O.E.C.D. Report No.: 621

BUNDESVERSUCHS- UND PRÜFUNGSANSTALT
für landwirtschaftliche Maschinen und Geräte,
Wieselburg

Dieseltractor URSUS 1201

Trade name:
URSUS 1201

Manufactured by: Zakłady Mechaniczne „URSUS"
Warszawa, Poland.

Date of approval: 1979 02 21

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:	Zaklady Mechaniczne "URSUS" Warszawa, Poland
Submitted for test by:	A. MOSER, A-4813 Altmünster, Austria
Selected by:	Manufacturer in agreement with BVPA-Wieselburg
Place of running in:	Zaklady Mechaniczne "URSUS"
Duration of running in:	50 hours appr.

SPECIFICATION OF TRACTOR

Tractor:

Make:	ZM URSUS
Model:	1201
Type:	Wheel tractor, rear wheel driven, unit construction
Serial No.:	1347

Engine:

Make:	T.S. Martin
Model:	Z 8601
Type:	4-stroke diesel engine with direct injection
Serial No.:	05367
Cylinders:	6, vertical in line Bore/stroke: 110/120 mm Capacity: 6842 cm^3 Compression ratio: 17 Wet liners
Valves:	Overhead valves
Fuel system:	Capacity of fuel tank: appr. 130 l Fuel feed by piston pump CD1 M-2237 Fuel filter: Make: Zaklady Sprzetu Motoryzacyjnego, Poland Type: Two step filter, felt and paper element Model: FD 1 ORP 2.4 Injection pump: Make: MOTORPAL Type: in line fuel injection pump Model: PP 6M 85 K 1_c - 2469

Fuel system: (cont.)	Manufacturers production setting: 63 mm^3/stroke at 2200 rev/min and full load
	Injection timing: 24° before TDC
	Oil capacity: 0,37 l Recommended oil viscosities: summer SAE 30 HD winter SAE 20 HD
	Changing interval: 400 hours
	Fuel injectors: Make: MOTORPAL Type: injector with multi hole injector nozzle insert Model: injector: VP 81 S 453 a - 2555 insert: DOP 150 S 525 - 1402
	Injection pressure: 157^{+3}_{-} bar
Governor:	MOTORPAL speed governor RV1M 225/1100 = 2501 Mechanically acting, incorporated in injection pump Range of speed: 450 to 2420 rev/min Rated speed: 2200 rev/min
Air cleaner:	Own make Main-cleaner: dry type, changeable element Pre-cleaner: cyclonic type, integrated in main-cleaner Model: VTC - P 500
	Optional (not on tested tractor) wet air filter
Exhaust silencer:	Own make Reflexion type, left side of the engine, mouth upwards
Lubrication system:	Forced lubrication with gear pump, strainer in sump, centrifugal oil filter RDP 3/A in full flow Oil capacity: appr. 19 l Changing interval: 200 hours Cleaning interval of oil filter: 200 hours Recommended oil viscosity: summer SAE 30,MIL-L-2104A/S1 winter SAE 20,MIL-L-2104A/S1
Cooling system:	Double circuit water cooling with centrifugal pump, pump and fan belt driven, 8 blade fan, tubular radiator Thermostat control, cooling water thermometer Coolant capacity: appr. 25 l Overpressure: max. 0,52 bar Joining for warm water heating
Starting system:	Electrically: solenoid engaged type Starter model: R 20 e, 24 V, 4,41 kW

Electrical system:	Voltage: 12 V Generator: PAL, three phase type, 14 V, 35 A, 490 W Batteries: 4; 2 + 2 in series connection, 6 V each, with totally 240 Ah at 20 hours rating; model: 3 SE - 120 Z

Transmission:

Clutches:	Main-clutch: ZBROJOVKA BRNO Single plate dry clutch, 325 mm dia, pedal operated P.t.o. clutch: Own make Wet multiplate clutch, hydraulically engaged, hand lever operated
Gearbox:	Own make, mechanically acting Torque amplifier group - 4 speed change gear - group gear with 2 forward and 1 reverse group Torque amplifier group; speed reduction 1,338 switched by hydraulically engaged brake band on a planetary gear Totally: 16 forward and 8 reverse speeds
Rear axle and final drive:	Own make Rear axle: central driving type; Pinion and bevel gear, lockable bevel gear differential, acting by planetary gears on rear wheels Differential lock: mechanically engaged, pedal operated
Switching aid circuit:	Own oil circuit with gear pump, directly driven by engine, oil supply from gearbox Aid for p.t.o. clutch, torque amplifier group and front wheel drive clutch
Oil capacity:	Common oil case for gearbox, rear axle differential and hydraulic power lift: appr. 50 l Planetary reduction of rear axle final drive: 2 x 6 l Changing interval: 1600 hours Recommended oil: SAE 80 EP

