 2 tension coil springs (force transmission by curve-disc and ball-bearing)
Hydraulically damping
Horizontal adjustment range: 140 mm
Vertical adjustment range: 60 mm

Protective frame:

Own make
Model 110.01
Sheet construction with roof, windscreen, front cladding and rubber floor, rubber mounted unit with mudguards integrated
Strength tested according to national legislation (identical to OECD-Code)

Protective cab:

(as on tested tractor)
Own make
Model 110.11
Completely cladded and closed protective frame with air ventilation and heater
Strength tested according to national legislation (identical to OECD-Code)

CONDITIONS DURING TEST

Tractormass:

Tractor without driver but with tanks full and protective cab

	Front	Rear	Total
Without ballast	1500 kg	2731 kg	4231 kg
With ballast	2306 kg	3634 kg	5940 kg

Ballastmass:

	Number of weights	Total mass (excluding water)	Water
Front	18	637 kg	-
Rear	8 + 2	472 kg	600 kg
Additional	-	-	-

Track setting and tyre equipment:

1680 mm at front
1654 mm at rear
Front wheels: 13,6 R 24, PR 8
Rear wheels: 18,4-34 AS, PR 8

Overall dimensions:

	Length	Width		Height **)
		max.	min.*)	
	mm	mm	mm	mm
With ballast	4750	2654	2140	2595/2622
Without ballast	4225	2654	2140	2595/2622

*) measured on front wheels
**) measured to top of: protective cab / exhaust pipe with basis tyre equipment

Minimum ground clearance: 410 mm under front axle with basis tyre equipment

Fuel and lubricants used in tests:

Fuel:	ELAN Diesel fuel (according to DIN 51 601) specific gravity at 15°C: 0,855 kg/l Viscosity at 20°C: 5 mm^2/s (5 cSt) Cetane no.: 50
Engine oil:	MOBIL OIL SPECIAL SAE 10 W-30 HD, MIL-L-2104 A Viscosity at 100°C: 10,6 mm^2/s (10,6 cSt)
Transmission oil:	SHELL SPIRAX 90 HD, MIL-L-2105 B Viscosity at 50°C: 112 mm^2/s (112 cSt)
Hydraulic oil:	SHELL Tellus 33, SAE 20 W Viscosity at 50°C: 40 mm^2/s (40 cSt)

COMPULSORY TESTS

1. Main power take-off performance

Date and location of tests: 1978 07 06, Wieselburg, Austria
Type of dynamometer: SCHENK-eddy current brake - W 780

Main test on: ISO R 500, Type 1 - 540 rev/min - p.t.o.

Power	Speed		Fuel consumption		
	engine	p.t.o.	total	specific	specific
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
MAXIMUM POWER					
Maximum power - 2 hours test					
69,46	2300	604	18,06 21,12	260	3,289
Standard p.t.o. speed					
67,77	2056	540	16,77 19,61	247,5	3,456
68,80 *)	2072 *)	1000 *)	16,86 19,72*)	245 *)	3,489 *)
The speed recommended by the manufacturer for drawbar work					
69,46	2300	604	18,06 21,12	260	2,289
PART LOADS Governor hand lever in position giving maximum power					
(i) 85 % of torque at maximum power					
60,93	2372	623	16,69 19,52	274	3,121
(ii) unloaded					
0	2570	675	5,69 6,65	-	-
(iii) 50 % of the load defined in (i)					
31,74	2471	649	10,85 12,69	342	2,501
(iv) maximum power					
69,46	2300	604	18,06 21,12	260	3,289
(v) 25 % of the load defined in (i)					
16,22	2521	662	8,30 9,71	512	1,670
(vi) 75 % of the load defined in (i)					
46,53	2414	634	13,63 15,94	293	2,919

*) Complementary test on: ISO R 500, type 2 - 1000 rev/min - p.t.o.

Power	Speed		Fuel consumption		
	engine	p.t.o.	total	specific	specific
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
PART LOADS Governor hand lever in position giving standard p.t.o. speed at full load					
(i) 85 % of torque at standard p.t.o. speed					
59,75	2132	560	15,24 17,82	255	3,353
(ii) unloaded					
0	2326	611	4,67 5,46	-	-
(iii) 50 % of the load defined in (i)					
31,24	2228	585	9,80 11,46	314	2,726
(iv) maximum power at standard p.t.o. speed					
67,77	2056	540	16,77 19,61	247,5	3,456
(v) 25 % of the load defined in (i)					
15,97	2277	598	7,25 8,48	454	1,883
(vi) 75 % of the load defined in (i)					
45,84	2182	573	12,47 14,58	272	3,144
STANDARD SPECIFIC FUEL CONSUMPTION: 274/342/255/314 g/kWh					

No load maximum engine speed: 2570 rev/min
Equivalent crankshaft torque at maximum power: 288,4 Nm at 2200 rev/min of engine
Maximum equivalent crankshaft torque: 350,2 Nm at 1400 rev/min of engine

