O.E.C.D. Report No.: 706

BUNDESVERSUCHS - UND PRÜFUNGSANSTALT
für landwirtschaftliche Maschinen und Geräte,
Wieselburg

Dieseltractor

Trade name:

STEYR 8060 a

Manufacturers signature:

STEYR 337.25



Date of approval: 1980 12 15

Date of test: 1980 05 14

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:	120 hours

SPECIFICATION OF TRACTOR

Tractor:

Make:	STEYR-DAIMLER-PUCH AG.
Model:	Diesel-Tractor STEYR 337.25 Trade name: STEYR 8060a
Type:	Wheel tractor, four-wheel driven, unit construction
Serial No.:	337.25 - 01001

Engine:

Make:	Own make
Model:	WD 311.40
Type:	4 stroke diesel engine with direct injection
Serial No.:	311.40 - 1003
Cylinders:	3, vertical in line Bore/stroke: 100/110 mm Capacity: 2592 cm^3 Compression ratio: 16,2 Wet liners
Valves:	Overhead valves
Fuel system:	Capacity of fuel tank: appr. 96 l Optional: small tank appr. 64 l Fuel feed by gravity BOSCH fuel filter Dual filter with water trap and changeable elements, model 0450 134 002 Fuel precleaner FJSJ 1/1 Z BOSCH distributor injection pump Prototype model: VA 3/10 H 1200 CRV 3673 Serial model: VA 3/10 H 1200 CR 411 Manufacturers production setting: $48^{\pm 0}_{-2}$ mm^3/stroke at 2400 rev/min and full load Injection timing: $16^{\pm 1}$ before TDC at 1 mm pump stroke

Fuel system: (cont.)

Injectors:
BOSCH
Multi hole injection nozzles DLLA 150 SV 13249 or
FRIEDMANN & MAIER
Multi hole injection nozzles D 1 LMK 150/55

Injection pressure: $21,6^{+0,5}_{-0}$ MPa (216^{+5}_{-0} bar)

Governor:

BOSCH variable speed governor
Hydraulically acting, incorporated in injection pump
Range of speed: 600 to 2580 rev/min
Rated speed: 2400 rev/min

Air cleaner:

MANN & HUMMEL or PUROLATOR/KNECHT
Main-cleaner: Dry type with changeable element and electrical indicator
Model: MANN & HUMMEL 45.114.65.414;
optional: additional safety element CF 600
PUROLATOR LP 045/1;
optional: additional safety element AF 3098 or
KNECHT SE 045
Pre-cleaner: Cyclonic type, transparent dust container
Model: MANN & HUMMEL 48.030.67.900

Exhaust silencer:

EBERSPÄCHER
Reflexion type, at left side of the engine, mouth upwards 2430 mm above ground, 150 mm left of median plane
Model: T 16.47.476.10.0.00 with protective cab 110.01
T 16.47.476.11.0.00 with protective cab 110.02

Lubrication:

Forced lubrication with EATON pump, strainer in sump, paper filter in full flow
Oil capacity: appr. 6,4 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 4 blade fan (dia: 420 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. 15 l (16,5 l with cab heating)
Overpressure: max. 50 kPa (0,5 bar)
Joining for warm water heating

Starting system:

Electrically
BOSCH solenoid engaged starter, model: 0 001 362 072 JF
12 V, 2,5 kW
Cold starting aid: BERU or BOSCH
glow plug in intake pipe, BERU model 184 G or
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, 0 120 339 526 14 V, 28 A, 392 W Batteries: lead acid type, 1 with 12 V and 135 Ah capacity at 20 hours rating

Transmission:

