O.E.C.D. Report No.: 614

BUNDESVERSUCHS - UND PRÜFUNGSANSTALT
für landwirtschaftliche Maschinen und Geräte,
Wieselburg

Diesel-Tractor STEYR 377.00

Trade name:

Diesel-Tractor STEYR 8100



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 377.00 Trade name: STEYR 8100
Type:	Wheel tractor, rear wheel driven, unit construction
Serial No.:	377.00 - 999

Engine:

Make:	Own make
Model:	WD 611.40
Type:	4 stroke diesel engine with direct injection
Serial No.:	611.40 - 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 3655 (=serial model VA 6/10 H 1150 CR 160-4) Manufacturers production setting: 42 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

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. 056. 67. 900

Exhaust silencer:

EBERSPÄCHER
Reflexion type, at left side of the engine, mouth upwards
Modell: T 16. 47. 646. 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/40 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 367005 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
Gearbox:	KLÖCKNER HUMBOLDT DEUTZ Group gear with 3 forward and 1 reverse group combined with synchronised 4 speed change gear (25 km/h model, as tested) or optional with synchronised 5 speed change gear (30 km/h model) Model: TW 90.20 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

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 **)	1721,308	0,38	(0,39)
	2 **)	1127,407	0,57	(0,59)
	3 **)	919,541	0,70	(0,73)
	4 **)	634,166	1,02	(1,05)
	5 **)	516,728	1,25	(1,29)
forward slow L	1	322,288	2,00	(2,07)
	2	211,089	3,06	(3,16)
	3	172,169	3,75	(3,88)
	4	118,738	5,44	(5,62)
	5 **)	96,719	6,68	(6,90)
forward medium Z	1	159,051	4,06	(4,20)
	2	104,174	6,20	(6,42)
	3	84,967	7,60	(7,86)
	4	58,598	11,02	(11,39)
	5 **)	47,746	13,53	(13,98)
forward fast S	1	75,832	8,52	(8,80)
	2	49,668	13,01	(13,44)
	3	40,510	15,95	(16,48)
	4	27,938	23,12	(23,90)
	5 **)	22,764	28,38	(29,33)
reverse R	1	129,591	4,98	(5,15)
	2	84,878	7,61	(7,87)
	3	69,229	9,33	(9,64)
	4	47,744	13,53	(13,98)
	5 **)	38,903	16,60	(17,16)

*) calculated with basis tyre equipment, 16,9-34 AS
(with test tyre equipment 18,4-34 AS)

**) optional, not on tested tractor

Switching aid circuit:

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

Oil capacity:

Gearbox and rear axle: appr. 48 l multipurpose oil
Changing interval: 1000 hours or one year
Recommended oil: 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)

Power take off:

Rear p.t.o.: 2 shafts at rear of tractor, 50 mm right and left hand of median plane, 596/581 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
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 410 to 945 mm	from 190 to 775 mm
	245 mm	from 270 to 965 mm	from 55 to 790 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:	863, 833, 793, 763 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:	15000 N

Optional (not on tested tractor)
ROCKINGER automatic coupler
Fork type, heights adjustable in 4 positions

Heights above ground:	863, 833, 793, 763 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:	15000 N

ROCKINGER
Fork type, heights adjustable in 8 positions

Height above ground:	910, 850, 810, 770, 730, 670, 630, 590 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:	15000 N

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:	15000 N

Towing hitch:

Fork type

Height above ground:	809 mm
Distance from front axle:	frontwards 496 mm
Diameter of coupling pin:	32 mm

Steering:

ZF-SCHWÄBISCH GMÜND
Hydrostatic steering, model ZF 8452
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) Trailer braking valve: high pressure air system, one or two line system Storage pressure: 1,8 MPa (18 bar) Working pressure: 0,72 MPa (7,2 bar)

Wheels:

Front wheels:	2 pneumatics, steering function, diagonal carcass 7,50-16 AS front, PR 6; rim: 5,50 F x 16 Maximum permissible load on each tyre: 7310 N at 2,25 bar inflation pressure 14620 N at 2,92 bar inflation pressure and max. 8 km/h driving speed for front implement working Track width: 1470 mm (changeable to 1570, 1670, 1770, 1870, 1970 and 2070 mm; and 1566, 1666, 1766, 1866, 1966, 2066 and 2166 mm by reversing wheels) Optional front wheel equipment: 9,00-16 AS front, PR 8 (as on tested tractor) 7,50-20 AS front, 11,00-16 AS front
Rear wheels:	2 pneumatics, driving function, diagonal or radial carcass 16,9-34 AS, PR 8; rim: DW 14 x 34 Maximum permissible load on each tyre: 23 350 N at 1,7 bar inflation pressure Track width: 1524 mm (1780 mm by reversing wheels) Optional rear wheel equipment: 18,4-34 AS, PR 8 (as on tested tractor) 13,6-38 AS, 16,9-38 AS, 9,5-48 AS (twin tyre equipment)
Wheel base:	2509 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	1076	140 x 125	880
Side lights	1694	164 x 70	216
Rear lights	1694	164 x 70	216
Reflectors	1508 641	102 x 54 80 dia	175 510

*) with tyre equipment: 7,50-16 AS front/16,9-34 AS
**) with overall width of 2050 mm

Number of grease points: 17

Driver seat:

BOSTROM
Model XH 2 TS 2; tested on tractor according to national regulation (Prot. Nr. 129/78)
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. 133/78)
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 safety cab

	Front	Rear	Total
Without ballast	1189 kg	2483 kg	3672 kg
With ballast	1850 kg	3330 kg	5180 kg

Ballastmass:

	Number of weights	Total mass (excluding water)	Water
Front	15	531 kg	-
Rear	6 + 2	377 kg	600 kg
Additional	-	-	-

Track setting and tyre equipment:

1670 mm at front
1524 mm at rear
Front wheels: 9,00-16 AS front, PR 8
Rear wheels: 18,4-34 AS, PR 8