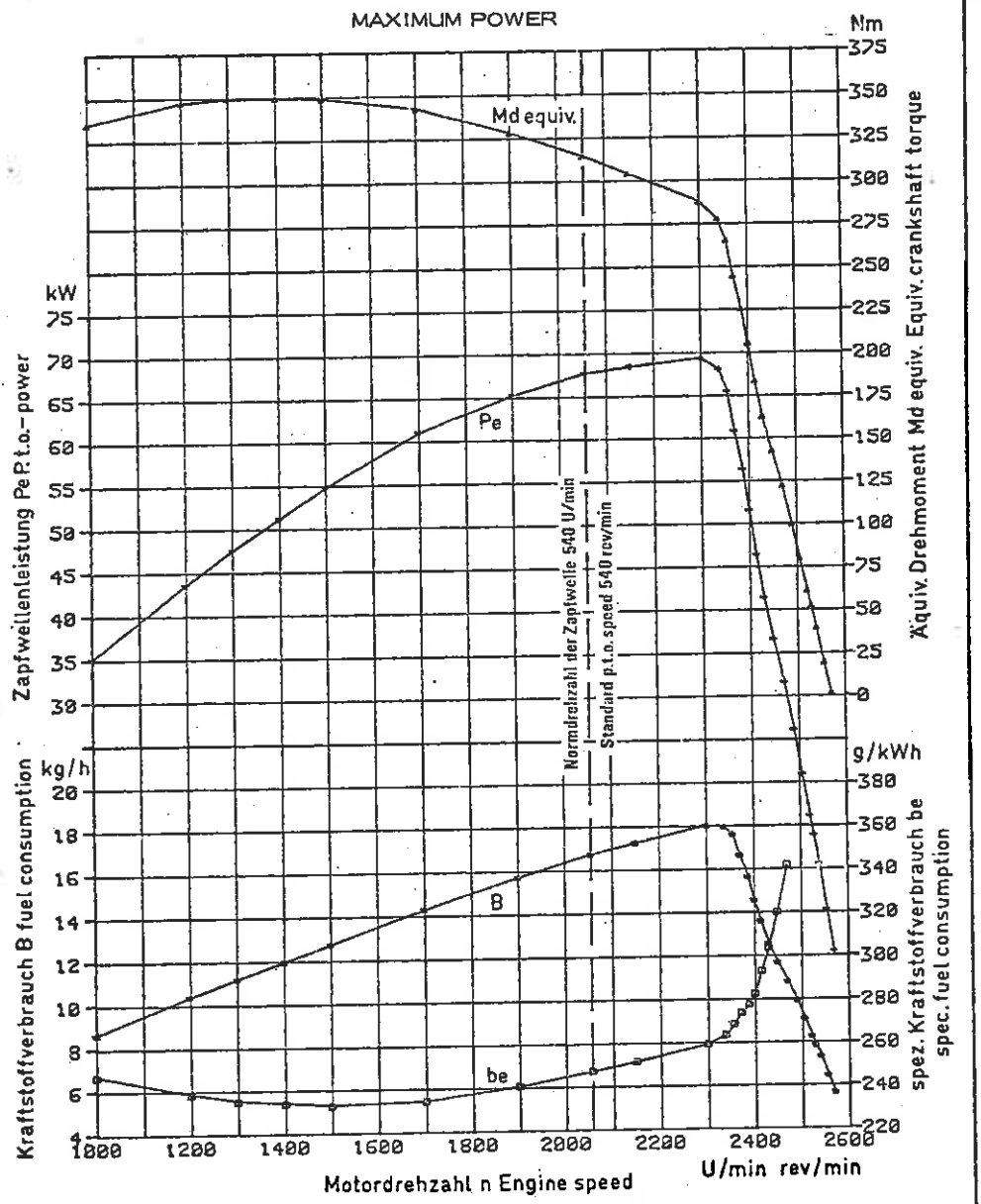
Mean atmospheric conditions: temperature: 18°C
pressure: 985 mbar
humidity: 80 %

Maximum temperatures: coolant: 88°C
engine oil: 112°C
fuel: 58°C
air intake: 23°C

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Zapfwellenprüfung P.t.o.-test

