O.E.C.D. Report No.: 862

BUNDESVERSUCHS - UND PRÜFUNGSANSTALT
für landwirtschaftliche Maschinen und Geräte,
Wieselburg

Dieseltractor STEYR 397.25

Trade name:

STEYR 8150a

Date of approval: 1982 12 22

Date of tests: 1982 06 11

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:	appr. 100 hours

SPECIFICATION OF TRACTOR

Tractor:

Make:	STEYR-DAIMLER-PUCH AG:
Model:	Diesel-Tractor STEYR 397.25 Trade name: STEYR 8150 a
Type:	Wheel tractor, four-wheel driven, unit construction
Serial No.:	397.25 - 04109/275

Engine:

Make:	One make
Model:	WD 612.87
Type:	4 stroke diesel engine with direct injection and exhaust turbo supercharger
Serial No.:	612.87 - 1000
Cylinders:	6, vertical in line Bore/stroke: 108/120 mm Capacity: 6596 cm^3 Compression ratio: 16,5 Cast-in cylinder liners
Valves:	Overhead valves
Fuel system:	Capacity of fuel tank: appr. 168 l Fuel feed by gravity Fuel filter: BOSCH-fuel filter Dual-filter with water-traps, model FJ 630 T 1, with changeable elements Fuel-precleaner: model FJS 11 Injection pump: BOSCH Distributor injection pump model: VE 6/12 F 1100 R 122 or VE R 122 Manufacturers production setting: 65 mm^3/stroke at 1100 rev/min (on the pump) and full load Injection timing: $12^{+0°}_{-2°}$ before TDC at 1 mm pump stroke

Injectors:
BOSCH
Multi hole injection nozzles
Model: DLLA 150 S 456

or

FRIEDMANN & MAIER
Multi hole injection nozzles
Model: D 1 LMK 150/24

Injection pressure: $21{,}2^{+0.5}_{-0}$ MPa (212^{+5}_{-0} bar)

BOSCH
Variable speed governor, mechanically acting, incorporated in the injection pump
Range of speed: 320 to 1100 rev/min (on the pump)
Rated speed: 1100 rev/min (2200 rev/min engine speed)

Supercharger:

GARRET
Exhaust type turbo-supercharger
Model: TO 4 B 49/4656 40-7
Max. supercharge pressure: appr. 740 mbar

Air cleaner:

MANN & HUMMEL
Pre-cleaner: cyclonic type with transparent dust container
Model: 48 096 67 900

Main-cleaner:
MANN & HUMMEL, model: 45 325 75 404

or

PUROLATOR, model: LP 120 S/1
Dry type with changeable element, electrically service indication

Paper insert:
MANN & HUMMEL model: C 20 325/2
or
PUROLATOR model: PM 1709
or
KNECHT model: AG 74

Optional:
Additional safety element
MANN & HUMMEL paper insert: CF 1000
or
PUROLATOR paper insert: AF 3101
or
KNECHT paper insert: SE 120

Service intervals:
Main-cleaner paper insert:
cleaning interval: when control-lamp indication
changing interval: 2000 hours or 1 year

Cyclonic pre-cleaner: cleaning interval 500 hours and visual control

Safety element: changing interval: after 5 main-cleaner paper inserts or if main cleaner was defect

Exhaust silencer: EBERSPÄCHER
Combined absorption-reflexion silencer, left side of the engine, mouth upwards, 2800 mm above ground, 170 mm left of median plane
Model: T 16.47.282.01.0.00

Lubrication: Forced lubrication;
Strainer in sump, gear pump, oilcooler, paper filter in full flow
Oil capacity: appr. 12,5 l
Oil and filter changing interval: 250 hours
Recommended oil viscosity:
summer: SAE 30 or 15 W - 40
winter: SAE 20 or 20 W - 40
specification: MIL-L-2104 C
API - CD

Cooling system: Double circuit water cooling with centrifugal pump, pump and 6 blade fan (dia 510 mm), belt driven
Tubular radiator with longtime frost protection (-20°C)
Thermostat control, cooling water thermometer and sight glass for level indication.
Coolant capacity: appr. 27 l
Overpressure: 50 kPa (0,5 bar)

Starting system: Electrically
BOSCH solenoid engaged starter motor
Model: 0 001 367 010 JF
12 V 3 kW
Cold starting aid: Own make
glow plug in intake pipe

Electrical system: Voltage: 12 V, negative earth
Generator: BOSCH, three phase type, 392 W
Model: 0 120 339 526
G 1 - 14 V 28 A 22
Batteries: lead-acid type
2 in prarallel connection with totally 176 Ah capacity at 20 hours rating

Transmission:

Clutches: Main clutch: FICHTEL & SACHS AG.
Mechanically acting
Single plate dry clutch with torsion antivibrator, 350 mm dia, pedal operated

P.t.o.-clutch: Own make
Wet multiplate clutch, 155 mm dia, hydraulically engaged, hand-switch-operated, with automatic brake for no-load running.

Front wheel drive clutch: Own make
Wet multiplate clutch, mechanically (spring) engaged and hydraulically disengaged, 132 mm dia, hand-switch operated.

Gearbox:	Own make Mechanically acting Model: TW 1200 Group gear with 3 forward and 1 reverse group combined with a synchronised 4 speed change gear Totally 12 forward and 4 reverse speeds Optional: synchronised group gear Optional: Torque amplifier group; speed reduction ratio: 1,25 switched by hydraulically engaged multiplate clutches Crawler gear group, speed reduction 8,44, mechanically engaged Fitted with both groups: Totally 36 forward and 12 reverse speeds
Rear axle and final drive:	Own make, model TW 1200 Rear axle: central driving type; Pinion and bevel gear, lockable bevel gear differential, planetary final gears Differential-lock: mechanically acting dog clutch, hydraulically engaged, hand-switch operated, electric control lamp, not self-disengaging.
Front axle and final drive:	Own make Front axle: central steering axle; Front wheel drive clutch, central propeller shaft, pinion and bevel gear, lockable bevel gear differential, double joints, planetary final gears in wheel hubs. Differential-lock: mechanically acting dog clutch, hydraulically engaged, electric control lamp, not self-disengaging.
Switching aid:	Hydraulically acting Own oil circuit with BOSCH gear pump, directly driven by engine; oil supply common with gearbox, rear axle and hydraulic powerlift. Aid for differential lock switching in rear and front axle, for front wheel drive clutch, p.t.o. clutch and optional equipment (i.e. torque amplifier group) switching. Delivery rate at 1,8 MPa (18 bar) and 2200 rev/min on engine: 41 l/min Working pressure: $1,8^{\pm 0,2}$ MPa ($18^{\pm 2}$ bar) Common oil filter with hydraulic powerlift circuit
Oil capacity:	Common oil case for gearbox, rear axle, rear final drives and hydraulic circuits: appr. 80 l multipurpose oil Changing interval: 1000 hours Recommended oil: Tractor-universal oil SAE 15 W - 30 (STUO) SAE 20 W - 30 (STUO) MIL-L-2104 C, API: CD, SE

Front axle differential: appr. 15 l
Front axle planetary final gears:
each side appr. 1,5 l
Recommended oil for differential und planetary gears:
SAE 90; API GL 5
MIL-L-2105 B or MIL-L-2105 C

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 L	1	207,08	3,28
	2	147,47	4,61
	3	107,06	6,35
	4	76,84	8,85
forward M	1	124,43	5,47
	2	88,60	7,68
	3	64,31	10,58
	4	46,17	14,74
forward S	1	56,98	11,93
	2	40,58	16,76
	3	29,46	23,09
	4	21,15	32,26
reverse R	1	117,86	5,82
	2	83,94	8,17
	3	60,92	11,26
	4	43,74	15,68

*) Calculated with Indexradius 820 mm

Power take off:

Independent p.t.o. with multi disc clutch, hydraulically engaged by switching aid, hand switch operated
At rear of tractor, in median plane, 685 mm above ground, 585 mm behind rear axle

Dimensions:
1000 rev/min: ISO R 500, Type 2 (35 mm, 21 splines)
DIN 9611, Form 2

Optional:
540 rev/min: ISO R 500, Type 1 (35 mm, 6 splines)
DIN 9611, Form 1
Speed selection by changing the p.t.o. end-pieces

Direction of rotation: clockwise, viewed on driving end
Power restriction for p.t.o. 540 rev/min: 48 kW in accordance to DIN 70020

Speeds:
1000/1148 rev/min at 1917/2200 rev/min engine speed

Optional:
540/599 rev/min at 1983/2200 rev/min engine speed

Power lift:

Own make, open center type
Draught control with two stage pull adjustment and lower link sensing, position control, floating position.