Overall dimensions:

	Length	Width		Height **)
		max.	min. *)	
	mm	mm	mm	mm
With ballast	4.640	2410	2050	2570/2600
Without ballast	4.140	2410	2050	2570/2600

*) measured on mudguards (350 mm width type)
**) measured to top of: safety cab / exhaust pipe with basis tyre equipment

Minimum ground clearance: 415 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 for p.t.o. and drawbar tests 0,850 kg/l for engine tests 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 Viscotity at 50°C: 40 mm^2/s (40 cSt)

COMPULSORY TESTS

1. Main power take-off performance

Date and location of tests: 1978 08 01, 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					
57,10	2200	578	14,86 17,38	260	3,285
Standard p.t.o. speed					
56,92	2056	540	14,46 16,91	254	3,366
57,50	2072	1000	14,51 16,97	252	3,388
The speed recommended by the manufacturer for drawbar work					
56,53	2300	604	15,05 17,60	266	3,212
PART LOADS Governor hand lever in position giving maximum power					
(i) 85 % of torque at maximum power					
53,00	2403	631	14,73 17,23	278	3,076
(ii) unloaded					
0	2570	675	5,18 6,06	-	-
(iii) 50 % of the load defined in (i)					
27,47	2490	654	9,67 11,31	352	2,429
(iv) maximum power					
57,10	2200	578	14,86 17,38	260	3,285
(v) 25 % of the load defined in (i)					
13,94	2529	664	7,42 8,68	532	1,606
(vi) 75 % of the load defined in (i)					
40,57	2452	644	12,21 14,28	301	2,841

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					
49,19	2091	549	12,81 14,98	261	3,283
ii) unloaded					
-	2224	584	3,89 4,55	-	-
(iii) 50 % of the load defined in (i)					
25,40	2159	567	8,18 9,57	322	2,654
(iv) maximum power at standard p.t.o. speed					
56,92	2056	540	14,46 16,91	254	3,366
(v) 25 % of the load defined in (i)					
12,92	2197	577	6,00 7,02	464	1,840
(vi) 75 % of the load defined in (i)					
37,43	2121	557	10,44 12,21	279	3,065
STANDARD SPECIFIC FUEL CONSUMPTION: 278/352/261/322 g/kWh					

load maximum engine speed: 2570 rev/min

Equivalent crankshaft torque
at maximum power: 247,8 Nm at 2200 rev/min of engine

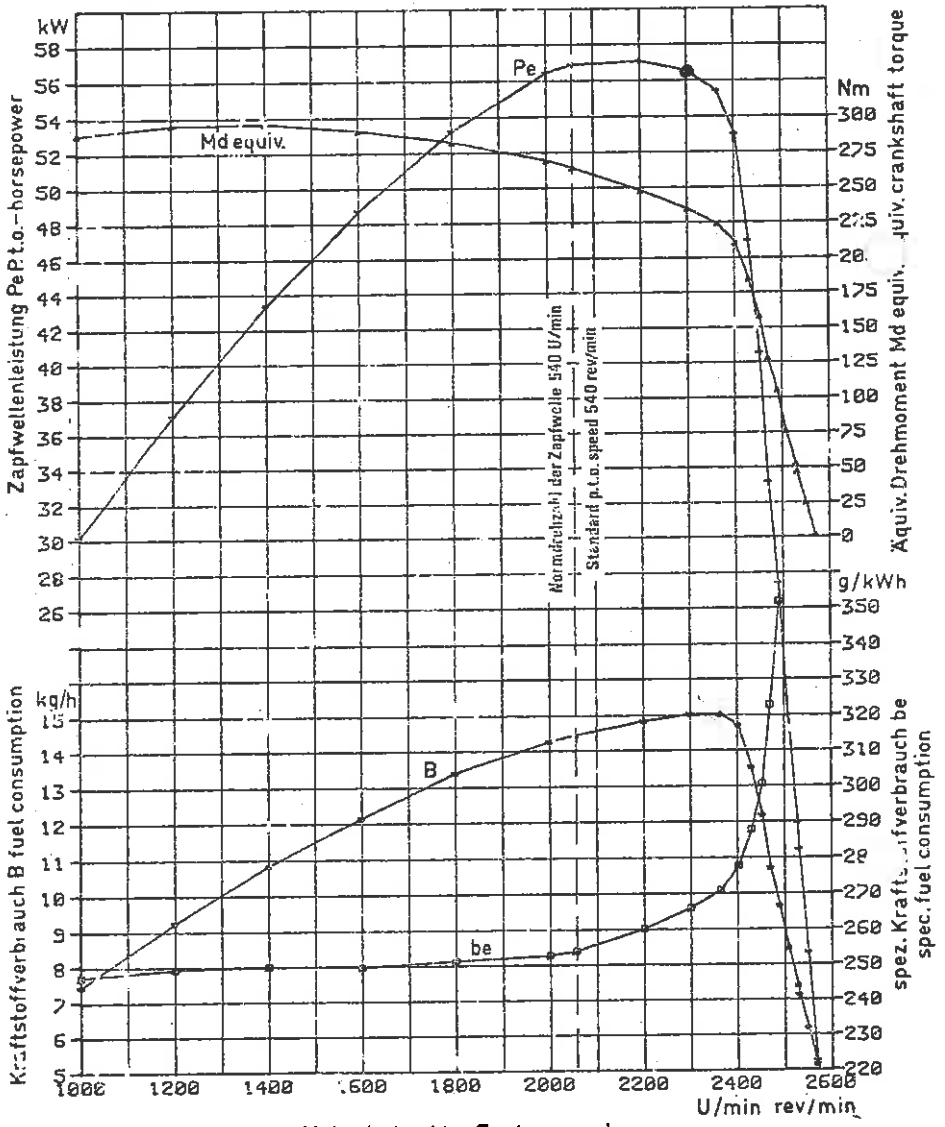
Maximum equivalent crankshaft torque: 296,2 Nm at 1400 rev/min of engine