Steyr-Dieseltraktor Typ 377.25 (8120a) Mot. Typ STEYR WD 611.85

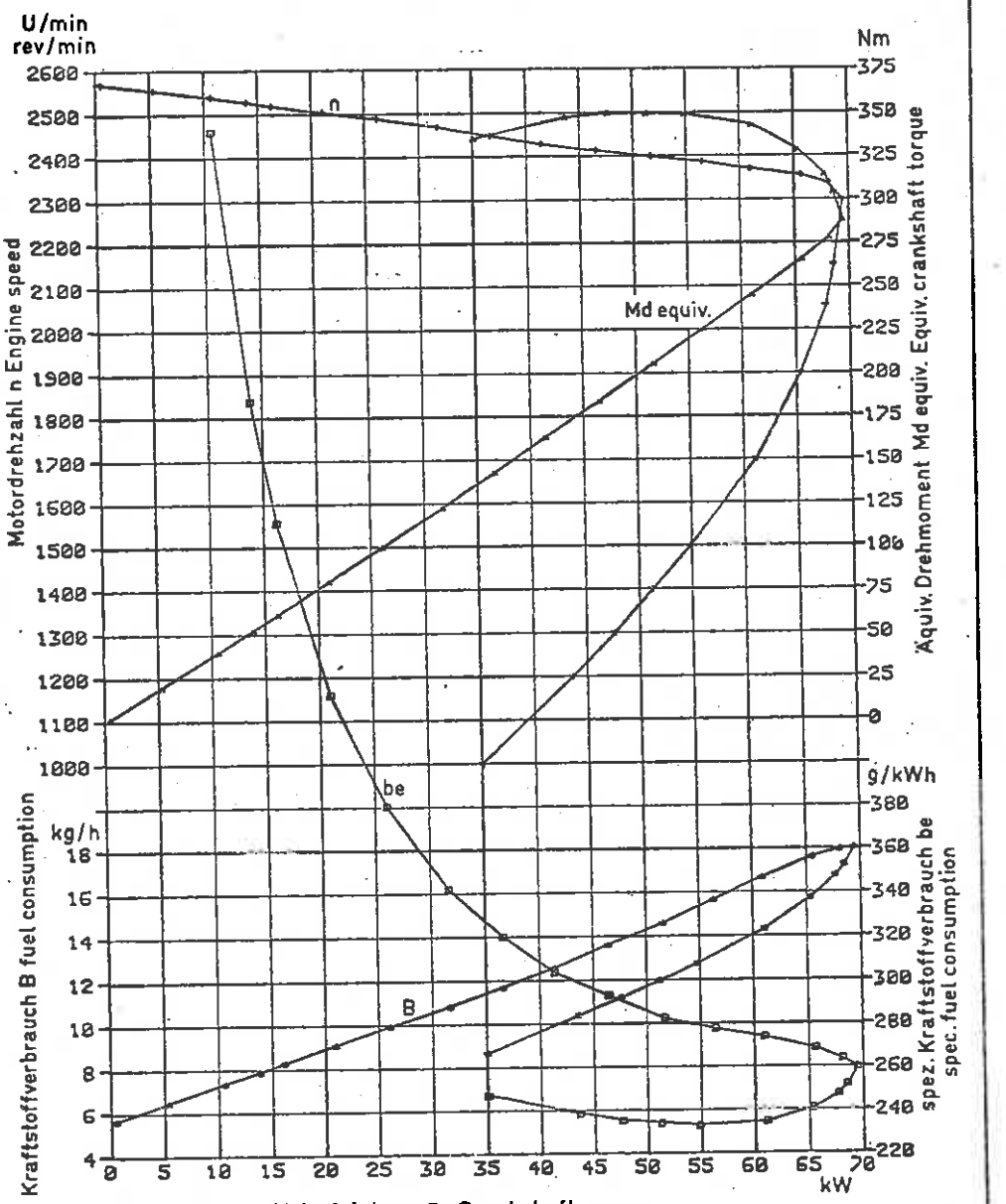


Engine ser. No. 611.85-997	Atm. pressure: 985 mb	Coolant temp.: 88°C	D.of tests: 1978 07 06	Signature
Tractor ser. No. 377.25-999	Air temperature: 23°C	Oil temperature: 112°C	Test No. 119/Za 114	A. Reitlinger
Fuel: 0,855/15°C	Engine oil: Mobil SAE 10W-	Fuel temp.: 58°C	Curves No. 1	

Bundesversuchs-u.Prüfungsanst. f.landw. Maschinen u.Geräte Wieselburg / Austria Protokoll Nr. 020/79