"STEYR SIMPLEMATIK" standard linkage, category II/III, double hole lift arms, in accordance to ISO 730 I

BOSCH gear type pump, directly driven by engine, paper filter element, BOSCH control unit
Common oil supply with gearbox and rear axle

Working cylinder: single acting type,
bore/stroke: 105/165 mm

Oil tappings: up to 3 oil circuits with BOSCH control units for single or double acting cylinders

Capacity of tappings: 25 l in stationary mode
10 l in driving mode

Changing interval of filter element: 500 hours

Filter: paper filter element, changeable, for common oil circuit

Optional:
Additional working cylinders for increased power lift performance on each side; bore/stroke: 70/195 mm

Holded drawbar:

Fitted in the clevis of the lower links of the three-point linkage, category II

	Category II
Length	825 mm
Number of holes (with central hole)	7
Diameter	33 mm
Distance	115 mm
Thickness	30 mm
Width	80 mm

Height above ground		Min.lift rod length 715 mm	Max.lift rod length 820 mm
Lift arm	188 mm	from 700 to 1040 mm	from 290 to 855 mm
length:	245 mm	from 585 to 1070 mm	from 165 to 890 mm

Method of changing: by power lift, lift rod and lift arm length
Distance to rear axle: 1160 mm (lower links horizontally)
Distance relative to p.t.o.: 575 mm

Pull attachement:

Trailer hitch:

ROCKINGER
Fork type

	standard model	automatic model
Height above ground:	849 mm	849 mm
Model:	273 U 150 A	248 U 150 BH
Test No.:	∿∿ 4045	∿∿ 4123
Distance from rear axle:	565/620 mm	565/620 mm
Position rel. to p.t.o.: rearwards:	-20/+35 mm	-20/+10 mm
Diameter of coupling pin:	30 mm	30 mm
Max. vertical load:	15 kN	15 kN

Swinging drawbar:

(Optional, not on tested tractor)
Height above ground (middle): 475 mm (820 mm index radius)
Height of fork: 65 mm
Distance from rear axle: 1065/865 mm
Position of pivot point relative to rear axle: 80 mm before
Lateral adjustment: ±225 mm/±185 mm (±12° from median plane)
Diameter of coupling hole: 28 mm

Hitch:

(Optional, not on tested tractor)
Height above ground: 495 mm(820 mm index radius)
Distance from rear axle: 550 mm
Position relative to p.t.o.: 35 mm rearwards
Distance of pivot point relative to rear axle: 0 mm
Diameter of hitch hook: 48 mm

Swinging drawbar

(in combination with hitch):
Height above ground: 430 mm (820 mm index radius)
Distance from rear axle: 940 mm
Position relativ to p.t.o.: 355 mm rearwards
Position of pivot point relative to rear axle: 0 mm

Towing hitch:

Fork type
Height above ground: 825 mm
Distance from front axle: 1015 mm frontwards
Diameter of coupling pin: 35 mm

Steering:

ZF-SCHWÄBISCH GMÜND
Hydrostatic steering, model 8453 or 8493
or
DANFOSS, model OSPC 160 OR
Operated by steering wheel, acting on front wheels
Own oil circuit with filter, gear pump directly driven by engine
Capacity of oil case: 2,8 l
Delivery rate (2100 rev/min enginge): appr. 34 l/min
Working pressure: 10 MPa (100 bar)
Recommended oil: Automatic Transmission-Fluid ATF Dexron D or ATF M 2 C 33 E/F
Changing interval of oil and filter: 2000 hours

Brakes:

GIRLING

Service brake:

Hydraulically activated multi-disc brake in oil bath, 12 acting faces, 200 mm effective diameter, acting on the rear wheels

Optional: 4-wheel brake
In combination with pressure air system
Additional Simplex inner brakes on the front axle. Brake drum: 400 mm dia, 100 mm width
Front axle brakes hydraulically acting, pressure air assisted
Divided hydraulic circuits for front and rear axle
Recommended fluid for hydraulic brake circuits: Brake fluid SAE J 1703e or FMVSS 116 DOT 3

Optional: 4-wheel braked
Automatically engaging of four wheel drive when service brake is activated
Electrically-hydraulically acting on front-wheel drive clutch
Hydraulically multi-disc brake of service brake is acting on front axle too

Parking brake:

Mechanically, acting on wet disc brakes of rear axle, hand operated by handlever with ratchet

Optional: independent of service brake

Steering assistance brake:

Operated by divided pedal of service brake, hydraulically acting on right or left rear wheel, controlled by a valve

Trailer braking system:

Pressure air system: High pressure air system, one or one and two (three) line system, air compressor V-belt driven
Storage pressure: $1{,}8^{+0{,}2}_{-0}$ MPa (18^{+2}_{-0} bar)
Storage volume: 20 l
Working pressure: 0,72 MPa (7,2 bar)

Optional (export to France):
Oil braking system, activated by service brake
Trailer-connection: NFU 16 - 006
100 bar oil pressure at 3 m/s^2 deceleration

Wheels:

Front wheels: 2 pneumatics, steering and driving function, radial carcass
13,6 R 24, PR 8; rim: W 12 x 24
Maximum permissible load on each tyre:
15 150 N (1545 kp) at 2,00 bar inflation pressure
21 210 N (2163 kp) at 2,50 bar inflation pressure
for frontloader working, with speed limit of 8 km/h

Optional:
14,9 - 28 AS, PR 6; rim: W 12 x 28
Maximum permissible load on each tyre:
15 800 N (1610 kp) at 1,4 bar inflation pressure
(22 100 N (2250 kp) at 1,75 bar inflation pressure with speed limit of 8 km/h))

Track width: 1900 mm

Rear wheels: 2 pneumatics, driving function, radial or diagonal carcass
18,4 - 38 AS, PR 8; rim: W 16 x 38
Maximum permissible load on each tyre:
26 630 N (2715 kp) at 1,4 bar inflation pressure
(37 290 N (3800 kp) at 1,75 bar inflation pressure with speed limit of 8 km/h))

Track width: 1810 mm (2072 mm by reversed wheels)

Optional:
20,8 - 38 AS, PR 8, rim: W 18 L x 38
Maximum permissible load on each tyre:
30 313 N (3070 kp) at 1,3 bar inflation pressure

Track width: 1936 mm

Wheel base: 2720 mm

Lighting: Unrestricted beam angle of headlight in plan view 0,0919 mrad (5,27°)

	*) Height above ground of centre mm	Size mm	**) Distance from outside edge of tractor to centre mm
Head lights	995	140 x 125	1030
Side lights	1835	190 x 65	280
Rear lights	1800	190 x 65	240
Reflectors	1490 655	100 x 55 75 dia	185 635

*) with tyre equipment 13,6 R 24 AS and 18,4 - 38 AS
**) with overall width of 2365 mm

Number of grease points: 15 (whole tractor)

Driver seat:

Tested on tractor STEYR 397.25 according to national regulation

BOSTROM
Model: Viking 301 E low back (Prot.Nr. 242/76)
X-lever suspension with torsion springs, adjustable to drivers weight
Hydraulically damping
Horizontal adjustment range: 190 mm
Vertical adjustment range: 80 mm

ISRINGHAUSEN
Model: Derby GI 5000 (Prot.Nr. 243/76)
X-lever construction with 2 tension coil springs, adjustable to drivers weight
Hydraulically damping
Horizontal adjustment range: 155 mm
Vertical adjustment range: 3 steps adjustable, independent in the front and rear