Mean atmospheric conditions: temperature: 15°C
pressure: 986 mbar
humidity: 81 %

Maximum temperatures: coolant: 90°C
engine oil: 109°C
fuel: 60°C
air intake: 24°C

Bundesversuchs-u.Prüfungsanst. f.landw. Maschinen u.Geräte Wieselburg/Austria Protokoll Nr. 017/79	**Zapfwellenprüfung P.t.o.-test**	Steyr-Dieseltraktor Typ 377.00 (8100) Mot. Typ STEYR WD 611.40

MAXIMUM POWER Höchstleistung

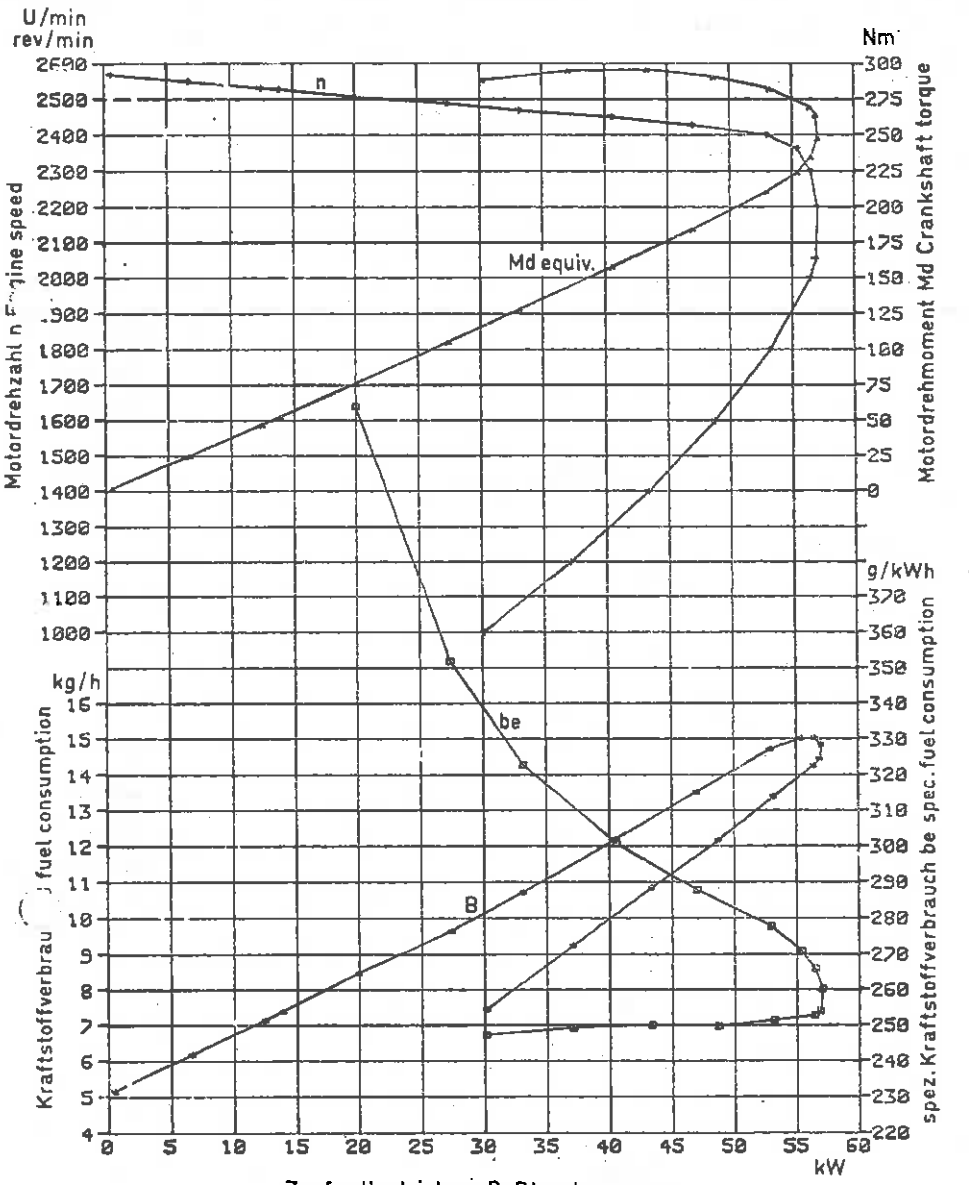


Motor Nr. 997	Luftdruck: 986 mb	Kühltemp. 90°C	Versuchstag: 1979 08 01	Vers. Leitung
Fahrzeug Nr. 377.00-999	Lufttemperatur: 24°C	Öltemperatur: 109°C	Versuchs Nr. 117/Za 112	A. Reitlun
Kraftstoff: 0,855/15°C	Motoröl: Mobil SAE 10W	Kraftstofftemp. 60°C	K. Blatt Nr. 1	

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Wieselburg / Austria
Protokoll Nr. 017/79