Zapfwellenprüfung P.t.o.–test

Steyr–Dieseltraktor Typ 377.25 (8120a) Mot. Typ STEYR WD 611.85

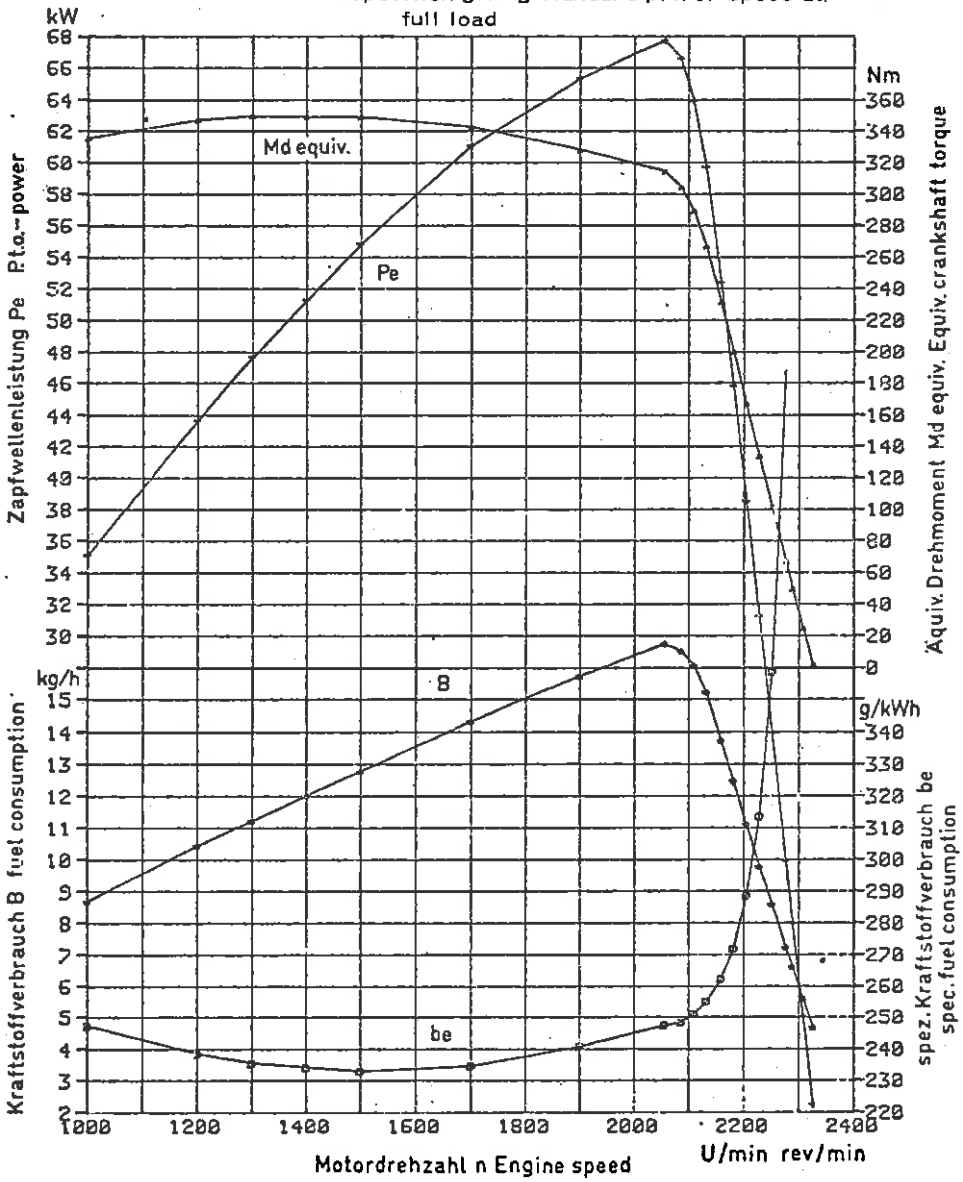


Engine ser. No. 611.85–997	Atm. pressure: 985 mb	Coolant temp.: 88°C	D.of tests: 1978 07 06	Signature
Tractor ser.No. 377.25–999	Air temperature: 23°C	Oil temperature: 112°C	Test No. 119/Za 114	A. Raithen
Fuel: 0.855/15°C	Engine oil: Mobil SAE 10W–	Fuel temp.: 58°C	Curves No. 2	

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u. Geräte Wieselburg / Austria Protokoll Nr. 020/79	**Zapfwellenprüfung P.t.o.-test**	Steyr-Dieseltraktor Typ 377.25 (8120a) Mot. Typ STEYR WD 611.85

PART LOADS

Governor handlever in position giving standard p. t. o. speed at full load



Engine ser. No. 611.85-997	Atm. pressure: 985 mb	Coolant temp.: 88°C	D. of tests: 1978 07 06	Signature
Tractor ser. No. 377.25-999	Air temperature: 23°C	Oil temperature: 112°C	Test No. 119/Za 114	A. Reitlerer
Fuel: 0,855/15°C	Engine oil: Mobil SAE 10W-	Fuel temp.: 58°C	Curves No. 2a	

2. Drawbar performance

Date of tests: 1978 07 17 to 1978 07 26
Type of track: Concrete
Height of drawbar above ground: 410 mm ballasted and unballasted

Gear No.	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Fuel consumption		Temperatures			Atmosph. conditions		
						specific	specific	Fuel	Coo-lant	Engine Oil	Tempe-rature	rel.hu-midity	Pres-sure
	km/h	kW	kN	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	mbar
(I) Maximum power (ballasted)													
1 L	1,882	29,91	57,20	2441	15	-	-	61	87	108	26	60	989
2 L	2,816	44,76	57,22	2392	15	2,486	344	60	86	110	26	61	989
3 L	3,383	53,76	57,21	2342	15	2,560	334	58	88	111	26	62	989
1 Z	3,650	56,35	55,57	2301	13,7	2,662	321	56	84	101	25	63	989
4 L	5,159	60,80	42,43	2302	9,1	2,871	298	56	85	101	25	64	989
2 Z	5,950	61,69	37,32	2299	8	2,913	293,5	53	84	100	23	65	989
5 L	6,452	61,96	34,57	2301	7,4	2,927	292	54	87	102	22	66	989
3 Z	7,410	61,95	30,10	2300	6,8	2,927	292	53	87	100	22	67	989
1 S	8,355	61,50	26,50	2300	6,2	2,906	294	54	86	99	23	68	989

Gear No.	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Fuel consumption		Temperatures			Atmosph. conditions		
						specific	specific	Fuel	Coo-lant	Engine Oil	Tempe-rature	rel.hu-midity	Pres-sure
	km/h	kW	kN	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	mbar
(ii) Five-hour-test at 75 % of pull at maximum power													
5 L	6,797	48,95	25,93	2383	6,2	2,571	332,5	62	88	110	24	60	990
(iii) Five-hour-test at pull corresponding to 15 % wheelslip in test (i)													
3 L	3,331	52,94	57,22	2344	15	2,530	338	64	94	118	26	64	986
(iv) Maximum power (unballasted)													
3 L	3,497	42,27	43,52	2398	15	-	-	58	85	104	26	52	990
1 Z	3,755	45,40	43,53	2374	15	-	-	60	86	106	27	53	990
4 L	4,953	57,80	42,01	2300	13,8	2,731	313	60	87	107	27	54	990
2 Z	5,873	59,69	36,59	2300	10,5	2,820	303	60	87	107	27	55	990
5 L	6,414	60,30	33,84	2301	9,4	2,849	300	60	86	106	26	56	990
3 Z	7,396	60,89	29,64	2299	8,2	2,875	297,5	58	86	105	25	57	990
1 S	8,385	61,00	26,19	2302	7,4	2,880	297	59	87	104	26	58	990
4 Z	11,032	60,24	19,66	2301	6	2,846	300,5	58	85	103	25	60	990

Total oil consumption during 10 hours duration of tests (ii) and (iii): 126 g/h

3. Turning space and turning circle

Wheel equipment front: SEMPERIT 13,6 R 24, PR 8
rear: SEMPERIT 18,4-34 AS, PR 8

Track of wheels front: 1680 mm
rear: 1654 mm

Results *)	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning space	5,03/4,71	4,93/4,88	5,88/5,61	5,78/5,53
Radius of turning circle	4,65/4,33	4,55/4,50	5,50/5,23	5,40/5,15

*) four wheel drive switched: ON / OFF

4. Location of centre of gravity

	mm
Height above ground	973
Distance forward from the vertical plane containing the axis of the rear wheels	896
Distance from the median plane, left-side	2