GRAMMER
Model: DS 85 H/90 AR (Prot.Nr. 058/80)
X-lever construction with 2 tension coil springs (force transmission by curve-disc ball bearing)
Hydraulically damping
Horizontal adjustment range: 155 mm
Vertical adjustment range: 60 mm (3 steps adjustable), inclineable left and right 8°

Safety cab:

Own make
"STEYR-Komfortkabine" model 120.11
Rubber mounted sheet construction with roof, windscreen, front cladding and rubber floor, with damping material, with doors and side and rear glasses and with ventilation and heater.
Strength tested according to OECD-Code (identical to Austrian national regulation)
Austrian test report Nr. 065/75
OECD-test report Nr. CS 1225

CONDITIONS DURING TEST

Tractormass:

Tractor without driver but with tanks full and safety cab

	Front	Rear	Total
Without ballast	2144 kg	3404 kg	5548 kg
With ballast	3022 kg	4450 kg	7472 kg

Ballastmass:

	Number of weights	Total mass	Water
Front	1 + 14	668 kg	-
Rear	8 full-pieces +2 cover plates	496 kg	760 kg
Additional	-	-	-

Track setting and tyre equipment:

1900 mm at front
1810 mm at rear
Front wheels: 13,6 R 24 AS, 8 PR; rim: W 12 x 24
Rear wheels: 18,4 - 38 AS, 8 PR; rim: W 16 x 38

Overall dimensions:

	Length	Width	Height
	m	m	m
With ballast	4,980	2,365	2,765*)/2,800**)
Without ballast	4,525	2,365	2,765*)/2,800**)

*) measured on top pf safety cab
**) measured on top of exhaust silencer

Minimum ground clearance: 380 mm under front axle
390 mm under four wheel drive

Fuel and lubricants used in test:

Fuel:	ELAN-Diesel fuel (according to DIN 51601) specific gravity used for volumetric measurement: 0,838 kg/l at 15°C for the whole test Viscosity at 20°C: 5 mm^2/s (5 cSt) Cetan no.: 46
Engine oil:	MOBIL OIL SPECIAL SAE 20 W-40, MIL-L-2104 C Viscosity at 100°C: 15 mm^2/s (15 cSt) Viscosity at 50°C: 64 mm^2/s (64 cSt)
Transmission oil and hydraulic oil:	Tractor universal oil, MIL-L-2105, API-GL 4 ELAN Austromatic HGN Viscosity at 40°C: 52 mm^2/s (52 cSt)

COMPULSORY TESTS

1. Main power take-off performance

Date and location of tests: 1982 06 17, Wieselburg, Austria
Type of dynamometer: SCHENK-Eddy-current brake - W 780

Main test on: ISO R 500, Type 2 (DIN 9611) - 1000 rev/min

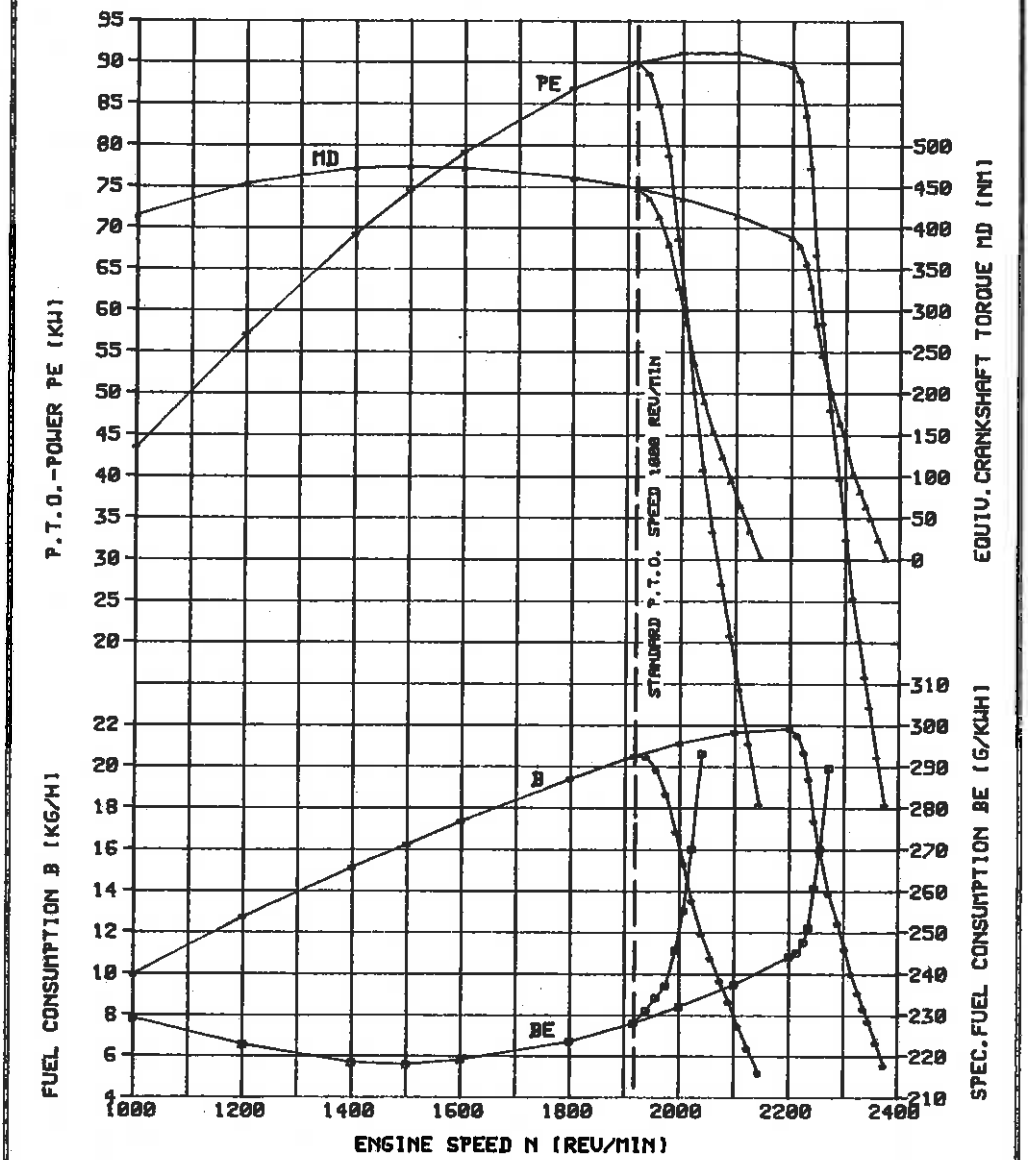
Power	Speed		Fuel consumption			
	engine	p.t.o.	hourly		specific	specific
kW	rev/min	rev/min	kg/h	l/h	g/kWh	kWh/l
MAXIMUM POWER						
Maximum power - 2 hours test						
91,21	2100	1095	21,66	25,85	237,5	3,529
Standard p.t.o. speed						
90,00	1917	1000	20,52	24,49	228	3,675
The speed recommended by the manufacturer for drawbar work						
89,54	2200	1148	21,85	26,07	244	3,434
PART LOADS Governor hand lever in position giving maximum power						
(i) 85 % of torque at maximum power						
77,30	2235	1166	19,40	23,15	251	3,338
(ii) unloaded						
0	2375	1239	5,55	6,63	-	-
(iii) 50 % of the load defined in (i)						
39,64	2289	1194	12,45	14,85	314	2,668
(iv) maximum power						
89,54	2200	1148	21,85	26,07	244	3,434
(v) 25 % of the load defined in (i)						
20,15	2327	1214	9,09	10,85	451	1,857
(vi) 75 % of the load defined in (i)						
58,50	2256	1177	15,80	18,85	270	3,103