Total ratios and speeds

	Gear No.	Number of engine revolutions for one revolution of driving wheel	*) Nominal travelling speed for rated speed of engine km/h
without torque amplifier group	1 I	260,40	2,452
	2 I	165,21	3,865
	3 I	103,98	6,142
	4 I	73,03	8,744
	1 II	89,26	7,154
	2 II	56,63	11,277
	3 II	35,65	17,913
	4 II	25,04	25,504
with torque amplifier group	1 I	348,35	1,833
	2 I	221,05	2,889
	3 I	139,10	4,591
	4 I	97,18	6,571
	1 II	119,42	5,347
	2 II	75,76	8,429
	3 II	47,57	13,424
	4 II	33,49	19,069
without torque amplifier group reverse	1	190,43	3,353
	2	120,82	5,285
	3	76,04	8,398
	4	53,40	11,959
with torque amplifier group reverse	1	254,75	2,506
	2	161,63	3,951
	3	101,72	6,278
	4	71,45	8,938

*) Calculated with index radius 770 mm

Power take off: At rear of tractor, in median plane, 634 mm above ground
Dimensions (two changeable end-pieces):
540 rev/min: ISO R 500, Type 1 (35 mm, 6 splines)
1000 rev/min: ISO R 500, Type 2 (35 mm, 21 splines)

Power take off: (cont.)

Proportional to engine speed p.t.o.:

Live p.t.o. driven by a mechanical control and a hydraulically engaged wet multiplate clutch, hand lever operated

Method of changing p.t.o. speeds: One of the two p.t.o. shaft end-pieces is located in the rear of tractor, the other one is inserted in the clutch housing. If the two end-pieces are changed from rear of tractor to the clutch housing and contrary, the speed of the p.t.o. shaft is selected (automatically selection of spur gears by the p.t.o. shaft end-pieces in the clutch housing)

Speeds: 540/628 rev/min at 1890/2200 rev/min engine speed
1000/1012 rev/min at 2174/2200 rev/min engine speed

Engine speed resp. p.t.o. speed indication by indicator-instrument

Direction of rotation: clockwise viewed from driving end

Proportional to ground speed p.t.o.:

Both end-pieces can be used

Switchable in all ratios and speeds by mechanical control and hydraulically engaged wet multiplate clutch

Travelling distance for one revolution of p.t.o. shaft: 0,177 m (calculated with index radius 770 mm)

Number of p.t.o. shaft revolutions for 1 revolution of rear wheels: 27,38

Direction of rotation: clockwise in forward gears, anti-clockwise in reverse gears (viewed from driving end)

Belt pulley:

Optional, not on tested tractor

Power lift:

ARCHIMEDES-WROCLAW

Hydraulically acting, with single acting working cylinder and additional working cylinder (bore/stroke: 50/305 mm)

Draft-control, position-control, pressure-control and floating position; lower link sensing

Standard linkage for category II; 2 lift rod/lower link coupling points

Two stage oil pump system consisting of gear pump and piston pump, both pumps working in the same hydraulic circuit, open centre type hydraulic system

max. sustained pressure of gear pump: 157 bar

max. sustained pressure of piston pump: 187 bar

Gear pump directly driven by engine, incorporated in clutch housing, switchable out of gear by a hand lever

Piston pump directly driven by engine

Power lift: (cont.)

ARCHIMEDES-WROCLAW control unit
Oil capacity: common oil case with gearbox: appr. 50 l
Oil tapping: 2 with ARCHIMEDES-WROCLAW control unit for 2 single acting cylinders or 1 double acting cylinder

Optional (not on tested tractor): 3 oil tappings
Capacity of tappings: not specified

Holed drawbar:

Fitted in the clevis of the lower links of the threepoint linkage, category II
Number of holes: 7, diameter: 32 mm, distance: 80 mm
thickness: appr. 72 mm, width: 90 mm

Height above ground:

lift rod/lower link coupling point giving:	Min. lift rod length 530 mm	Max. lift rod length 680 mm
Max. mech. advantage	from 280 to 1039 mm	from 40 to 750 mm
Min. mech. advantage	from 335 to 995 mm	from 0 to 750 mm

Method of changing: by power lift, lift rod and lower link
Distance to rear axle: 1040 mm (lower links horizontally)
Distance relative to p. t. o.: 530 mm

Pull attachement:

Trailer hitch:

Own make
Fork type, only for four wheel trailers
Height above ground: 2 positions; 750/850 mm (tyre index radius 770 mm)
Distance from rear axle: 730/715 mm
Position relative to p. t. o.: 116/216 mm above and 220/205 mm behind
Diameter of coupling pin: 38 mm

Swinging drawbar:

Height above ground: (tyre index radius 770 mm) 462 mm
Distance from rear axle: 62 positions) 920/865 mm
Lateral adjustment (5 positions): sym. 0/80/160 mm
totally 10 positions
Distance relative to p. t. o.: 410/355 mm behind
Diameter of coupling pin: 30 mm
Distance of pivot point from rear axle: -305 mm
Max. vertical load: 5900 N

Towing hitch:

Fork type
Height above ground: 790 mm
Distance from front axle: 655 mm
Diameter of coupling pin: 38 mm

Steering: PILMET-WROCLAW
Circular ball gear steering, hydraulic power assisted
Own oil circuit, gear pump (incorporated in clutch housing) directly driven by engine
Capacity of oil case: appr. 10 l
Pump delivery rate: 20 l/min (at rated engine speed)
Working pressure: 78,5 bar
Operated by steering wheel, acting on front wheels
Changing interval: 800 hours
Recommended oil: SAE 10 W