5. Braking

Date of tests: 1978 07 24 to 1978 07 25
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)
Mass of ballasted tractor: 6015 kg (with driver)

Cold brakes, four wheel drive engaged

		Ballasted	Without ballast
Travelling speed of the tractor	km/h	25	25
(i) Deceleration	m/s^2	5,8	6,0
(ii) Stopping distance	m	5,05	4,7
(iii) Force exerted on the brake pedal	N	324	294
(iv) Force exerted on the brake pedal to achieve a deceleration of 2,5 m/s^2	N	118	98

Brake fade characteristics (hot tests)	Ballasted	Unballasted
Deceleration hot / deceleration cold x 100	95	101
Stopping distance cold / Stopping distance hot x 100	96	88
Force on pedal, cold / Force on pedal, hot x 100	94	97
Force on pedal, cold / force on pedal, hot to achieve a deceleration of 2,5 m/s^2 x 100	92	83

Efficiency of handbrake:
Satisfactory facing up and down slope of 16 %
pull on handbrake: 88 N

6. Measurement of ambient noise

Date of tests: 1978 06 27
Type of sound level meter: 2203 BRÜEL & KJAER
Type of track: Concrete

Results of tests:
Gear: 5. S
Travelling speed before acceleration: 23 km/h
Sound level: 85,5 dB(A)

7. Noise measurement at the driver's ear level

Date of tests: 1978 06 27
Type of sound level meter and octave filter: 2203 and 1613 BRÜEL & KJAER
Type of track: Concrete

Results of tests:
(tractor with protective cab)

Gear	Effective travelling speed	Sound level	
		dB(A)	Noise rating
2 L	3,17 km/h	88	-
3 L	4 km/h	88	-
1 Z	4,27 km/h	87	-
2 Z	6,77 km/h	87	-
5 L *)	7,31 km/h	86	84,5

*) The gear tested corresponds to a travelling speed nearest to 7,5 km/h.

8. Power lift and hydraulic pump performance

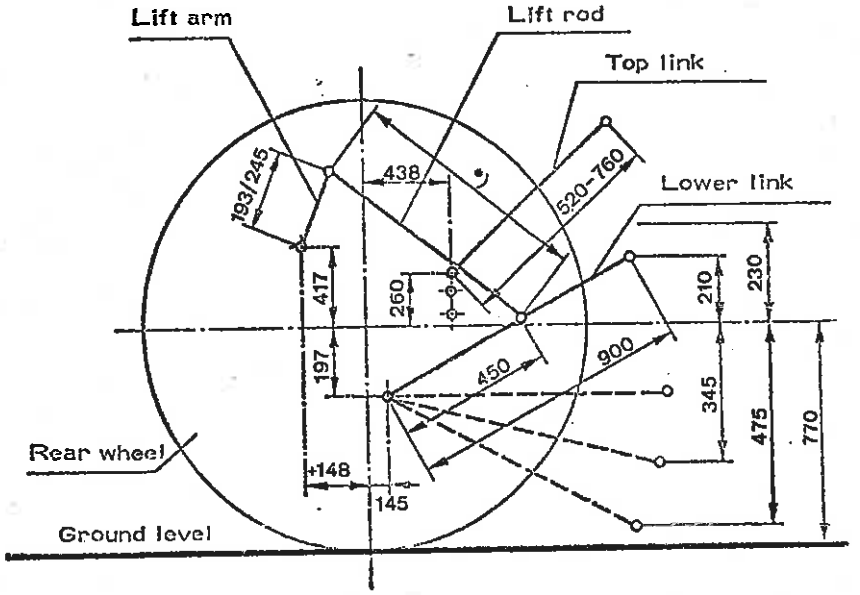
Date and location of tests: 1978 08 16 , Wieselburg, Austria
Hydraulic fluid:
Make and type: SHELL Tellus 33, SAE 20 W
Viscosity at 50°C: 40 mm^2/s (40 cSt)
Typ of linkage lock for transport: hydraulically by throttle valve
Opening pressure of the cylinder over pressure relief valve
(manufacturer specification): 24,5 MPa (245 bar)

Pump characteristics:

(i) Opening pressure of the relief valve: 18,2 MPa (182 bar)
sustained pressure by the open relief valve: 17,5 MPa (175 bar)

(ii) Pump delivery rate at minimum pressure
and rated engine speed: 35,5 l/min

(iii) Pump delivery rate: 35,5 l/min
delivery pressure: 17,5 MPa (175 bar)
power: 10,35 kW



*) basis adjustment: both lift rods 666 mm
left lift rod: from 666 mm to 756 mm adjustable
right lift rod: from 626 mm to 766 mm adjustable

Linkage geometry when connected to the standard frame

		Maximum mechanical advantage		Minimum mechanical advantage	
Projected length in side view					
Lower links	mm	900		900	
Lift arms	mm	193		245	
Lift rods	mm	666		666	
Top link	mm	610		610	
Distance of lift rod connection point from pivot point of lower link	mm	450		450	
The following dimensions are given relative to the rear wheel centre line, situated 770 mm above the ground level					
Lower link pivot point	mm	145 behind	197 below	145 behind	197 below
Top link pivot point	mm	438 behind	260 above	438 behind	260 above
Lift arm pivot point	mm	148 behind	417 above	148 behind	417 above
Maximum und minimum height of lower link hitch points	mm	210 above	345 below	230 above	475 below
Height of lower link hitch points locked in transport position	mm	up to 210 above		up to 230 above	