Power	Speed		Fuel consumption			
	engine	p.t.o.	hourly		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						
78,80	1975	1030	18,67	22,28	237	3,536
(ii) unloaded						
0	2145	1119	5,20	6,20	-	-
(iii) 50 % of the load defined in (i)						
40,75	2040	1064	11,94	14,25	293	2,859
(iv) maximum power at standard p.t.o. speed						
90,00	1917	1000	20,52	24,49	228	3,675
(v) 25 % of the load defined in (i)						
20,82	2090	1090	8,64	10,31	415	2,019
(vi) 75 % of the load defined in (i)						
60,10	2007	1047	15,32	18,29	255	3,286
STANDARD SPECIFIC FUEL CONSUMPTION: 251/314 - 237/293 g/kWh						

No load maximum engine speed: 2375 rev/min
Equivalent crankshaft torque
at maximum power at rated engine speed: 388,7 Nm
Maximum equivalent crankshaft torque: 474,4 Nm at 1500 rev/min of engine

Mean atmospheric conditions:	temperature:	16°C
	pressure:	986 mbar
	humidity:	72 %
Maximum temperatures:	coolant:	84°C
	engine oil:	118°C
	fuel:	64°C
	air intake:	24°C

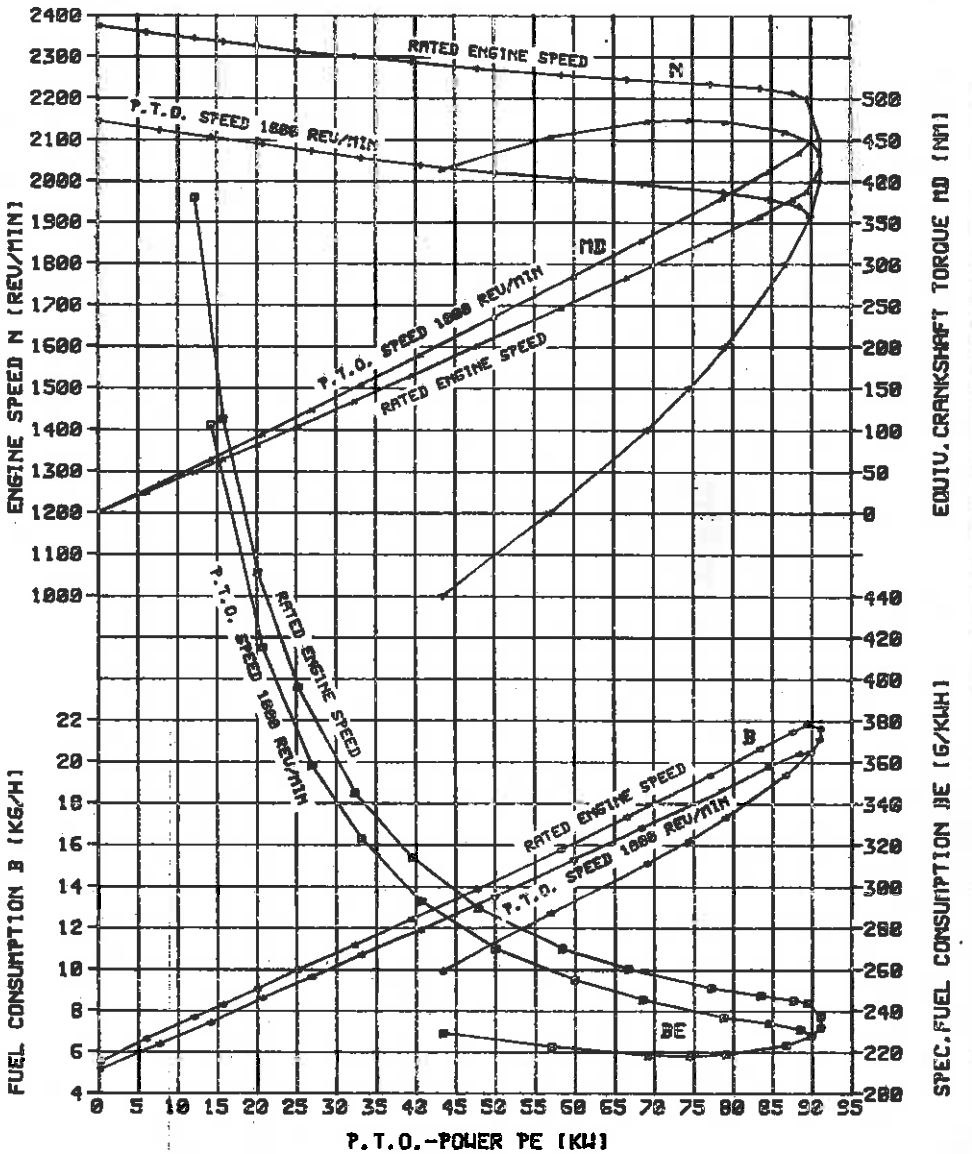
BUNDESVERSUCHS-U.PRUEFUNGSANST. FUER LANDW.MASCHINEN U.GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 153/82	P.T.O.-TEST	STEYR TYP 8150 A MOT.TYP WD 612.87



ENGINE SER.NR.: 612.87-1800	ATM.PRESSURE : 986 MBAR	FUEL TEMP.: 64 C	SIGNATURE
TRAKTOR SER.NR.: 397.25-84189-279	AIR TEMPER. : 16 C	D.OF TESTS: 1982-06-11	
FUEL : 0.838 KG/L BEI 15	COOLANT TEMP.: 84 C	TEST NO. : 136/M 177	
ENGINE OIL : MOBIL SPEZ. 10W-30	OIL TEMP. : 118 C	CURVES NO.: 1	REITHER

DOK.: 81A0846-DL003,PR0050,PR026-22

BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERRETE WIESELBURG/ERLAUF, AUSTRIA PROT. NR.: 153/82	P.T.O.-TEST	STEYR TYP 8150 A MOT. TYP WD 612.87



ENGINE SER.NR.: 612.87-1000	ATM. PRESSURE : 986 MBAR	FUEL TEMP.: 64 C	SIGNATURE
TRAKTOR SER.NR.: 357.25-84189+275	AIR TEMPER. : 16 C	D.OF TESTS: 1982-06-11	
FUEL : 0.830 KG/L DEI 15	COOLANT TEMP.: 84 C	TEST NO. : 136/M 177	
ENGINE OIL : MOBIL SPEZ. 10W-30	OIL TEMP. : 110 C	CURVES NO.: 2	REITHER

DOK.:B100846-DL003:MK0858:MK028-22

2. Drawbar performance

Date of tests: 1982 06 22 and 1982 07 29
Type of track: Concrete
Height of drawbar above ground: 520 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	N	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	mbar
(i) Maximum power (ballasted) tyre inflation pressure in the front 2,4 bar, in the rear 1,4 bar													
L 1	2,948	49,55	60505	2252	15	2,492	336	56	80	107	23	82	988
L 2	4,088	68,72	60510	2224	15	2,770	302,5	56	81	109	24	80	988
M 1	4,976	73,81	53398	2200	11,8	2,826	296,5	56	80	110	23	80	988
L 3	5,927	75,89	46096	2200	9,6	2,905	288,5	57	81	110	24	79	988
M 2	7,320	77,27	38002	2200	7,6	2,958	283,5	57	81	111	22	78	988
L 4	8,547	77,42	32606	2200	6,4	2,964	282,5	57	81	112	22	78	988
M 3	10,345	76,81	26728	2200	5,2	2,941	285	57	80	110	23	79	988
S 1	11,763	75,89	23226	2200	4,5	2,905	288,5	57	80	111	23	80	988
M 4	14,669	73,40	18014	2200	3,5	2,810	298	57	81	111	24	78	988
S 2	16,793	70,00	15006	2200	2,9	2,680	312,5	56	80	110	23	78	988