Brakes: Own make

Service brake: Hydraulically acting dry disc brake, acting on rear wheels, pedal operated

Parking brake: Mechanically acting, same discs as foot brake, operated by hand lever with ratchet

Steering assistance brake: Operated by divided pedal of foot brake

Trailer braking system: Pressure air system, V-belt driven air compressor on left side of the engine, switchable out of gear by hand lever
Storage pressure: 5,7 - 5,9 bar
Working pressure: 5,7 - 5,9 bar
activated by foot brake or hand brake

Wheels:

Front wheels: 2 pneumatics, steering function, diagonal carcass 7,50-20, 6 PR; rim: 5,50 F x 20
Maximum permissible load on each tyre:
8585 N at 2,2 bar inflation pressure
(17170 N at 2,85 bar inflation pressure for frontloader working, with speed limit of 8 km/h)
Track width: 1500 mm (1350, 1650, 1800 mm by sliding axle wheel tread adjustment)

Rear wheels: 2 pneumatics, driving function, radial carcass 18,4/15-34 (R), 8 PR; rim: W 15 L x 34
Maximum permissible load on each tyre:
25 165 N at 1,4 bar inflation pressure
21 780 N at 1,1 bar inflation pressure
Track width: 1500 mm (1725 mm by reversing wheels)

Wheel base: 2695 mm

Lighting:

Unrestricted beam angle of head light in plan view: 92 mrad (5, 3°)

	*) Height above ground of centre mm	Dimension mm	Distance from outside edge of tractor to centre mm
Head lights	1130	145 dia	490
Side lights	1750	70 x 55	190
Rear lights	1410	90 x 80	230
Reflectors	1040	75 dia	140
Backing light	1530	140 dia	230

*) Measured with tyre index radius at rear 770 mm and 430 mm at front

Number of grease points: 19

Driver seat: Own make
Parallelogram construction with pneumatic spring element, adjustable to drivers weight (inflation pressure from 1,47 to 2,45 bar)
Hydraulically damping
Horizontal adjustment range: 100 mm

Cab: FPS KUNOW model 88.000.1017
Rubber block mounted, with seat for driver and passenger, air ventilation and warm water heating

Optional: Acoustic damped cab

CONDITIONS DURING TEST

Tractormass:

Tractor without driver but with tanks full and cab

	Front	Rear	Total
Without ballast	1438 kg	2800 kg	4238 kg
With ballast	1937 kg	3683 kg	5620 kg

Ballastmass:

	Number of weights	Total mass (excluding water)	Water
Front	7 + 7 + 4	437 kg	-
Rear	10	345 kg	600 kg
Additional	-	-	-

Track setting and tyre equipment:
1500 mm at front
1500 mm at rear
Front wheels: 7,50-20, 6 PR
Rear wheels: 18,4/15-34 (R) 8 PR

Overall dimensions:

	Length	Width		Height *)
		max.	min.	
	mm	mm	mm	mm
With ballast	4490	2215	1990	2345/2510
Without ballast	4460	2215	1990	2345/2510

*) measured to top of: exhaust pipe/protective cab

Minimum ground clearance: 420 mm under rear axle
355 mm under swinging drawbar

Fuel and lubricants used in tests:

Fuel:	ELAN Diesel fuel (according to DIN 51601) specific gravity at 15°C: 0,835 kg/l Viscosity at 50°C: 3 mm^2/s (3 cSt) Cetane no.: 46 (ÖNORM C 1104)
Engine oil:	MOBIL OIL SPECIAL SAE 10 W-30 Viscosity at 100°C: 11 mm^2/s (11 cSt)
Transmission oil:	MOBILUBE SAE 80 EP Viscosity at 50°C: 49 mm^2/s (49 cSt)
Hydraulic oil of hydraulic power assisted steering:	MOBIL D.T.E. SAE 10 Viscosity at 50°C: 12 mm^2/s (12 cSt)

COMPULSORY TESTS

1. Main power take-off performance

Date and location of tests: 1978 01 16, Wieselburg/ Austria
Type of dynamometer: SCHENK, eddy current brake, W 780

Main test on: 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					
77,62	2200	628	20,80 24,91	268	3,116
Standard p.t.o. speed					
70,52	1890	540	18,83 22,55	267	3,127
The speed recommended by the manufacturer for drawbar work					
77,62	2200	628	20,80 24,91	268	3,116
PART LOADS Governor hand lever in position giving maximum power					
(i) 85 % of torque at maximum power					
67,10	2239	639	17,71 21,21	264	3,163
(ii) unloaded					
0	2397	684	5,51 6,60	-	-
(iii) 50 % of the load defined in (i)					
34,75	2319	662	11,22 13,44	323	2,585
(iv) maximum power					
77,62	2200	628	20,80 24,91	268	3,116
(v) 25 % of the load defined in (i)					
17,65	2351	671	8,35 10,00	473	1,765
(vi) 75 % of the load defined in (i)					
51,22	2277	650	14,29 17,11	279	2,993