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivoting point mm		-278	-253	-200	-148	-143	-100	0	+100	+200	+300	+407	+427	+487	+512
Lifting force at the hitch-points kN (Values for the pressure at maximum hydraulic power, calculated from measurements made at maximum pressure)	max.mech. advantage				31,70		33,40	36,15	36,95	36,75	36,00	37,60			
	min. mech. advantage	26,60 45,70*		28,00 45,80*	28,65 46,30*		29,20 46,70*	30,00 47,40*	30,60 46,65*	29,30 45,55*	29,35 44,80*	29,55 44,20*	30,00 44,10*		
	Maximum force exerted throughout whole range: 31,70/26,60 kN (44,10 kN*)														
	Oil pressure: 17,5 MPa (175 bar)														
Lifting force at the frame kN (Values for the pressure at maximum hydraulic power, calculated from measurements made at maximum pressure)	max.mech. advantage					32,50	33,10	32,80	31,20	29,45	26,80	24,90		23,40	
	min. mech. advantage		30,85 48,70*	29,95 47,70*		28,85 46,80*	28,00 45,45*	26,40 42,10*	24,70 39,00*	22,60 35,90*	21,00 33,00*	19,40 29,40*		18,45 26,80*	17,95 26,20*
	Maximum force exerted throughout whole range: 23,40/17,95 kN (26,20 kN*)														
	Oil pressure: 17,5 MPa (175 bar)														

*) when fitted with additional working cylinders

OPTIONAL TEST

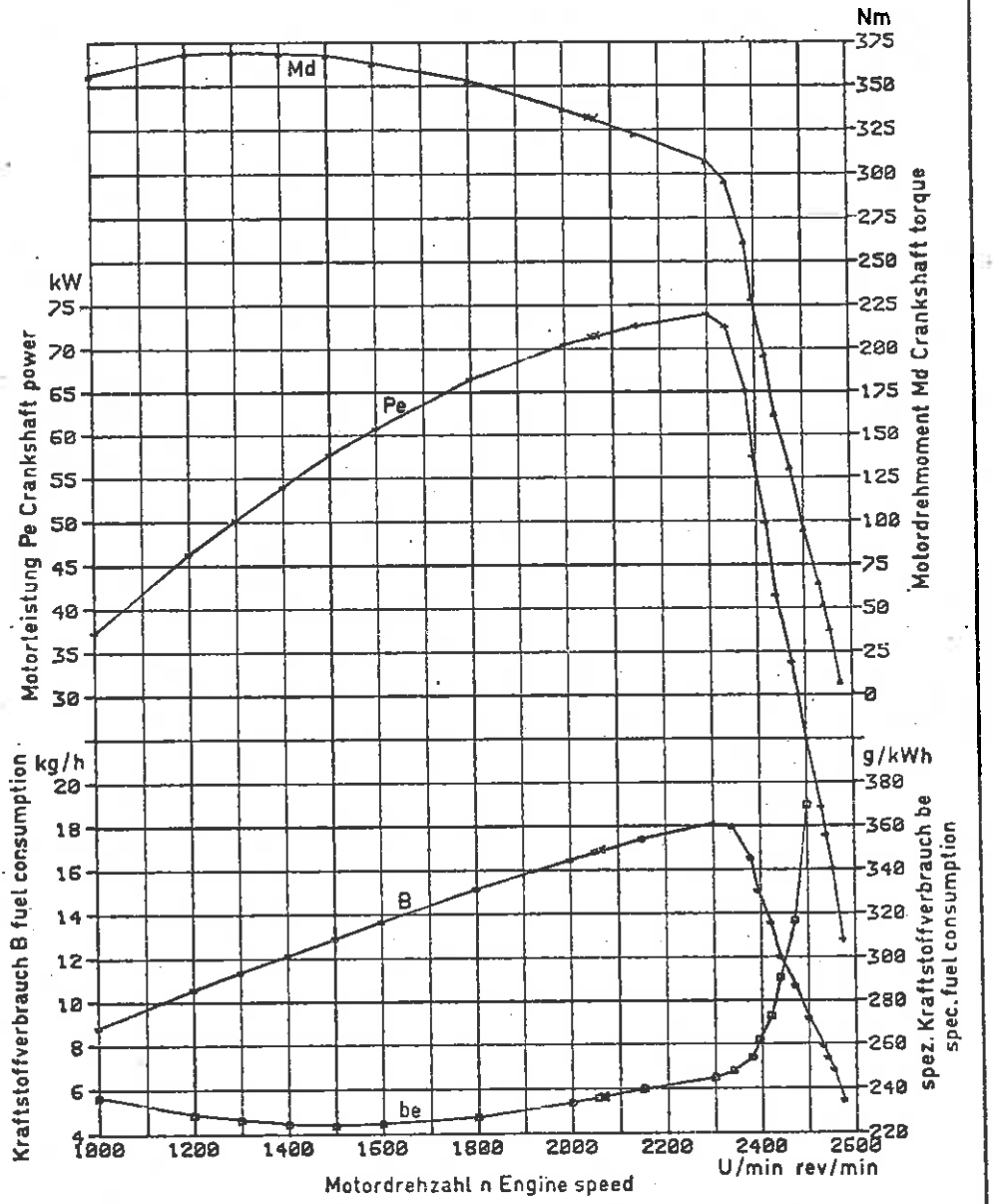
9. Engine performance

Date and location of test: 1978 06 09 Wieselburg/Austria
Type of dynamometer: SCHENK, eddy current brake - W 780