Zapfwellenprüfung
P.t.o.-test

Steyr-Dieseltraktor
Typ 377.00 (8100)
Mot. Typ STEYR WD 611.40



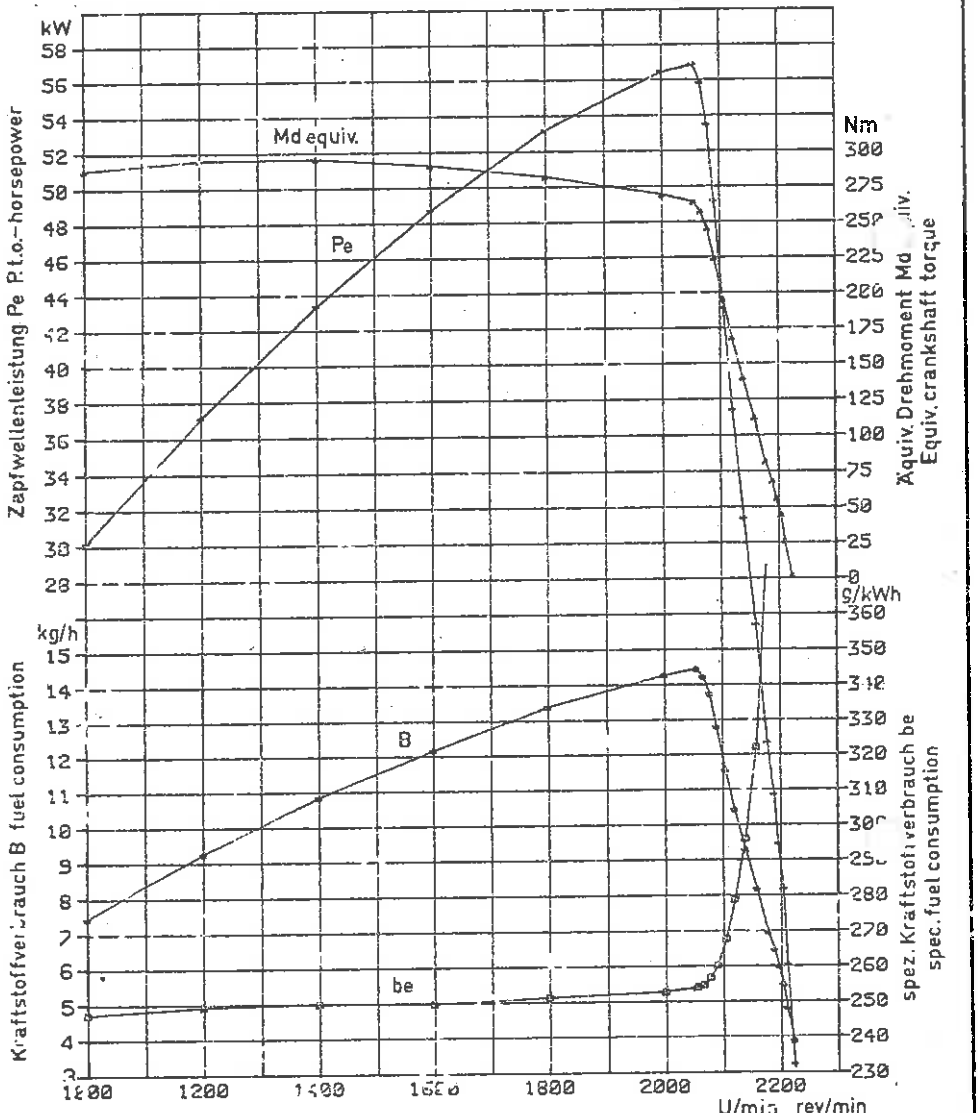
Motor Nr. 997	Luftdruck: 986 mb	Kühltemp. 90°C	Versuchstag: 1978 08 01	Vers. Leitung
Fahrzeug Nr. 377.00-999	Lufttemperatur: 24°C	Öltemperatur: 109°C	Versuchs Nr. 117/Za 112	A. Reitler
Kraftstoff: 0,855/15°C	Motoröl: Mobil SAE 10W	Kraftstofftemp. 60°C	K.Blatt Nr. 2	

Bundesversuchs-u.Prüfungsanst. f.landw.Maschinen u.Geräte Wieselburg / Austria Protokoll Nr. 017/79

Zapfwellenprüfung P.t.o.-test

STEYR-Dieseltraktor Typ 377.00 (8100) Mot. Typ STEYR WD 611.40

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



Motor Nr. 997	Luftdruck: 986 mb	Kühltemp. 90°C	Versuchstag: 1978.03.01	Vers. Leitung
Fahrzeug Nr. 377.00-999	Lufttemperatur: 24°C	Öltemperatur: 109°C	Versuchs Nr. 117/Za 112	A. Reither
Kraftstoff: 0,855 / 15°C	Motoröl: Mobil SAE 10W	Kraftstofftemp. 60°C	K.Blatt Nr. 2a	

2. Drawbar performance

Date of tests: 1978 08 03 to 1978 08 08
Type of track: Concrete
Height of drawbar above ground: 790 mm ballasted, 680 mm 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	N	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	mbar
(1) Maximum power (ballasted)													
1 L	1,924	24,37	45600	2492	15	–	–	46	80	102	24	62	986
2 L	2,889	36,60	45610	2450	15	2,484	344	48	80	100	23	62	986
3 L	3,464	43,88	45610	2396	15	2,539	337	50	81	100	23	62	986
1 Z	3,696	46,82	45600	2362	15	2,670	320	53	83	101	24	62	986
4 L	5,121	48,37	34000	2301	10	2,756	310	55	85	96	24	63	986
2 Z	5,918	48,68	29610	2299	8,7	2,773	308	53	84	90	24	63	986
3 Z	7,392	48,80	23770	2302	7,2	2,775	308	53	85	90	24	64	986
1 S	8,348	48,60	20960	2300	6,6	2,767	309	52	84	89	24	64	986
4 Z	10,965	47,55	15610	2300	5,2	2,706	316	50	83	88	23	64	986
2 S	13,039	46,50	12840	2302	4,5	2,648	323	48	80	86	23	65	986

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	N	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	mbar
(ii) Five-hour-test at 75 % of pull at maximum power													
3 Z	8,021	39,72	17830	2449	5,7	2,698	317	50	80	92	22	64	989
(iii) Five-hour-test at pull corresponding to 15 % wheelslip in test (i)													
1 Z	3,654	46,28	45600	2350	15	2,637	324	56	82	100	26	58	985
(iv) Maximum power (unballasted)													
3 L	3,546	33,87	34390	2454	15	-	-	50	86	95	27	56	986
1 Z	3,816	36,46	34400	2439	15	-	-	50	83	96	26	56	986
4 L	4,867	46,51	34400	2322	15	-	-	53	82	95	27	57	986
2 Z	5,735	47,20	29630	2299	11,8	2,688	318	55	84	96	28	60	986
3 Z	7,257	47,84	23730	2301	9,2	2,722	314	52	84	94	28	61	986
1 S	8,222	48,00	21020	2300	8,2	2,732	313	52	84	96	28	62	986
4 Z	10,836	47,74	15860	2301	6,5	2,717	314,5	50	83	91	28	63	986
2 S	12,913	47,20	13160	2299	5,5	2,688	318	48	80	84	27	64	986