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					
60,72	1917	547	15,48 18,54	255	3,275
(ii) unloaded					
0	2056	587	4,27 5,12	-	-
(iii) 50 % of the load defined in (i)					
31,58	1993	569	9,47 11,34	300	2,784
(iv) maximum power at standard p.t.o. speed					
70,52	1890	540	18,83 22,55	267	3,127
(v) 25 % of the load defined in (i)					
16,01	2018	576	6,82 8,17	426	1,959
(vi) 75 % of the load defined in (i)					
46,48	1955	558	12,36 14,80	266	3,140
STANDARD SPECIFIC FUEL CONSUMPTION: 264/323/255/300 g/kWh					

No load maximum engine speed: 2397 rev/min

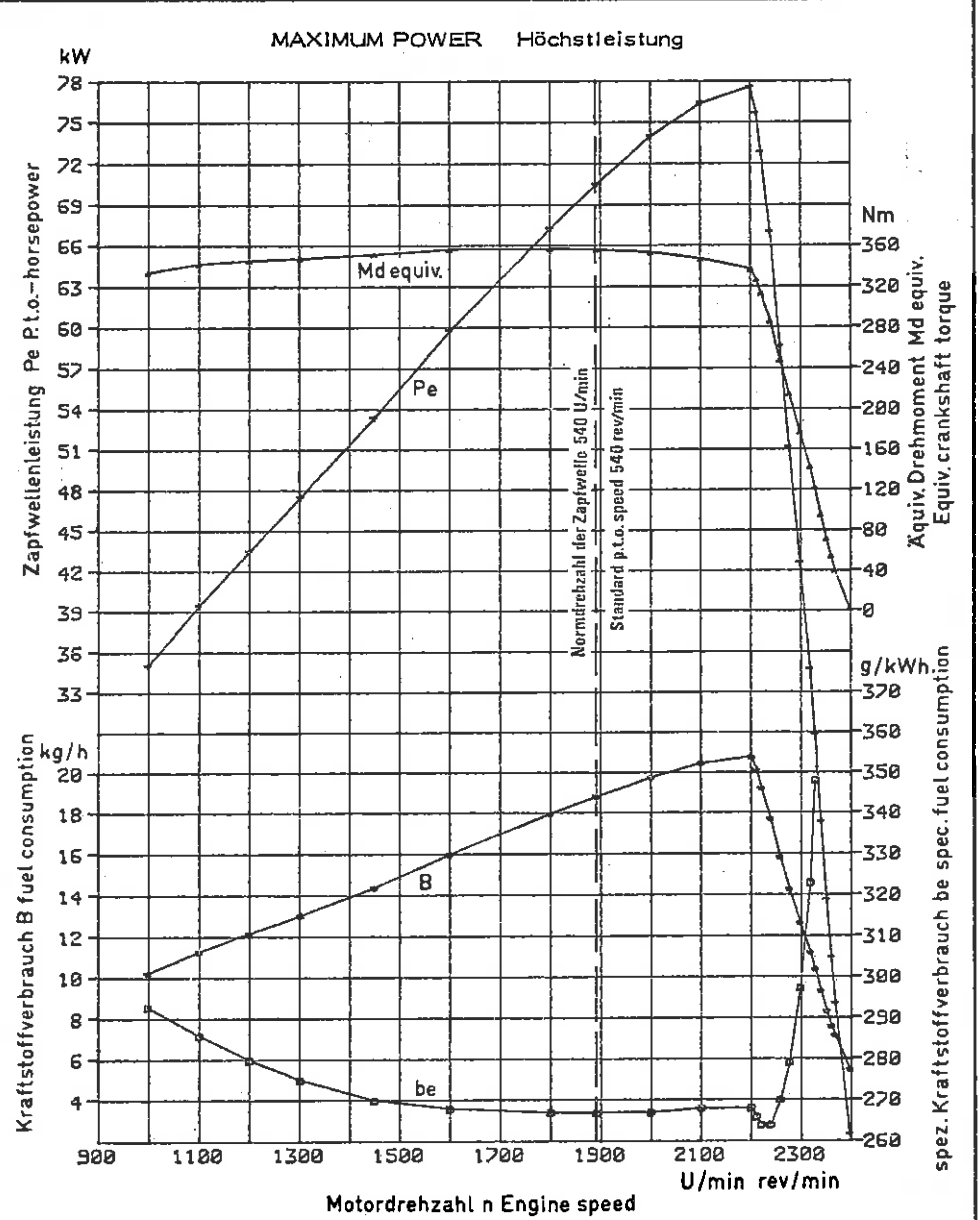
Equivalent crankshaft torque at maximum power: 336,9 Nm at 2200 rev/min of engine

Maximum equivalent crankshaft torque: 357,2 Nm at 1800 rev/min of engine

Mean atmospheric conditions: temperature: 19°C
pressure: 984 mbar
humidity: 78 %

Maximum temperatures: coolant: 85°C
engine oil: 109°C
fuel: 60°C
air intake: 20°C

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u. Geräte Wieselburg / Austria Protokoll Nr. 112/78	**Zapfwellenprüfung P.t.o.–test**	Dieseltraktor URSUS Typ 1201 Mot. Typ Z-8601