Clutches:	Clutch: FICHTEL & SACHS Dual plate dry clutch, model DUT 280 - 280/280, both plates 280 mm dia, independent activated or LUK same dimension Main clutch: 280 mm dia, pedal operated P.t.o.-clutch: 280 mm dia, hand lever operated Front wheel-drive clutch: Wet multiplate clutch, 135 mm dia, mechanically acting, hand lever operated
Gearbox:	Own make, mechanically acting, model 337 Basis model: (optional) reversing gear (FORWARD - REVERSE) combined with 4 speed change gear and reduction gear (ROAD - FIELD) Total: 8 forward and 8 reverse speeds Normal model: (as tested) 2 forward and 1 reverse group gear (FORWARD FAST, FORWARD NORMAL, REVERSE) combined with 4 speed change gear and reduction gear (ROAD - FIELD) Total: 16 forward and 8 reverse speeds Crawler gear model: (optional) Basis model with crawler gear reduction Reduction ratio: 3,398 Total: 16 forward and 16 reverse speeds Optional: synchronised helical 4 speed change gear Optional: top speed 25 km/h or 30 km/h (as tested)
Rear axle and final drive:	Own make, model 337 Central axle; pinion and bevel gear, lockable bevel gear differential, acting by planetary gears on rear wheels Differential lock: mechanically acting, foot lever operated, lockable, self disengaging
Front axle and final drive:	ZF-PASSAU Steering axle, central type Driving shaft, pinion and bevel gear, bevel gear differential, half shafts, universal joints, planetary gears in wheel hubs Front wheel drive: mechanically engaged, hand lever 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	
		field L	road S	field L	road S
forward normal VN	1	402,16	120,34	1,44	4,81
	2	209,35	62,64	2,77	9,24
	3	140,82	42,14	4,11	13,74
	4	85,31	25,53	6,79	22,69
forward fast VS	1	327,03	97,86	1,77	5,92
	2	170,24	50,94	3,40	11,37
	3	114,52	34,27	5,06	16,90
	4	69,37	20,76	8,35	27,90
reverse R	1	327,03	97,86	1,77	5,92
	2	170,24	50,94	3,40	11,37
	3	114,52	34,27	5,06	16,90
	4	69,37	20,76	8,35	27,90

*) Calculated with index radius of 640 mm and test tyre equipment 12,4-32 AS

Oil capacity:

Gearbox and rear axle: appr. 24,5 l
Rear axle final drives: appr. 2,7 l for each planetary gear
Recommended oil: SAE 90, MIL-L-2105
Front axle differential: appr. 4,75 l SAE 90-API GL 5 MIL-L-2105 B
Front axle final drives: appr. 0,75 l each side SAE 90 MIL-L-2105
Changing interval: uniformly 1000 hours or one year

Power take off:

At rear of tractor, in median plane, 295 mm behind rear axle, 530 mm above ground (640 mm tyre index radius)
Dimension: ISO R 500, Type I (35 mm, 6 splines)

Proportional to engine speed (independent) p.t.o.:
P.t.o. shaft driven by p.t.o. clutch (dry plate type) and speed selector
Speeds:
540/ 634 rev/min at 2044/2400 rev/min engine speed
1000/1127 rev/min at 2130/2400 rev/min engine speed
Engine speed resp. p.t.o. speed indication by "Traktor-meter"
Direction of rotation: clockwise viewed from driving end

Proportional to ground speed p.t.o.:
Only engageable when reduction gear is on O (NEUTRAL = stationary) or L (FIELD) position. P.t.o. shaft driven by main clutch (dry plate type), group gear, 4 speed change gear, reduction gear (only in position O or L (FIELD)) and sliding gear.

Power take off: (cont.)

Driving mode (reduction gear in L position):
Travelling distance for 1 revolution of p.t.o.:
0,103 m with 640 mm tyre index radius
Number of p.t.o. revolutions for 1 revolution of driving wheel: 38,95

Stationary mode (reduction gear on O position, tractor not driving):

Speeds at 2400 rev/min rated engine speed (rev/min):
30 km/h model (not tested)

Group gear:	VN	VS	R
Gear No.: 1	286	232	286
2	549	447	549
3	816	664	816
4	1348	1096	1348
Direction of rotation	clockwise	clockwise	anticlockwise
	viewed from driving end		

25 km/h model (as tested)

Group gear:	VN	VS	R
Gear No.: 1	193	232	223
2	370	447	429
3	550	664	638
4	908	1096	1053
Direction of rotation	clockwise	clockwise	anticlockwise
	viewed from driving end		

Middle p.t.o.:

Optional, not on tested tractor
Forward direction, on the left side of the gearbox, 186,5 mm left hand of median plane of tractor, 550 mm above ground, 651 mm before rear axle
Dimension: ISO R 500, Type 1 (35 mm, 6 splines)
No power restriction
Driven by p.t.o. clutch
Speed: 1000/1183 rev/min at 2029/2400 rev/min engine speed
Direction of rotation: anticlockwise viewed from the driving end

Front p.t.o.:

Optional, not on tested tractor
Forward direction, on the left side of the tractor, 310 mm left hand of median plane, 643 mm above ground, 468 mm before front axle
Driven by middle p.t.o. and propeliershaft with intermediate bearing
No power restriction
Same speeds and direction of rotation of middle p.t.o.