Power	Engine speed	Fuel consumption		
		total	specific	specific
kW	rev/min	kg/h (l/h)	g/kWh	kWh/l
Maximum power - 2 hours test				
74,06	2300	18,14 21,22	245	3,490
Standard p.t.o. speed (540 rev/min - 1000 rev/min)				
71,55	2056	16,86 19,72	235,5	3,628
71,69	2072	16,95 19,82	236,5	3,617
The speed recommended by the manufacturer for drawbar work				
74,06	2300	18,14 21,22	245	3,490
Part loads				
(i) 85 % of torque at maximum power				
65,21	2380	16,56 19,37	254	3,366
(ii) unloaded				
0	2574	5,50 6,43	-	-
(iii) 50 % of the load defined in (i)				
33,86	2472	10,73 12,55	317	2,698
(iv) maximum power				
74,06	2300	18,14 21,22	245	3,490
(v) 25 % of the load defined in (i)				
17,21	2531	7,97 9,32	463	1,846
(vi) 75 % of the load defined in (i)				
49,85	2420	13,61 15,92	273	3,131

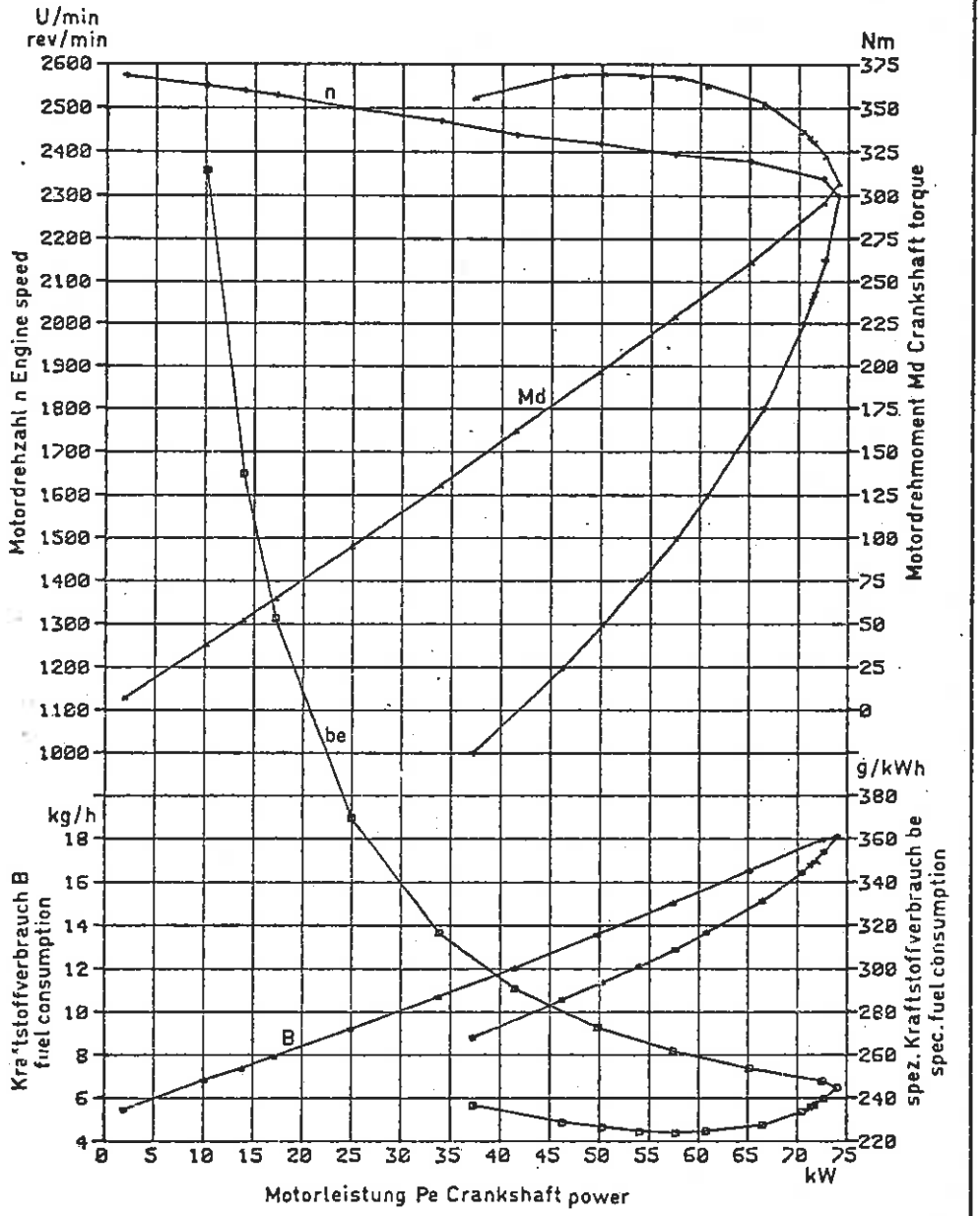
Optimum fuel consumption: 224 g/kWh (see page 26)
No load maximum engine speed: 2574 rev/min
Torque at maximum power: 307,5 Nm at 2300 rev/min
Maximum torque: 369,5 Nm at 1300 rev/min
Mean atmospheric conditions: temperature: 15°C
pressure: 990 mbar
relative humidity: 78 %
Maximum temperatures: coolant: 86°C
engine oil: 108°C
fuel: 50°C
engine air intake: 21°C

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u. Geräte Wieselburg / Austria Protokoll Nr. 020/79	**Motorprüfung Engine-test**	Steyr-Dieseltraktor Typ 377.25 (8120a) Mot. Typ STEYR WD 611.85