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													
L 4	8,842	60,06	24456	2242	4,6	2,770	302,5	61	80	113	24	66	988
(iii) Five-hour-test at pull corresponding to 15 % wheelslip in test (i)													
L 2	4,059	68,27	60545	2224	15	2,757	304	62	83	118	26	60	989
(iv) Maximum power (unballasted) tyre inflation pressure in the front 1,1 bar, in the rear 1,1 bar													
M 1	4,815	64,23	48021	2231	15	-	-	55	81	107	22	80	988
L 3	5,518	73,57	48002	2200	15	2,816	297,5	53	80	104	22	80	988
M 2	7,076	76,25	38794	2200	9,8	2,919	287	54	81	105	23	81	988
L 4	8,320	77,03	33330	2200	8,0	2,949	284	54	82	107	23	77	988
M 3	10,126	77,12	27417	2200	6,3	2,952	284	55	81	108	22	76	988
S 1	11,538	76,50	23869	2200	5,4	2,929	286	55	81	108	22	76	988
M 4	14,420	74,83	18680	2200	4,2	2,865	292,5	56	81	109	23	75	988
S 2	16,525	72,99	15901	2200	3,5	2,794	300	57	83	109	22	73	988

Total oil consumption during 10 hours duration of tests (ii) and (iii): 128 g/h

3. Turning space and turning circle

Wheel equipment front: 13,6 R 24 AS, PR 8
rear: 18,4 - 38 AS, PR 8
Track of wheels front: 1900 mm
rear: 1810 mm

Results *)	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning space	4,50/4,90	4,52/5,02	5,97/5,54	5,99/5,47
Radius of turning circle	4,27/4,67	4,30/4,80	5,75/5,32	5,77/5,25

*) four wheel drive switched: ON/OFF

4. Location of centre of gravity

	mm
Height above ground	1030
Distance forward from the vertical plane containing the axis of the rear wheels	1045
Distance from the median plane, left side	10

5. Braking

Date of tests: 27.7.1982
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)
Tractor masses during brake tests (with driver):

	Front kg	Rear kg	Total kg
Ballasted	3038	4509	7547
Unballasted	2160	3463	5623

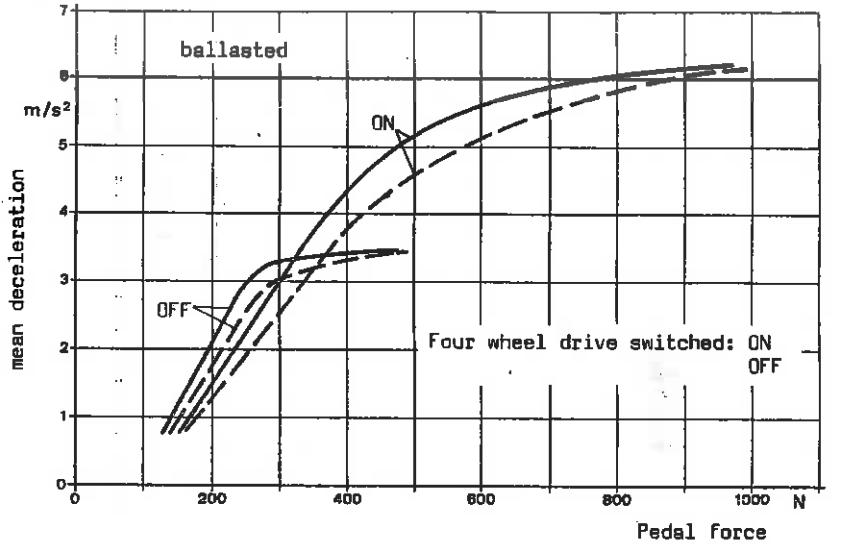
Tyre inflation pressure:
ballasted: in front: 2,4 bar, in rear: 1,4 bar
unballasted: in front: 1,1 bar, in rear: 1,1 bar

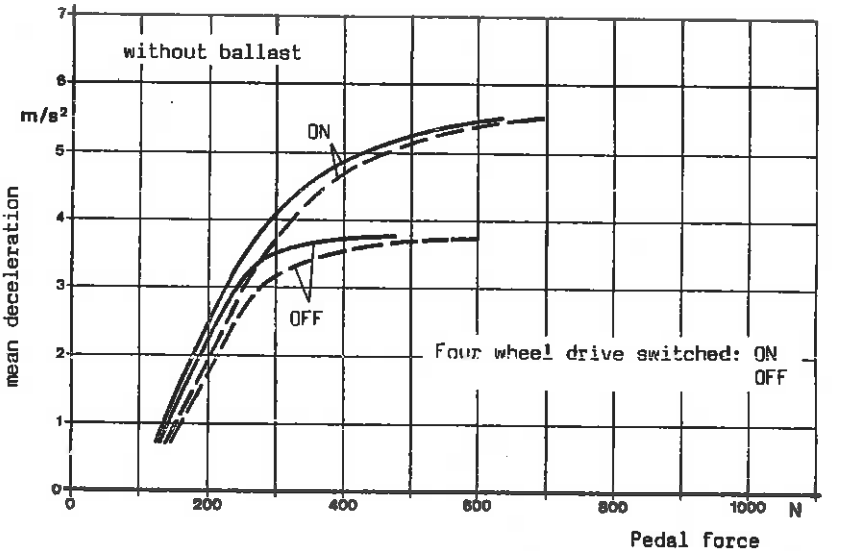
A) Service brake

Speed before application of brakes: 34,5 km/h
The tractor brakes were heated by towing of the tractor for 1 km

Normal version, on tested tractor:
Brakes: hydraulically activated wet multi-disc brakes in the rear axle
Four wheel drive switched on and off

Type-0-test (cold brakes) ———— , Type-I(fade) test — — —

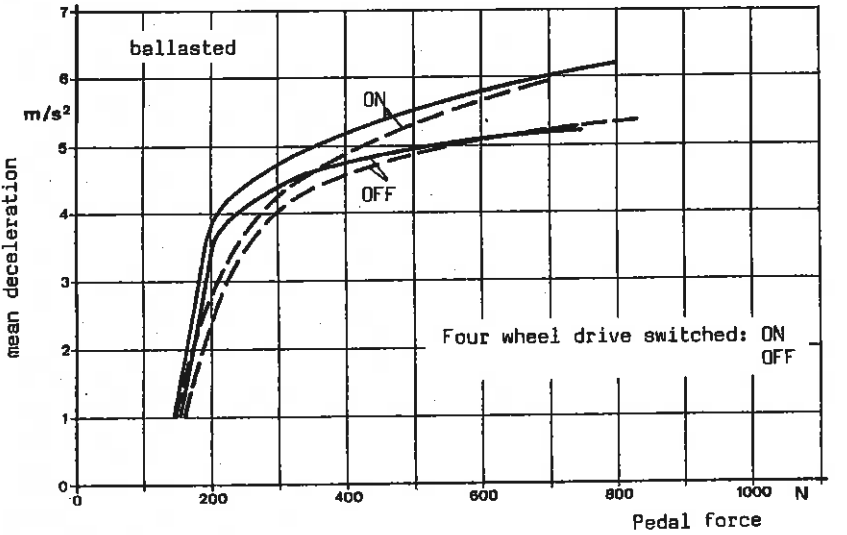


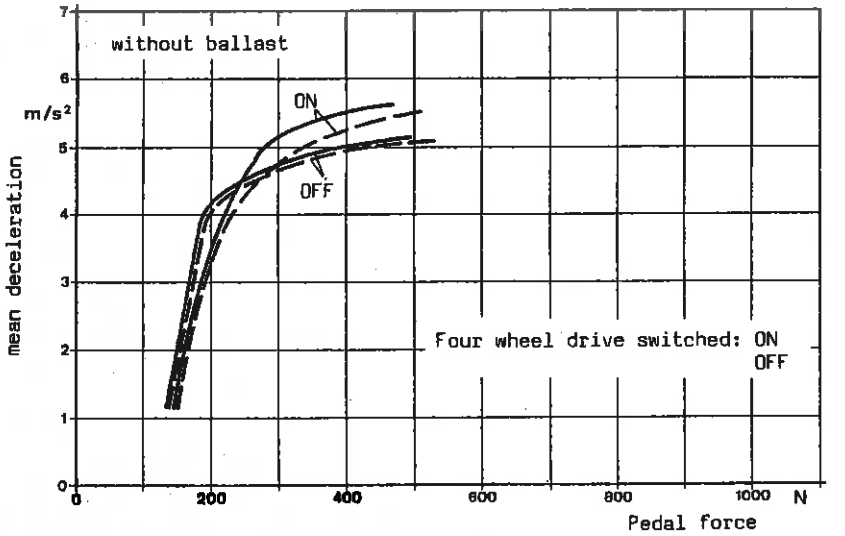


Optional version of service brake:
(combined with pressure air system)