Total oil consumption during 10 hours duration of tests (ii) and (iii): 91 g/h

3. Turning space and turning circle

Wheel equipment front: SEMPERIT 9,00-16 AS front, PR 8
rear: SEMPERIT 18,4-34 AS, PR 8

Track of wheels front: 1670 mm
rear: 1524 mm

Results	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning space	4,13	4,16	4,58	4,57
Radius of turning circle	3,81	3,84	4,26	4,25

4. Location of centre of gravity

	mm
Height above ground	975
Distance forward from the vertical plane containing the axis of the rear wheels	805
Distance from the median plane	0

5. Braking

Date of tests: 1978 07 12, 1978 08 03
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)
Mass of ballasted tractor: 5255 kg

Cold brakes

		Ballasted	Without ballast
Travelling speed of the tractor	km/h	25	25
(i) Deceleration	m/s^2	4,6	4,5
(ii) Stopping distance	m	5,6	5,7
(iii) Force exerted on the brake pedal	N	333	196
(iv) Force exerted on the brake pedal to achieve a deceleration of 2,5 m/s^2	N	147	98

Brake fade characteristics (hot tests)	Ballasted	Unballasted
Deceleration hot / deceleration cold x 100	100	104
Stopping distance cold / Stopping distance hot x 100	93	85
Force on pedal, cold / Force on pedal, hot x 100	85	80
Force on pedal, cold / force on pedal, hot to achieve a deceleration of 2,5 m/s^2 x 100	94	83

Efficiency of handbrake:
Satisfactory facing up and down slope of 16 %
pull on handbrake: 98 N

6. Measurement of ambient noise

Date of tests: 1978 07 19
Type of sound level meter: 2203 BRÜEL & KJAER
Type of track: Concrete

Results of tests:
Gear: 4. S
Travelling speed before acceleration: 19 km/h
Sound level: 87 dB(A)

7. Noise measurement at the driver's ear level

Date of tests: 1978 07 19
Type of sound level meter and octave filter: 2203 and 1613 BRÜEL & KJAER
Type of track: Concrete

Results of tests:
(tractor with protective frame)

Gear	Effective travelling speed	Sound level	
		dB(A)	Noise rating
2. Z *)	7,33 km/h	90,5	88

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

8. Power lift and hydraulic pump performance

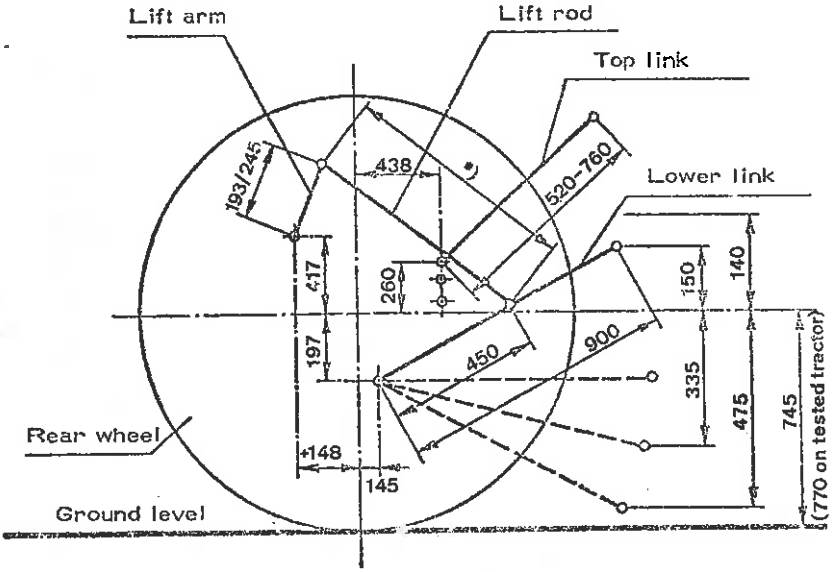
Date and location of tests: 1978 08 16 , Wieselburg, Austria
Hydraulic fluid:
Make and type: SHELL Tellus 33, SAE 20 W
Viscosity at 50°C: 40 mm^2/s (40 cSt)
Typ of linkage lock for transport: hydraulically by throttle valve
Opening pressure of the cylinder over pressure relief valve
(manufacturer specification):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

Pump characteristics:

i) Opening pressure of the relief valve: 18,0 MPa (180 bar)
sustained pressure by the open relief valve: 17,2 MPa (172 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: 17,2 MPa (172 bar)
power: 10,15 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 745mm 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	200 above	335 below	220 above	475 below
Height of lower link hitch points locked in transport position	mm	200 above	-	220 above	-

*) 770 mm on ' ctor tested

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivoting point [mm]		-283	-238	-200	-138	-133	-100	0	100	200	300	397	417	487	502
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				31,85		33,25	36,38	37,90	38,53	39,06	40,50			
	min. mech. advantage	25,74	27,00	27,90	28,95		29,37	29,95	30,12	30,12	30,22	31,20	31,60		
	Maximum force exerted throughout whole range: 31,85 / 25,74 kN														
	Oil pressure: 17,2 MPa (172 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					34,40	34,20	32,80	31,90	30,10	27,60	25,10		23,30	
	min. mech. advantage		32,20	31,40		29,40	28,90	27,00	25,00	23,00	21,20	19,30		18,00	17,80
	Maximum force exerted throughout whole range: 23,30 / 17,80 kN														
	Oil pressure: 17,2 MPa (172 bar)														