Engine ser. No. 611.85-997	Atm. pressure: 990 mb	Coolant temp.: 86°C	D. of tests: 1978 06 09	Signature
Tractor ser. No. 377.25-999	Air temperature: 21°C	Oil temperature: 108°C	Test No. 119/M 167	A. Reitlner
Fuel: 0,855/15°C	Engine oil: Mobil SAE 10W-	Fuel temp.: 50°C	Curves No. 3	

Bundesversuchs-u.Prüfungsanst. f.landw.Maschinen u.Geräte Wieselburg / Austria Protokoll Nr. 020/79	**Motorprüfung Engine–test**	Steyr – Dieseltraktor Typ 377.25 (8120a) Mot. Typ STEYR WD 611.85



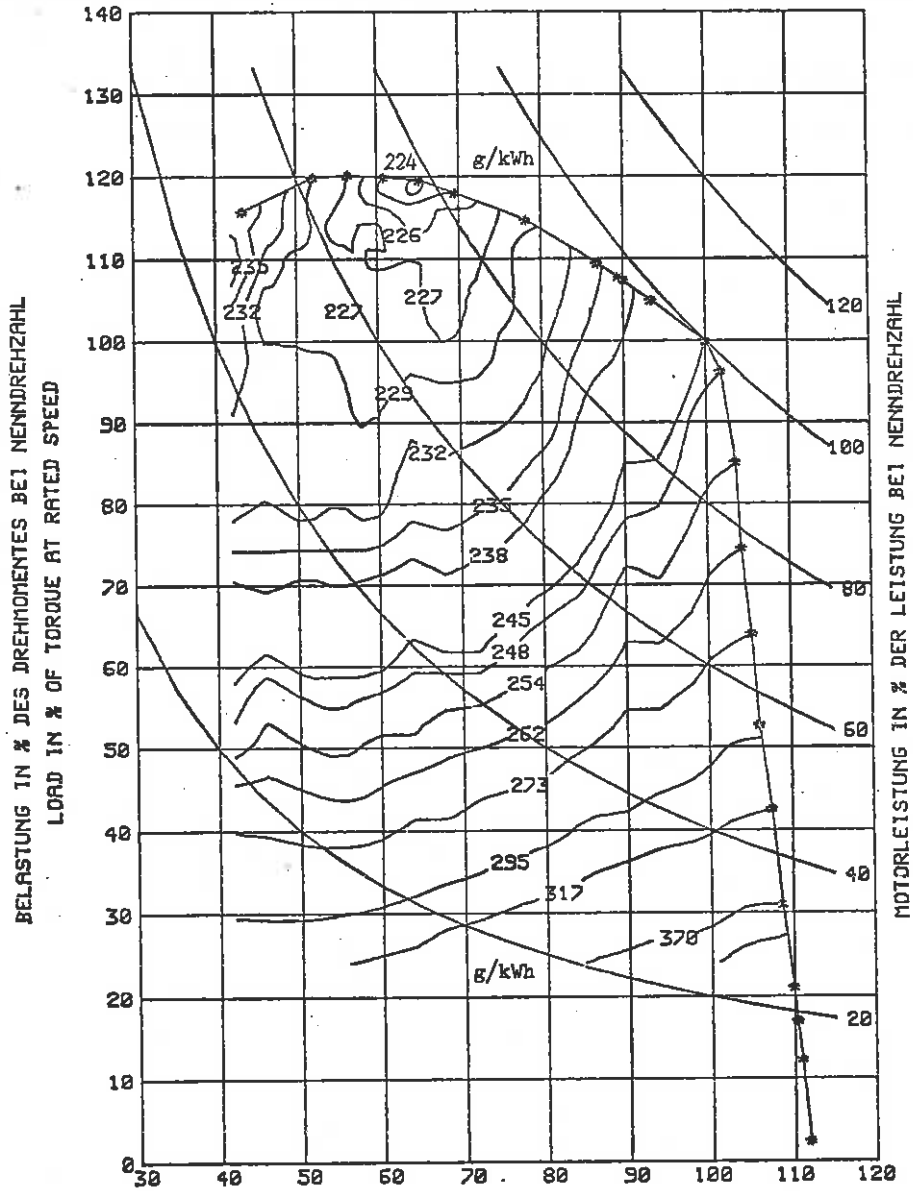
Engine ser. No. 611.85–957	Atm. pressure: 990 mb	Coolant temp.: 86°C	D. of tests: 1978 06 09	Signature
Tractor ser. No. 377.25–999	Air temperature: 21°C	Oil temperature: 108°C	Test No. 119/M 167	A. Reithner
Fuel: 0,855/15°C	Engine oil: Mobil SAE 10W–	Fuel temp.: 50°C	Curves No. 4	

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u. Geräte
Wieselburg / Austria
Protokoll Nr. 020/79

MOTORKENNFELD

ENGINE PERFORMANCE CHARACTERISTICS

Steyr – Dieseltraktor
Typ 377.25 (8120a)
Mot. Typ STEYR WD 611.85



Engine ser. No. 611.85-997	Atm. pressure: 990 mb	Coolant temp.: 86°C	D. of tests: 1978 06 09	Signature
Tractor ser. No. 377.25-999	Air temperature: 21°C	Oil temperature: 108°C	Test No. 119/M 167	A. Reitbauer
Fuel: 0.855/15°C	Engine oil: Mobil SAE 10W--	Fuel temp.: 50°C	Curves No. 5	

ANNEX

Out of the OECD-Code under responsibility of the Austrian Testing Station

1. OCTAVE ANALYSIS OF NOISE AT THE DRIVERS EAR LEVEL
   (to page 19, chapter 7)