Motor Nr. 5367	Luftdruck: 984 mb	Kühltemp. 82°C	Versuchstag: 1978 01 16	Vers. Leitung
Fahrzeug Nr. 1347	Lufttemperatur: 20°C	Öltemperatur: 109°C	Versuchs Nr. 114/Za109	A. Reitler
Kraftstoff: 0,835/15°C	Motoröl: Mobil special	Kraftstofftemp. 60°C	K. Blatt Nr. 1	

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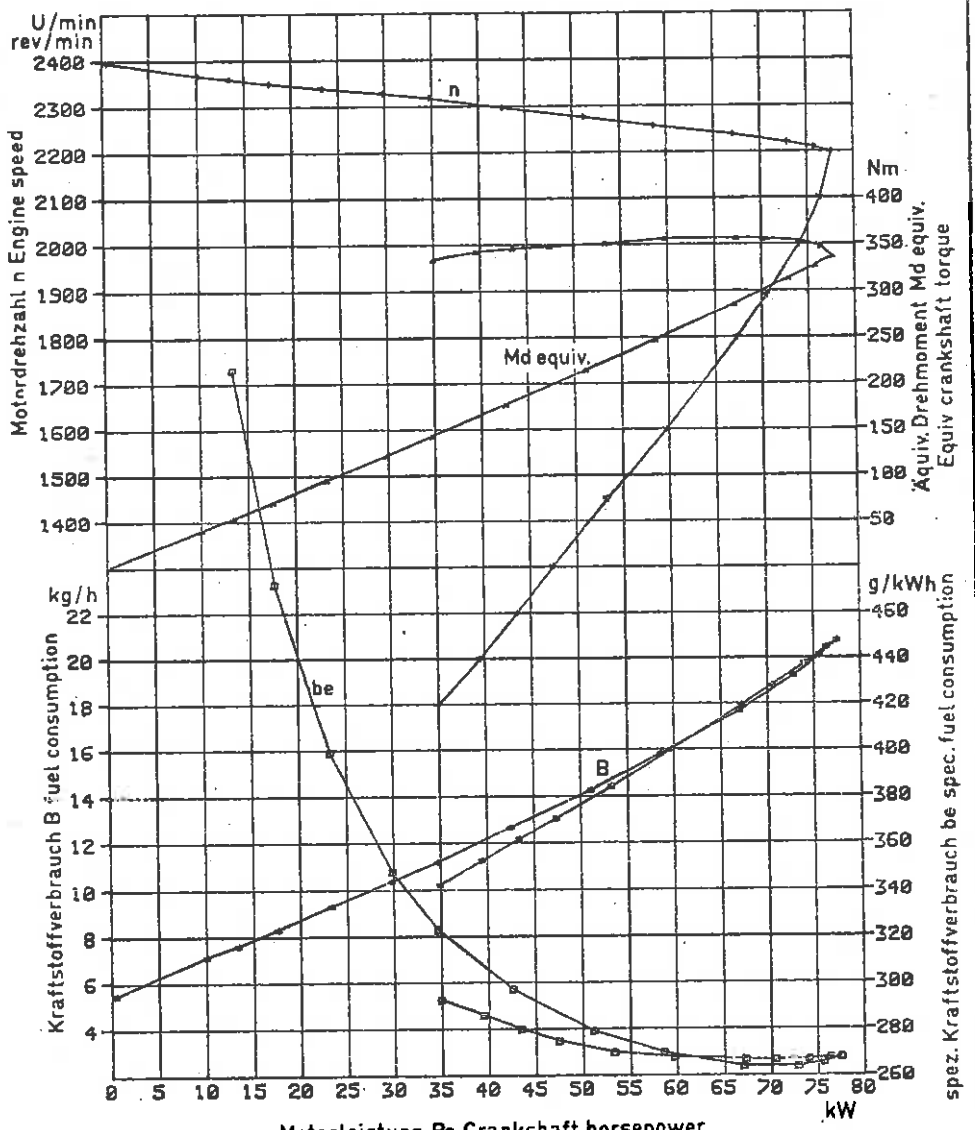
Wieselburg / Austria
Protokoll Nr. 112/78