OPTIONAL TEST

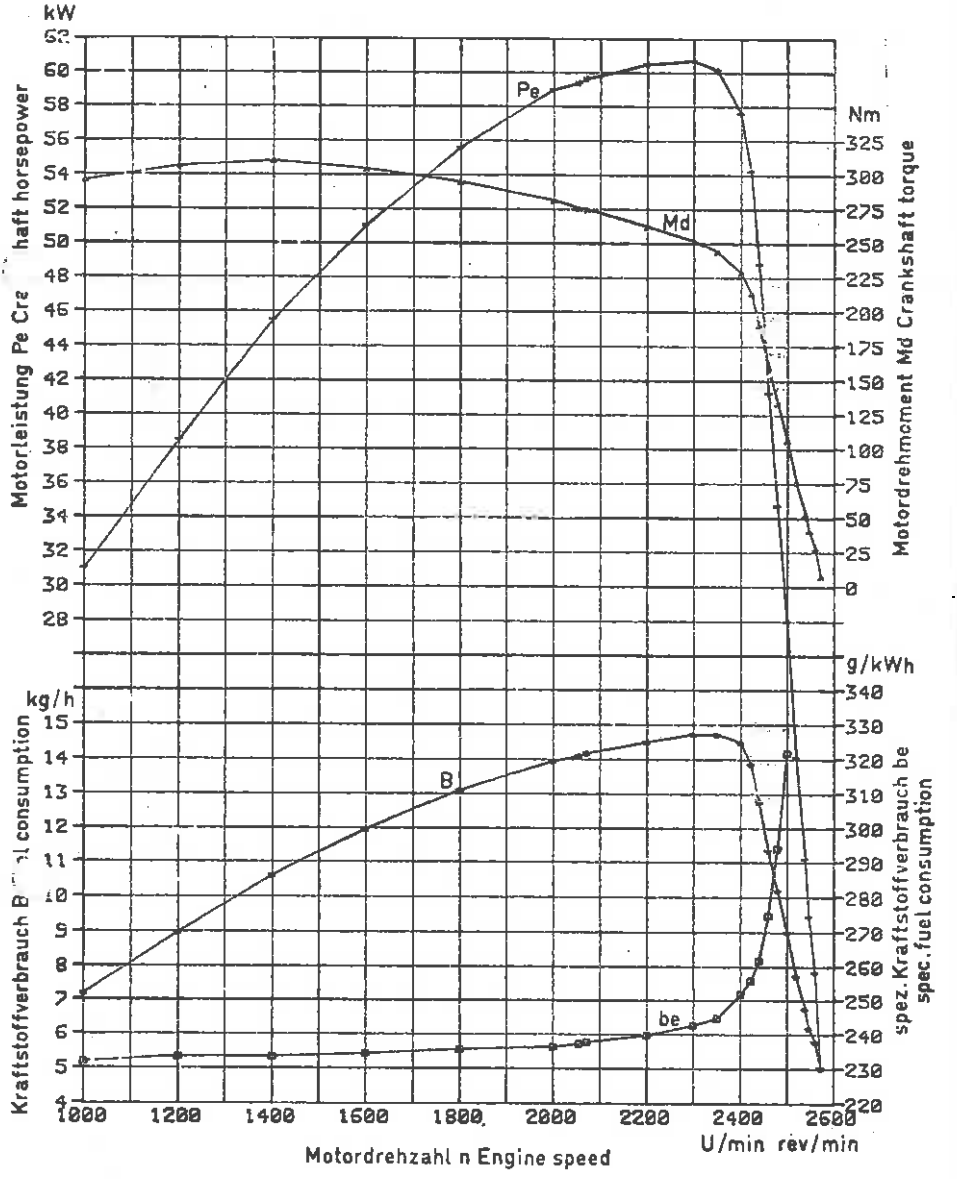
9. Engine performance

Date and location of test: 1978 04 25, Wieselburg, Austria
Type of dynamometer: SCHENK, eddy current brake, W780

Power	Engine speed	Fuel consumption		
		total	specific	specific
kW	rev/min	kg/h (l/h)	g/kWh	kWh/l
Maximum power - 2 hours test				
60,72	2300	14,74 17,34	243	3,501
Standard p.t.o. speed (540 rev/min - 1000 rev/min)				
59,42	2056	14,11 16,60	237,5	3,579
59,67	2072	14,20 16,71	238	3,571
The speed recommended by the manufacturer for drawbar work				
60,72	2300	14,74 17,34	243	3,501
Part loads				
(i) 85 % of torque at maximum power				
54,25	2422	13,89 16,34	256	3,320
(ii) unloaded				
0	2572	5,03 5,92	-	-
(iii) 50 % of the load defined in (i)				
28,00	2500	9,02 10,61	322	2,639
(iv) maximum power				
60,72	2300	14,74 17,34	243	3,501
(v) 25 % of the load defined in (i)				
14,22	2540	6,77 7,96	476	1,78[illegible]
(vi) 75 % of the load defined in (i)				
41,44	2460	11,36 13,36	275	3,093