Rear axle: hydraulically activated wet multi-disc brakes
Front axle: drum brakes, hydraulically activated, pressure air assisted

Type-0-test (cold brakes) ———————— , Type-I(fade) test — — — —

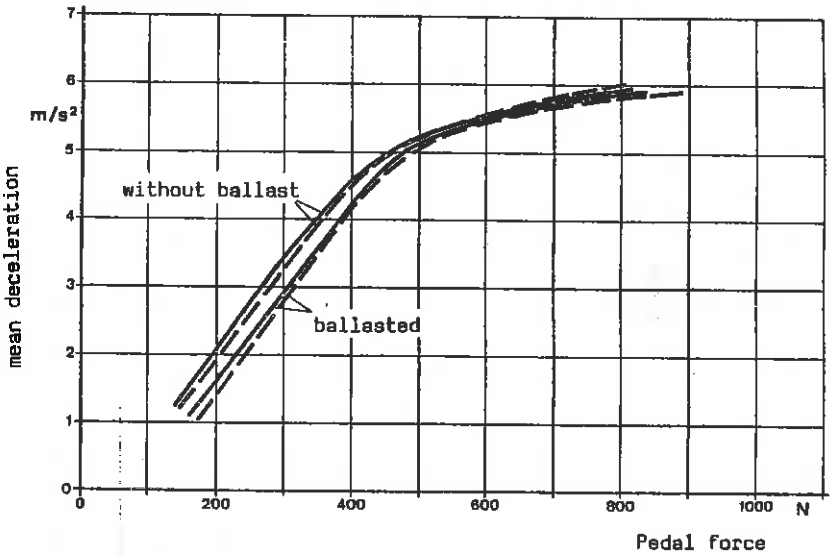




Optional version of service brake:

Rear axle: hydraulically activated wet multi-disc brakes
Front axle: Braking with the front axle propeller shaft by switching the four-wheel-drive clutch when the service brake is operated.
Electrically-hydraulically acting
Front axle is connected with the rear axle (brakes) when there is a failure in the hydraulic or (resp. and) electric circuit

Type-0-test (cold brakes) ———————— , Type-I(fade) test — — —



B) Parking brake

	Ballasted tractor on 18 %-slope		Unballasted tractor on 12 %-slope with trailer of 3000 kg	
	up	down	up	down
Braking device control force	225 N	245 N	175 N	175 N

6. Measurement of ambient noise level

Date of tests: 1982 06 22
Type of sound level meter: 2203 BRÜEL & KJAER
Type of track: Concrete

Results of tests:
Gear: S 4
Travelling speed before acceleration: 25,7 km/h
Sound level: 83,5 dB(A)

7. Noise measurement at the driver's ear

Date of tests: 1982 06 22
Type of sound level meter: 2203 BRÜEL & KJAER
Type of track: Concrete
Safety cab with all openings closed

Results of tests:

Gear	Drawbar pull at which the tractor develops the max. sound level	Measured travelling speed	Sound level
-	N	km/h	dB(A)
L 1	28380	3,81	81
L 2	39625	4,30	80,5
L 3	19855	6,49	80
L 4	21125	8,84	81
M 1	24450	5,50	81,5
M 2 *)	20313	7,40	80,5
M 2	light load (4220)	8,23	79,0
M 3	8420	11,10	80,5
M 4	4461	15,53	80,5
S 1	12300	10,11	80,5
S 2	5665	18,59	80
S 3	5740	25,22	81,5
S 4	3398	35,00	81,5
S 4	light load	35,00	81,5

*) The M 2 gear corresponds to the nominal travelling speed nearest to 7,5 km/h.

8. Power lift and hydraulic pump performance

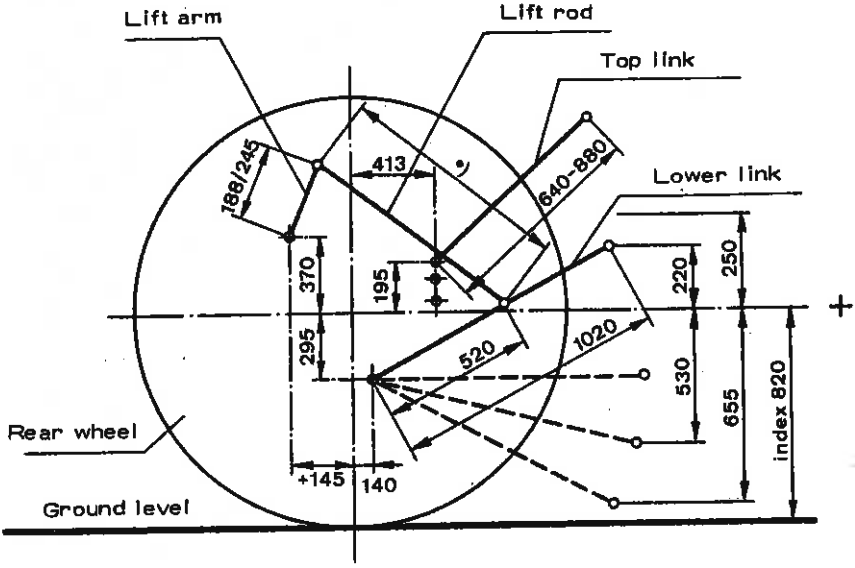
Date and location of tests: 1982 07 07, Wieselburg, Austria
Hydraulic fluid:
Make and type: SHELL Tellus 33, SAE 20 W
Viscositiy at 50°C: 40 mm^2/s (40 cSt)
Type of linkage lock for transport: hydraulically by throttle valve
Sustained pressure of the cylinder over pressure relief valve (manufacturer specification): 24,5 MPa (245 bar)

Pump characteristics:

(i) Sustained pressure of the relief valve: 199 bar
Opening pressure of the relief valve: 184 bar

(ii) Pump delivery rate at minimum pressure and rated engine speed: 42 l/min

(iii) Pump delivery rate: 41 l/min
Pressure of hydraulic power calculation (90 % of sustained pressure of relief valve): 17,9 MPa (179 bar)
Hydraulic power: 12,23 kW



*) basis adjustment: both lift rods 715 mm
left lift rod: from 715 mm to 820 mm adjustable by thread
right lift rod: from 695 mm to 855 mm adjustable by thread with handle-ratchet

Linkage geometry when connected to the standard frame (mast height 560 mm)

Projected length in side view			Maximum mechanical advantage	Minimum mechanical advantage
Lower links		mm	1030	1030
Lift arms		mm	188	245
Lift rods		mm	773	773
Top link		mm	725 (560 mm mast height)	725 (560 mm mast height)
Distance of lift rod connection point from pivot point of lower link		mm	520	520
This dimensions are given relative to the rear wheel centre line, mm above the ground level	Lower link pivot point	mm	140 behind 295 below	140 behind 295 below
	Top link pivot point	mm	413 behind 195 above	413 behind 195 above
	Lift arm pivot point	mm	145 behind 370 above	145 behind 370 above
	Maximum and minimum height of lower link hitch points	mm	129 above 416 below	160 above 535 below
	Height of lower link hitch points locked in transport position	mm	from 129 above to 416 below	from 160 above to 535 below

	Moment about rear axle *) kNm		Max. tilt angle of mast over range of lift degrees	
	max.mech.advantage	min.mech.advantage	max.mech.advantage	min.mech.advantage
At hitch points	38,5	31,2 (68,7 **)	-	-
On the frame	55,9	42,6 (88,5 **)	9° (from -3° to 0° and to -9°)	10° (from -3° to 0° and to -10°)

*) calculated with the hydraulic power of 90 % of sustained oil pressure
**) with additional working cylinders