Zapfwellenprüfung
P.t.o.–test

Dieseltraktor URSUS
Typ 1201
Mot. Typ Z-8601



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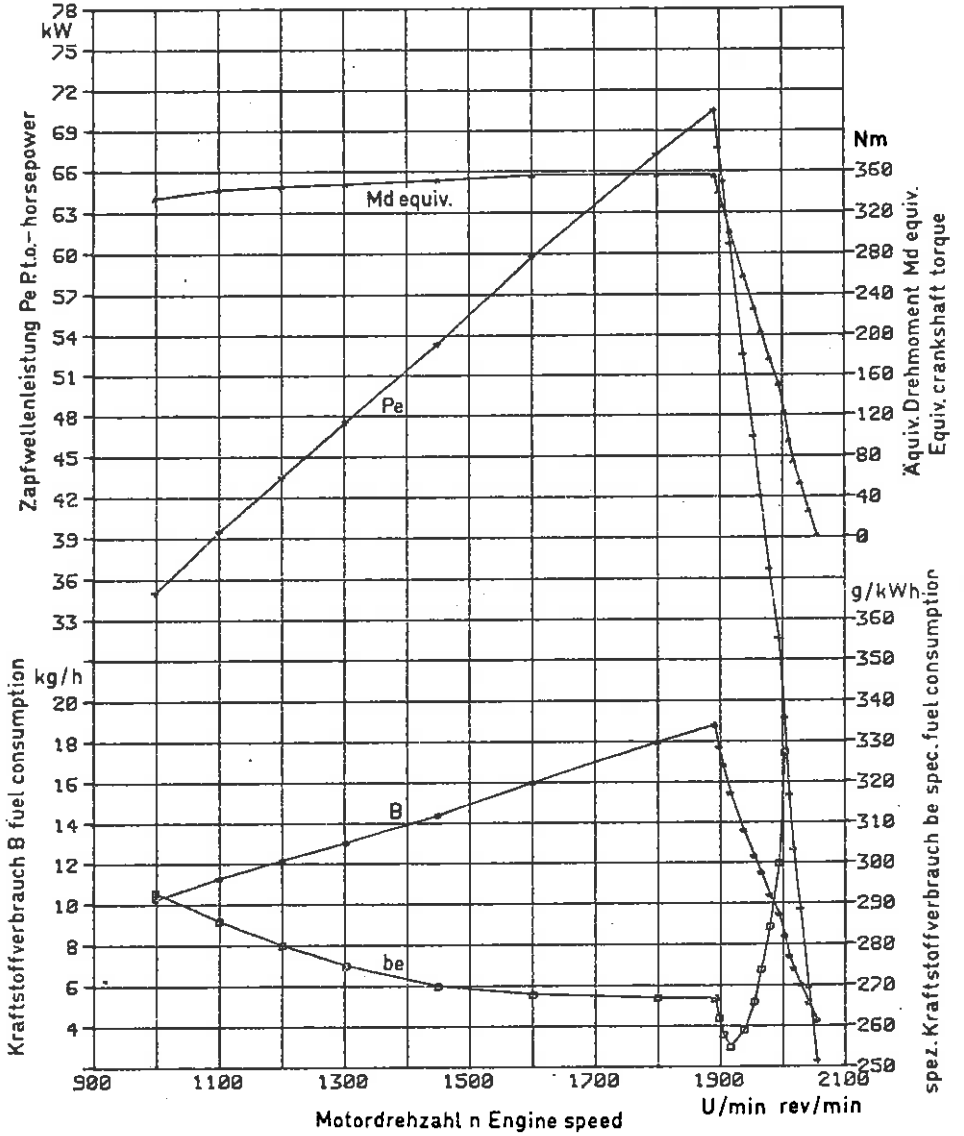
Kraftstoff: 0,835/15°C	Motoröl: Mobil special	Kraftstofftemp. 60°C	K.Blatt Nr. 2	

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u. Geräte Wieselburg / Austria Protokoll Nr. 112/78	**Zapfwellenprüfung P.t.o.-test**	Dieseltraktor URSUS Typ 1201 Mot. Typ Z-8601

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



Motor Nr. 5367	Luftdruck: 984 mb	Kühltemp. 85°C	Versuchstag: 1978 01 16	Vers. Leitung
Fahrzeug Nr. 1347	Lufttemperatur: 20°C	Öltemperatur: 108°C	Versuchs Nr. 114/Za109	A. Reitler
Kraftstoff: 0,835/15°C	Motoröl: Mobil special	Kraftstofftemp. 58°C	K.Blatt Nr. 2a	

2. Drawbar performance

Date of tests: 1978 05 18 to 1978 05 22
Type of track: Concrete
Height of drawbar above ground: 780 mm ballasted, 730 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
(i) Maximum power (ballasted)													
1 I *)	1,663	22,29	48250	2343	15	-	-	45	82	98	17	86	973
1 I	2,207	29,60	48300	2325	15	-	-	45	80	98	17	86	973
2 I *)	2,581	34,61	48270	2310	15	2,448	341	43	82	97	18	86	973
2 I	3,416	45,83	48300	2283	15	2,708	308	44	81	97	18	85	973
3 I *)	4,007	53,75	48300	2254	15	2,757	303	42	82	95	18	84	973
1 II *)	4,619	61,94	48280	2229	15	2,781	300	42	80	95	18	84	973
3 I	5,328	66,20	44730	2202	13,5	2,651	315	41	79	94	19	83	973
4 I *)	5,756	66,76	41750	2200	12,6	2,674	312	40	80	95	19	83	973
1 II	6,354	67,60	38300	2200	11,5	2,708	308	43	80	92	19	83	973
2 II *)	7,628	68,34	32250	2200	9,8	2,739	305	43	80	90	19	80	973
4 I	7,952	68,48	31000	2200	9,6	2,745	304	43	81	92	20	80	973
2 II	10,465	68,17	23450	2201	7,7	2,731	306	42	80	92	20	80	973