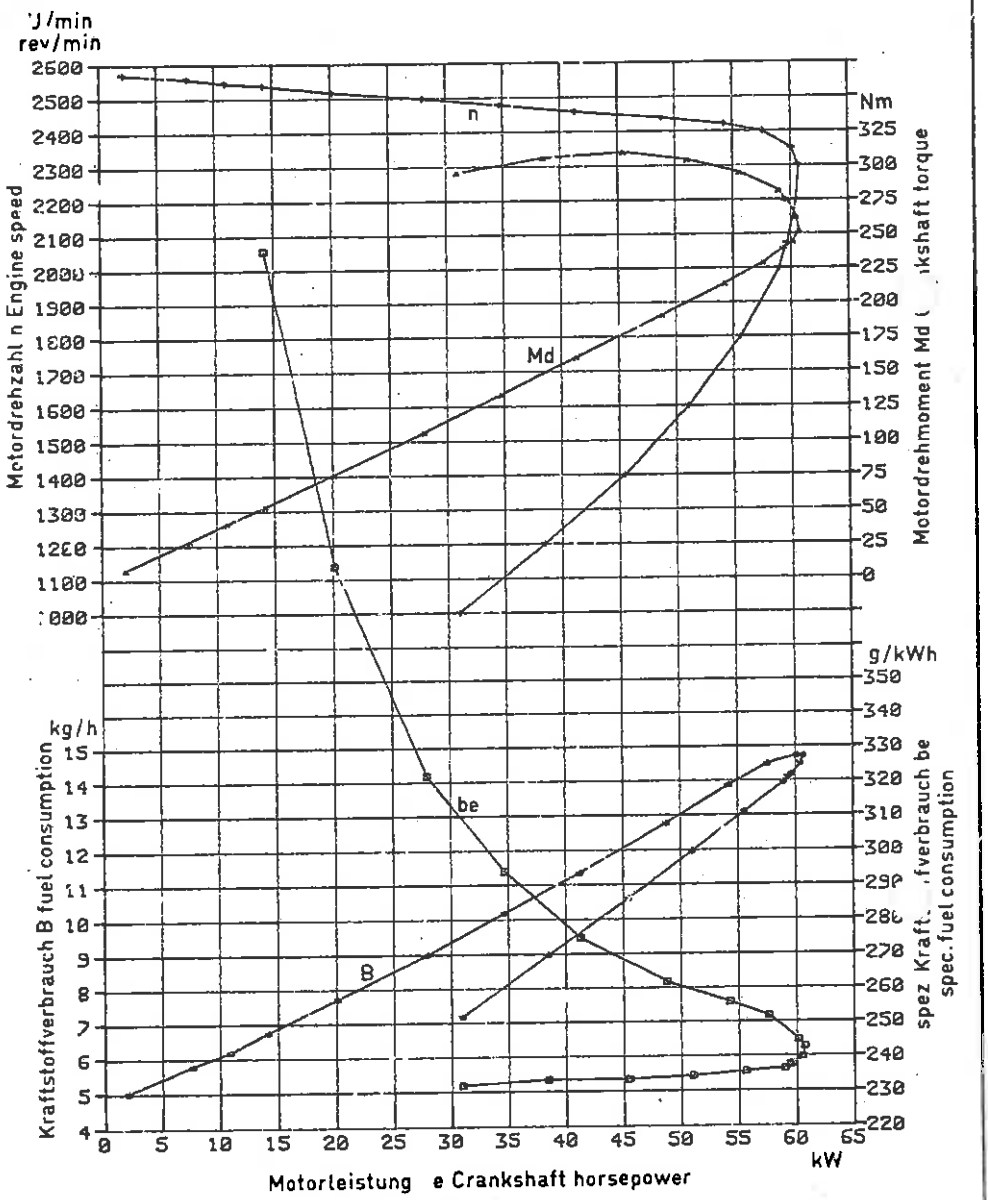
Optimum fuel consumption: 232 g/kWh (see page 26)
No load maximum engine speed: 2572 rev/min
Torque at maximum power: 252,1 Nm
Maximum torque: 310,4 Nm at 1400 rev/min engine speed
Mean atmospheric conditions: temperature: 12°C
pressure: 977 mbar
relative humidity: 74 %
Maximum temperatures: coolant: 84°C
engine oil: 102°C
fuel: 42°C
engine air intake: 20°C

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u. Geräte Wieselburg / Austria Protokoll Nr. 017/79	**Motorprüfung Engine-test**	Steyr – Dieseltraktor Typ 377.00 (8100) Mot. Typ STEYR WD 611.40



Motor Nr. 997	Luftdruck: 977 mb	Kühltemp. 84°C	Versuchstag: 1978 04 25	Vers. Leitung
Fahrzeug Nr. 377.00-999	Lufttemperatur: 20°C	Öltemperatur: 102°C	Versuchs Nr. 117/M 165	A. Reitlhuber
Kraftstoff: 0,850/15°C	Motoröl: Mobil SAE 10W	Kraftstofftemp. 42°C	K.Blatt Nr. 3	

Bundesversuchs-u.Prüfungsanst. f.landw.Maschinen u.Geräte Wieselburg / Austria Protokoll Nr. 017/79	**Motorprüfung Engine-test**	Steyr – Dieseltraktor Typ 377.00 (8100) Mot. Typ STEYR WD 611.40