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivoting point mm		-240	-200	-150	-110	-50	0	+75	+125	+175	+225	+275	+310	+360	+410
Lifting force at the hitch-points kN (Values for the pressure, calculated with 90 % of sustained oil pressure)	max. mech. advantage				33,2	35,8	37,8	39,6	40,4	40,8	41,1	41,4	41,9	43,3	45,6
	min. mech. advantage	26,9	28,0 (59,2)	29,3 (61,7)	30,2 (63,0)	31,5 (64,2)	32,2 (65,00)	32,6 (65,2)	32,8 (65,2)	33,0 (65,2)	33,1 (65,2)	33,4 (65,2)	33,5 (65,4)	33,8 (66,1)	34,1
	Maximum force exerted through whole range: 33,2 kN / 26,9 kN /59,2 kN (3385 kp/2740 kp/6035 kp)														
	Calculated oil pressure: 17,9 MPa (179 bar)														
Lifting force at the standard frame 460 mm mast height, 610 mm behind lower links hitch-point kN (Values for the pressure, calculated with 90 % of sustained oil pressure)	max. mech. advantage				31,6	32,1	33,2	33,5	33,5	33,4	32,7	32,1	31,9	31,6	31,9
	min. mech. advantage	25,0 (56,8)	25,8 (57,6)	26,4 (57,8)	26,8 (57,6)	27,0 (57,3)	27,0 (56,9)	26,8 (55,9)	26,5 (55,0)	26,0 (54,0)	25,4 (52,9)	24,6 (51,6)	24,1 (50,9)	(50,0)	
	Maximum force exerted through whole range: 31,6 kN/24,1 kN/50,0 kN (3220 kp/2460 kp/5100 kp)														
	Calculated oil pressure: 17,9 MPa (179 bar)														

() when fitted with additional working cylinders

OPTIONAL TEST

9. Engine performance

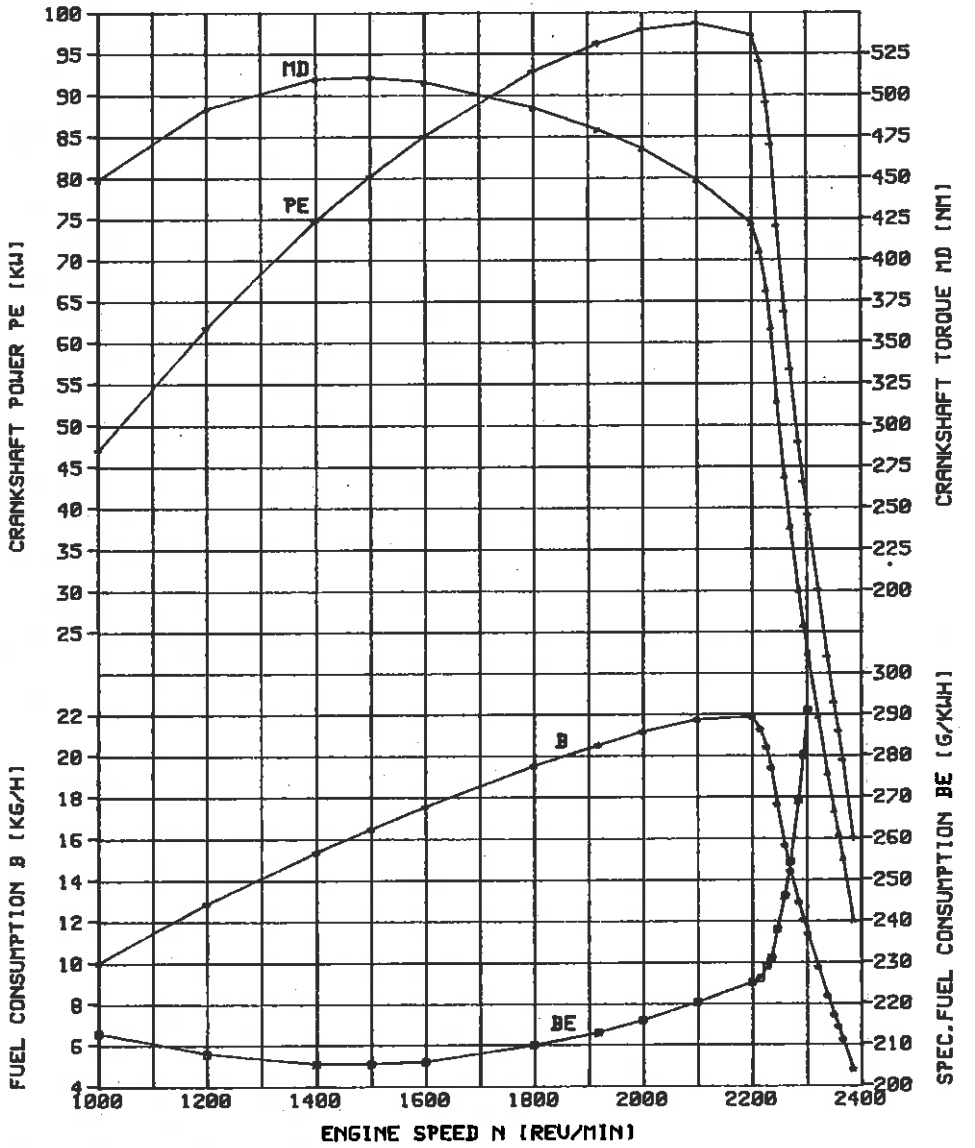
Date and location of test: 1982 06 11, Wieselburg, Austria
Type of dynamometer: SCHENK eddy-current brake W 780

Power	Engine speed	Fuel consumption			
		hourly		specific	specific
kW	rev/min	kg/h	(l/h)	g/kWh	kWh/l
Maximum power - 2 hours test					
98,70	2100	21,74	25,94	220,5	3,804
Standard p.t.o. speed (1000 rev/min)					
96,28	1918	20,51	24,47	213	3,934
The speed recommended by the manufacturer for drawbar work					
97,24	2200	21,88	26,11	225	3,724
Part loads					
(i) 85 % of torque at maximum power					
84,04	2235	19,41	23,16	231	3,627
(ii) unloaded					
0	2385	4,80	5,73	-	-
(iii) 50 % of the load defined in (i)					
43,13	2385	12,98	14,41	280	2,993
(iv) maximum power					
97,24	2200	21,88	26,11	225	3,724
(v) 25 % of the load defined in (i)					
21,98	2338	8,38	10,00	381	2,199
(vi) 75 % of the load defined in (i)					
63,73	2260	15,68	18,71	246	3,406

Optimum fuel consumption: 205,5 g/kWh at 80,25 kW and 1500 rev/min
No load maximum engine speed: 2385 rev/min
Torque at maximum power at rated engine speed: 422 Nm
Maximum torque: 510,9 Nm at 1500 rev/min of engine

Mean atmospheric conditions:	**temperature:**	20°C
	pressure:	988 mbar
	relative humidity:	78 %
Maximum temperatures:	**coolant:**	85°C
	engine oil:	113°C
	fuel:	49°C
	engine air intake:	27°C