*) with torque amplifier group engaged

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													
4 I	8,325	53,75	23250	2255	7,7	2,765	302	46	82	96	22	71	976
(iii) Five-hour-test at pull corresponding to 15 % wheelslip in test (i)													
1 II *)	4,612	61,82	48260	2232	15	2,801	298	50	84	102	19	68	979
(iv) Maximum power (unballasted)													
3 I	5,396	56,09	37420	2253	14,9	-	-	44	79	97	17	63	989
4 I *)	5,720	59,59	37500	2235	15,1	2,738	305	46	81	96	17	62	989
1 II	6,152	64,05	37480	2206	15	2,641	316	45	80	94	17	62	989
2 II *)	7,437	67,14	32500	2200	12,7	2,690	310	44	81	94	17	63	987
4 I	7,776	67,39	31200	2200	12,2	2,702	309	44	80	94	17	63	987
2 II	10,314	68,10	23770	2201	9,7	2,728	306	40	80	92	16	62	987
3 II *)	12,470	67,72	19550	2199	8,3	2,715	307,5	39	80	90	15	61	987
3 II	16,927	68,18	14500	2200	6,7	2,683	311	38	80	89	14	62	987

Total oil consumption during 10 hours duration of tests (ii) and (iii): 117 g/h

*) with torque amplifier group engaged

3. Turning space and turning circle

Wheel equipment front: 7,50-20, 6 PR
rear: 18,4/15-34 (R), 8 PR

Track of wheels front: 1500 mm
rear: 1500 mm

Results	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning space	4,38	4,22	4,87	4,64
Radius of turning circle	4,16	4,00	4,65	4,42

4. Location of centre of gravity

	mm
Height above ground	977
Distance forward from the vertical plane containing the axis of the rear wheels	909
Distance from the median plane, left-hand	0

5. Braking

Date of tests: 1978 05 18 to 1978 05 22
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)
Mass of ballasted tractor: 5695 kg

Cold brakes

		Ballasted	Without ballast
Travelling speed of the tractor	km/h	25	25
(i) Deceleration	m/s^2	3,7	3,0
(ii) Stopping distance	m	6,7	8,3
(iii) Force exerted on the brake pedal	N	824	550
(iv) Force exerted on the brake pedal to achieve a deceleration of 2,5 m/s^2	N	618	451

Brake fade characteristics (hot tests)	Ballasted	Unballasted
Deceleration hot / deceleration cold x 100	97	90
Stopping distance cold / Stopping distance hot x 100	97	87
Force on pedal, cold / Force on pedal, hot x 100	107	97
Force on pedal, cold / force on pedal, hot to achieve a deceleration of 2,5 m/s^2 x 100	121	104

Efficiency of handbrake:
Satisfactory facing up and down slope of 16 %
pull on handbrake: 284 N

6. Measurement of ambient noise

Date of tests: 1978 02 06
Type of sound level meter: 2203 BRÜEL & KJAER
Type of track: Concrete

Results of tests:
Gear: 4 H, without torque amplifier group
Travelling speed before acceleration: 21 km/h
Sound level: 87 dB(A)

7. Noise measurement at the driver's ear level

Date of tests: 1978 05 29
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	Travelling speed	dBA
1 II *)	6,97 km/h	88

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

8. Power lift an hydraulic pump performance

Date and location of tests: 1978 08 16, Wieselburg, Austria
Hydraulic fluid:
Make and type: MOBILUBE SAE 80 EP
Viscosity at 50°C: 49 mm^2/s (49 cSt)
Typ of linkage lock for transport: hydraulically by throttle valve
Opening pressure of the cylinder overpressure relief valve (manufacturer specification): 196 bar

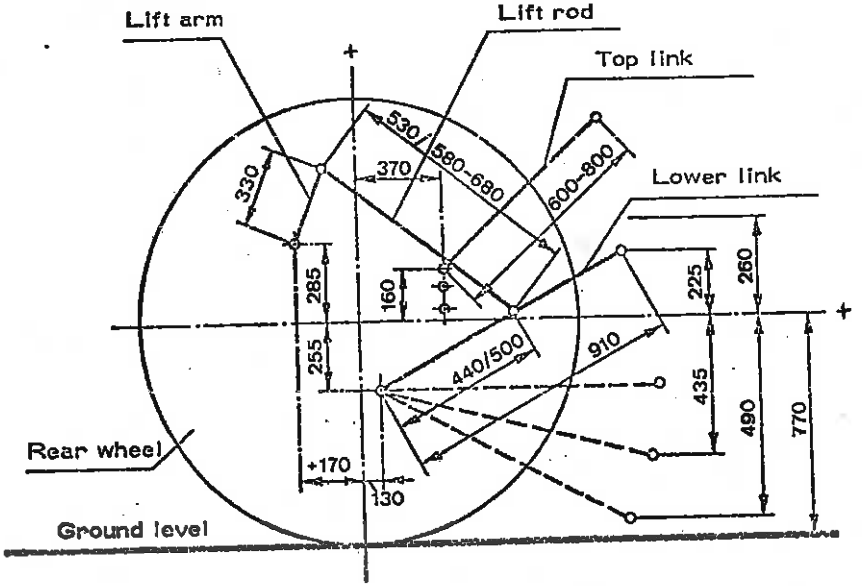
Pump characteristics:

(i) Opening pressure of the relief valve: 195 bar
sustained pressure by the open relief valve: 187 bar

(ii) Pump delivery rate at minimum pressure and rated engine speed: gear pump: 35 l/min
piston pump: 4 l/min

(iii) Gear pump
Pump delivery rate: 32 l/min
delivery pressure: 157 bar
power: 8,37 kW