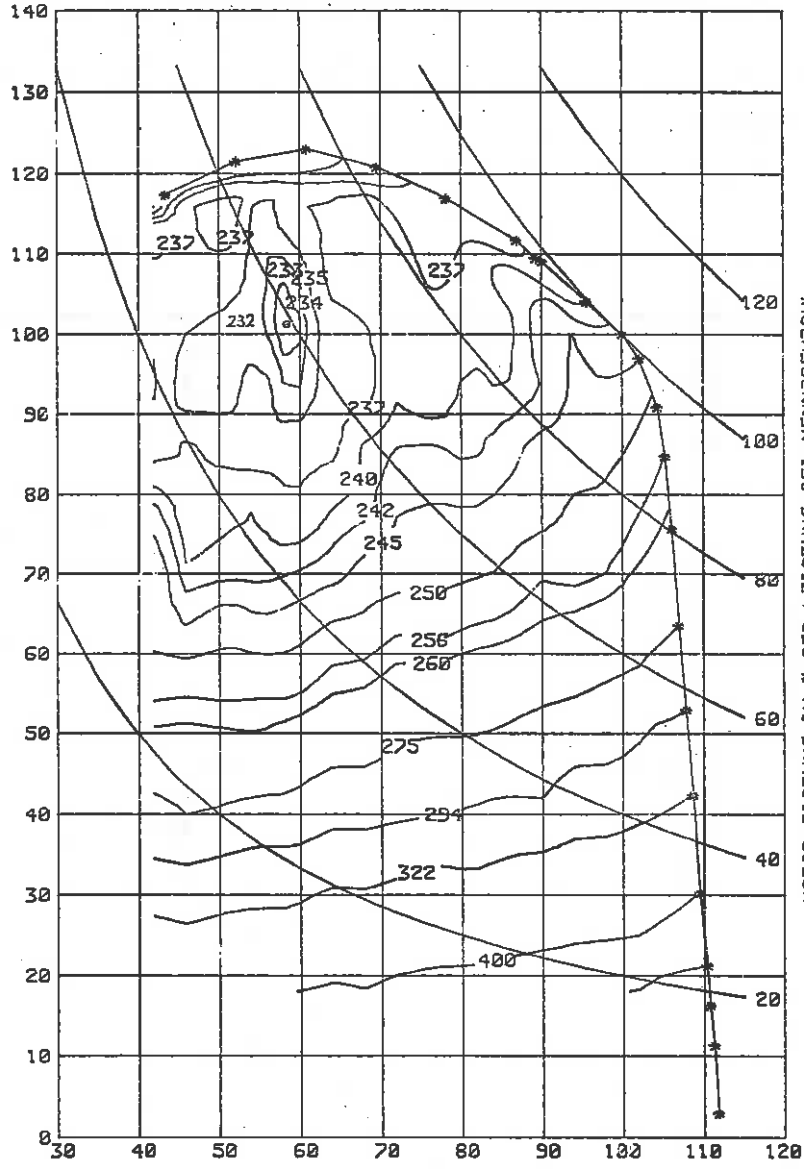
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Fahrzeug Nr. 377.00-999	Lufttemperatur: 20°C	Öltemperatur: 102°C	Versuchs Nr. 117/M 165	A. Reither
Kraftstoff: 0,850/15°C	Motoröl: MobilSAE 10W	Kraftstofftemp. 42°C	K.Blatt Nr. 4	

Bundesversuchs-u.Prüfungsanst. f.landw.Maschinen u.Geräte Wieselburg / Austria
Protokoll Nr. 017/79

MOTORKENNFELD

ENGINE PERFORMANCE CHARACTERISTICS

Steyr-Dieseltraktor
Typ 377.00 (8100)
Mot. Typ STEYR WD 611.40



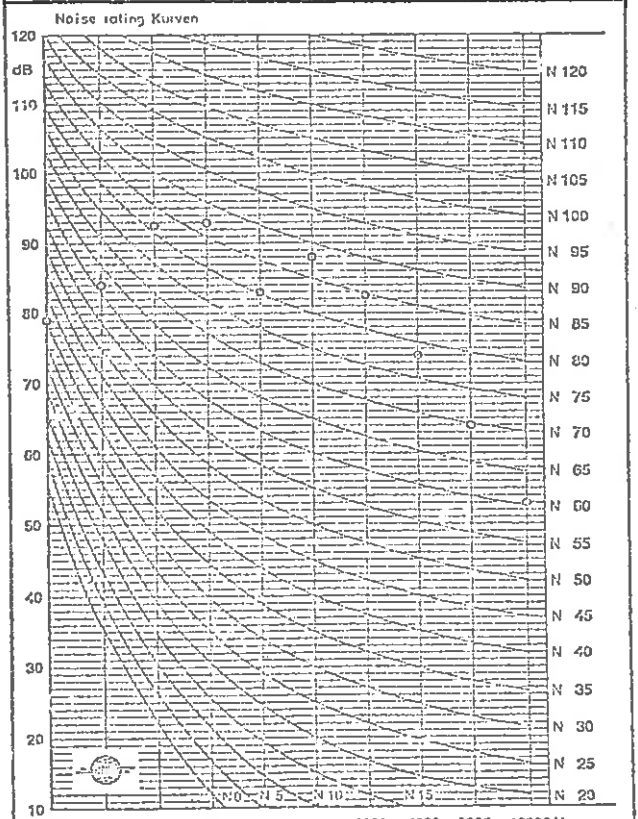
Motor Nr. 997	Luftdruck: 977 mb	Kühltemp. 84°C	Versuchstag: 1978 04 25	Vers. Leitung
Fahrzeug Nr. 377.00-999	Lufttemperatur: 20°C	Öltemperatur: 102°C	Versuchs Nr. 117/M 165	A. Reither
Kraftstoff: 0,850/15°C	Motoröl: MobilSAE10W	Kraftstofftemp. 42°C	K.Blatt Nr. 5	

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)

Bundesversuchs-u.Prüfungsanst. f.landw.Maschinen u.Geräte Wieselburg / Austria	Octave analysis of noise at the drivers ear level	Dieseltractor STEYR 377.00



Gear: 2 Z Travelling speed: 7,33 km/h	Date of test: 19 07 1978	A. Reitter

2. REDUCTION OF POWER DATA TO STANDARD CONDITIONS

According to:

Austrian Standard Ö-Norm V - 5003
German Standard DIN 70 020 Teil 6

$$P_{RED} = P_{OECD} \cdot k; \quad \text{where } k = \frac{1013}{B} \cdot \sqrt{\frac{273 + t}{293}}$$

MAIN POWER TAKE OFF PERFORMANCE (page 12)

Test conditions: Intake air temperature t = 24 °C
Atmospheric pressure B = 986 mbar
Resulting reduction coefficient: k = 1,034

	P_{OECD}	P_{RED}
MAXIMUM POWER	57,1 kW (77,7 mHP)	59,1 kW (80,3 mHP)

B) ENGINE PERFORMANCE (page 23)

Test conditions: Intake air temperature t = 20 °C
Atmospheric pressure B = 977 mbar
Resulting reduction coefficient: k = 1,037

	P_{OECD}	P_{RED}
MAXIMUM POWER	60,7 kW (82,6 mHP)	63,0 kW (85,6 mHP)