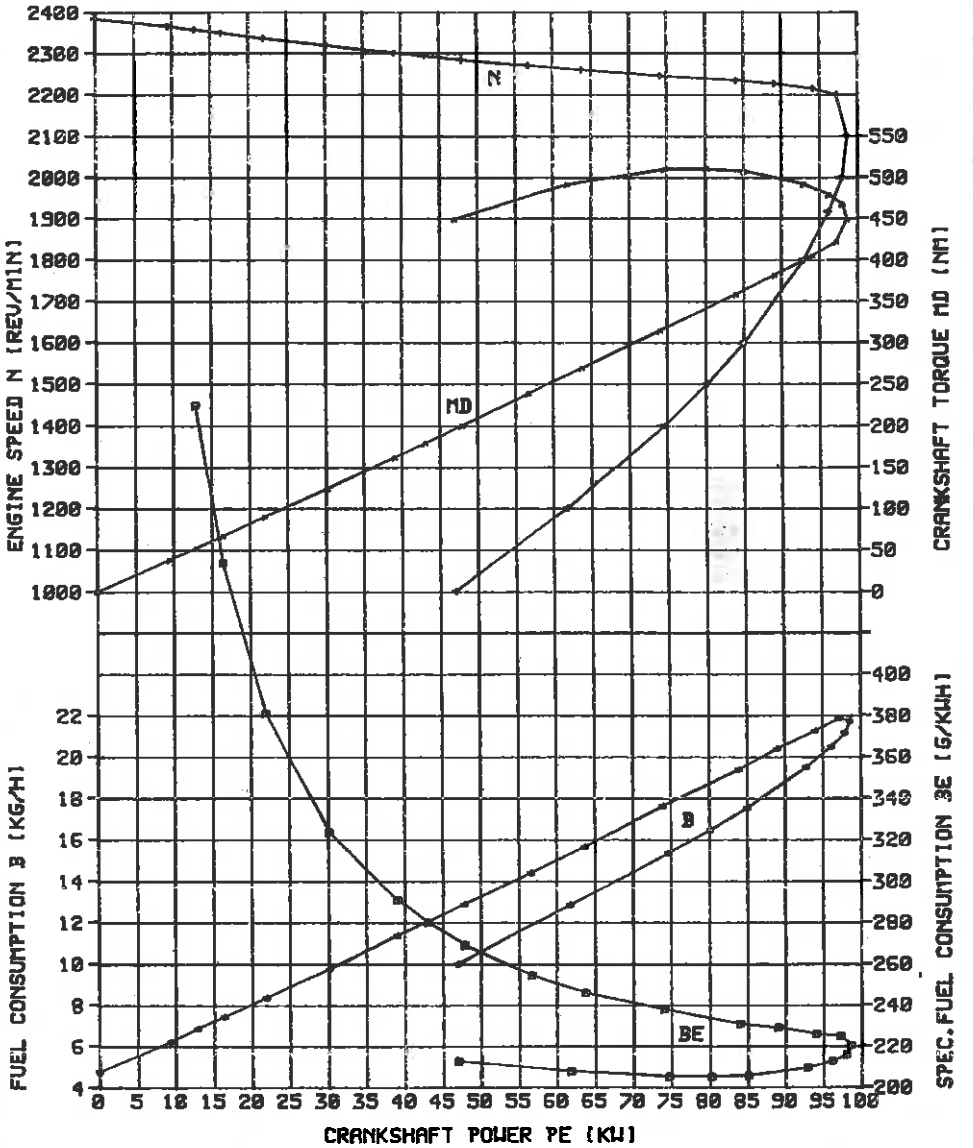
BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 153/82	ENGINE-TEST	STEYR TYP 8150 A MOT.TYP WD 612.87



ENGINE SER.NR.: 612.87-1000	ATM.PRESSURE : 988 MBAR	FUEL TEMP.: 49 C	SIGNATURE
TRAKTOR SER.NR.: 337.25-04189-275	AIR TEMPER. : 20 C	D.OF TESTS: 1982-06-11	
FUEL : 0.838 KG/L BEI 15	COOLANT TEMP.: 85 C	TEST NO. : 136/M 177	
ENGINE OIL : MOBIL SPEZ. 10W-30	OIL TEMP. : 113 C	CURVES NO.: 3	REITHER

DOK.:0100846-DL003,MK0858,MK028-KU

BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 153/82	ENGINE-TEST	STEYR TYP 8150 A MOT.TYP WD 612.87

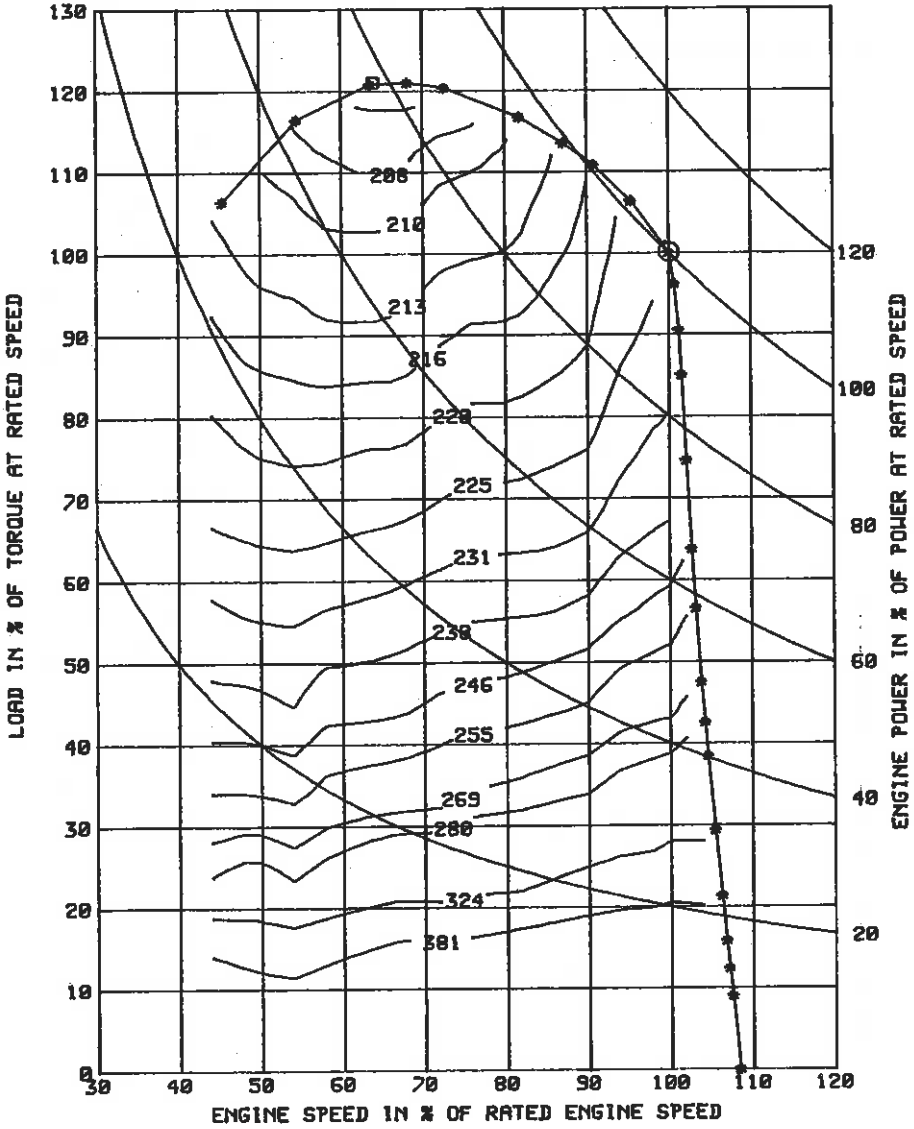


ENGINE SER.NR.: 612.87-1800	ATM.PRESSURE : 988 MBAR	FUEL TEMP.: 49 C	SIGNATURE
TRAKTOR SER.NR.: 397.25-84183-275	AIR TEMPER. : 28 C	D.OF TEST8: 1982-06-11	
FUEL : 0.838 KG/L BEI 15	COOLANT TEMP.: 85 C	TEST NO. : 136/M 177	
ENGINE OIL : MOBIL SPEZ. 10W-30	OIL TEMP. : 113 C	CURVES NO.: 4	REITMER

BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 153/82	ENGINE PERFORMANCE CHARACTERISTICS	STEYR TYP 8150 A MOT.TYP WD 612.87

□ ....MIN.FUEL CONS. 205.40 G/KWH AT N = 1408. REV/MIN, MD = 510.72 NM, P = 75.3 KW

⊛....N = 2200. REV/MIN, MD = 422. NM, P = 97.2 KW



ENGINE SER.NR.: 612.87-1888	ATM.PRESSURE : 988 MBAR	FUEL TEMP.: 49 C	SIGNATURE
TRAKTOR SER.NR.: 397.25-84189-27	AIR TEMPER. : 20 C	D.OF TESTS: 1982-06-11	
FUEL : 0.830 KG/L BEI 1	COOLANT TEMP.: 85 C	TEST NO. : 136/M 177	
ENGINE OIL : MOBIL SPEZ. 10W-30	OIL TEMP. : 113 C	CURVES NO.: 5	REITHER

EDV-DL003,MEU050.DAT;MEU04MD