Piston pump
Pump delivery rate: 4 l/min
delivery pressure: 187 bar
power: 1,24 kW at 187 bar (1,04 kW at 157 bar)



Linkage geometry when connected to the standard frame

		Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view			
Lower links	mm	910	910
Lift arms	mm	330	330
Lift rods	mm	530	530
Top link	mm	672	672
Distance of lift rod connection point from pivot point of lower link	mm	500	440
The following dimensions are given relative to the rear wheel centre line, situated 770 mm above the ground level			
Lower link pivot point	mm	130 behind 255 below	130 behind 255 below
Top link pivot point	mm	370 behind 160 above	370 behind 160 above
Lift arm pivot point	mm	170 behind 285 above	170 behind 285 above
Maximum und minimum height of lower link hitch points	mm	225 above 435 below	260 above 490 below
Height of lower link hitch points locked in transport position	mm	225 above (max. height)	260 above (max. height)

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivoting point mm		-240	-235	-190	-180	-90	0	+100	+200	+300	+400	+480	+515	+615	+670
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				41,88	46,98	48,21	48,31	48,80	49,73	49,54	44,53			
	min. mech. advantage		35,31	37,37	38,65	41,20	42,03	42,47	43,16	44,24	45,02	43,40	41,00		
	Maximum force exerted throughout whole range: 41,88/35,31 kN														
	Oil pressure: 187 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			41,59	42,18	44,92	44,14	42,18	40,41	38,74	36,78	34,58	33,30	27,66	
	min. mech. advantage	36,29	36,68	38,06	38,74	39,33	38,45	37,03	35,65	34,33	32,86	31,29	30,41	26,97	24,42
	Maximum force exerted throughout whole range: 27,66/24,42 kN														
	Oil pressure: 187 bar														

ADDITIONAL TESTS

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

1. OCTAVE-ANALYSIS OF NOISE AT THE DRIVERS EAR LEVEL

Made in the gear with the nominal travelling speed nearest to 7,5 km/h

Date of tests: 1978 05 29

Test track: concrete

Type of sound level meter: 2203 BRÜEL & KJAER

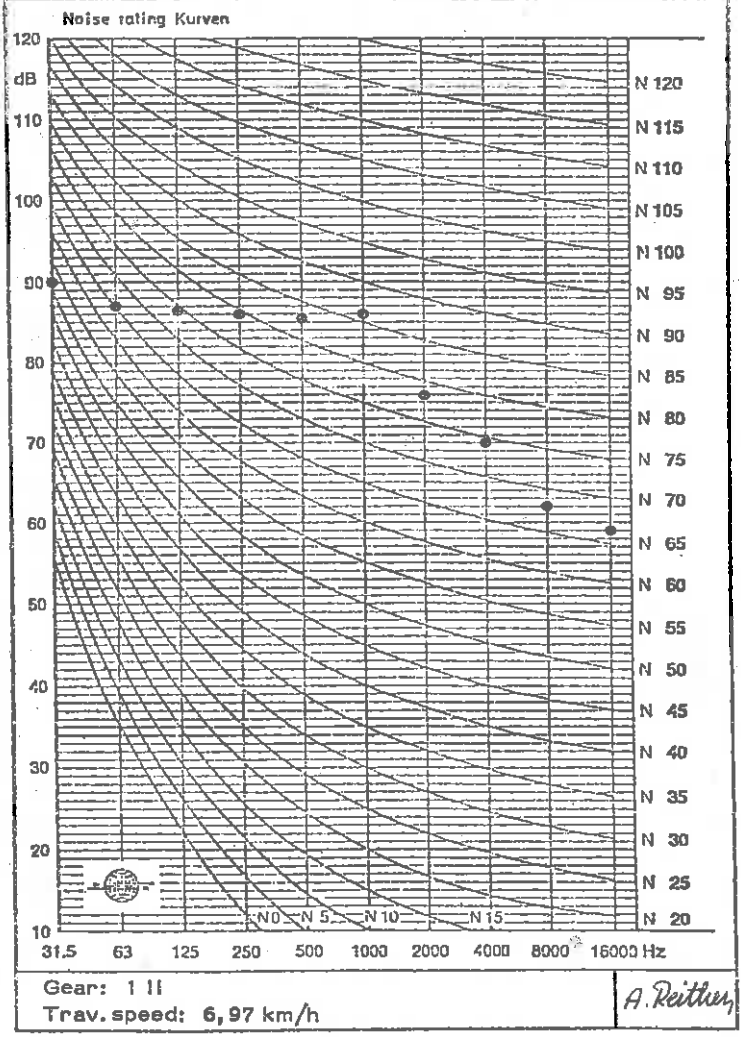
Type of frequence analyser: 1613 BRÜEL & KJAER

Results of tests:

Tractor with cab,

Gear	Effective travelling speed	Sound level	
		dB(A)	Noise rating
I II	6,97 km/h	88	86

Bundesversuchs-u.Prüfungsanst. f.landw.Maschinen u.Geräte Wieselburg / Austria	Octave analysis of noise at the drivers ear level	Dieseltraktor URSUS Typ 1201



Gear: 1 II
Trav. speed: 6,97 km/h

A. Reitler