Belt pulley:

Optional, not on tested tractor
At rear of tractor, perpendicular transmission on rear p.t.o., all speeds of rear p.t.o. engageable
Dimensions: 250 mm dia, 160 mm width
Number of pulley revolutions for 1 revolution of p.t.o.: 2,23

Power lift:

In the rear:

Own make, open center type
Draught control with two stage pull adjustment and upper link sensing, position control, floating position
"STEYR SIMPLEMATIK" standard linkage, categorie I/II, double hole lift arms, in accordance to ISO 730
BOSCH gear type pump, directly driven by engine
BOSCH control unit
Own oil supply, capacity: 10 l (11 l with oil tappings)
Recommended oil: SAE 20 W, MIL-L-46152,API CC
Working cylinder: single acting type, bore/stroke: 75/147 mm

Optional (not on tested tractor):
WALTERSCHEID linkage quick coupler, category II

Oil tappings: up to 3 oil circuits with BOSCH control units for single or double acting cylinders
Capacity of tappings: 6 l

Optional (not on tested tractor):
Increased capacity of oil tappings up to 17 l with 11 l supplementary tank

In the front:

Optional (not on tested tractor):
Three point linkage, category II, open system, hydraulic power lift, disintegrated construction
Oil supply from own control unit and common oil supply with power lift in the rear
Single acting cylinder, bore/stroke: 60/250 mm

Holed drawbar:

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

Dimensions of the holed drawbar	category I	category II
Number of holes	5	7
Holes diameter	33	33
Distance between holes	130	115

Holed drawbar:
(cont.)

Height above ground*)		Min. lift rod length (basis adjustment)	Max. lift rod length
Lift arm length:	192 mm	from 450 to 920 mm	from 275 to 795 mm
	230 mm	from 352 to 930 mm	from 165 to 785 mm

*) Calculated with tyre index radius of 640 mm

Method of changing: by power lift, lift rod and lift arm length
Distance of rear axle: 870 mm (lower links horizontally)
Distance relative to p.t.o.: 574 mm

Pull attachement:

Trailer hitch: Own make
Fork type, model 273 Q

Height above ground:	360/388/693/721 mm
Distance from rear axle:	367/447 mm
Position relative to p.t.o.:	rearwards 72/152 mm
Diameter of coupling pin:	30,5 mm
Max. vertical load:	15 kN

Optional (not on tested tractor):
ROCKINGER automatic coupler model 248
Fork type, height adjustable in 2 positions

Height above ground:	713/701 mm
Distance from rear axle:	494 mm
Position relative to p.t.o.:	rearwards 199 mm
Diameter of coupling pin:	30 mm
Max. vertical load:	15 kN

or ROCKINGER model 273 J
Fork type

Height above ground:	708/667/623/582 mm
Distance from rear axle:	454 mm
Position relative to p.t.o.:	rearwards 159 mm
Diameter of coupling pin:	30,5 mm
Max. vertical load:	15 kN

or ROCKINGER automatic coupler, model 279
Fork type

Height above ground:	711/660/628/577 mm
Distance from rear axle:	462 mm
Position relative to p.t.o.:	167 mm
Diameter of coupling pin:	30 mm
Max. vertical load:	15 kN

Trailer hitch: (cont.)
or own make
Fork type (italian equipment)
Height above ground: 364/384/689/709 mm
Distance from rear axle: 327 mm
Position relative to p.t.o.: 32 mm
Diameter of coupling pin: 28 mm
Max. vertical load: 15 kN

Towing hitch:
Fork type
Height above ground: 590 mm
Distance from front axle: frontwards 520 mm
Diameter of coupling pin: 31 mm

Steering:
ZF-SCHWÄBISCH GMÜND
Hydrostatic steering, model ZF 8452
or DANFOSS equivalent model OS PC 125 OR
Own oil circuit with filter in the oil case, gear pump directly driven by engine
Changing interval of oil and filter: 1000 hours
Capacity of oil case: 1,75 l
Recommended oil: Automatic Transmission Fluid (ATF Dexron D or ATF M 2 C 33 E/F).
Delivery rate: 25,2 l/min
Working pressure: 10,0 MPa (100 bar)
Operated by steering wheel, acting on front wheels

Brakes:
Own make

Service brake: Hydraulically acting inner brake (Simplex), 229 mm dia, 60 mm width, acting on differential shafts, pedal operated

Parking brake: Mechanically acting on separate inner brake, 229 mm dia, 30 mm width, acting on differential shafts, activated by hand 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 combination one or two line system, air compressor V-belt driven
Storage pressure: $1,8^{+0,2}_{-0,0}$ MPa (18^{+2}_{-0} bar)
Working pressure: 0,72 MPa
Storage capacity: 10 l

Wheels:

Front wheels: 2 pneumatics, steering and driving function, diagonal or radial carcass, tyre casing synthetic material
10,5 - 18 AS (MPT), PR 6; rim: 9 x 18
Maximum permissible load on each tyre:
14030 N at 2,25 bar inflation pressure
19640 N at 2,81 bar inflation pressure
max. 8 km/h driving speed for front implement working
Track-width: 1434 mm (1714 mm by reversing wheels)

Front wheels: (cont.)

Optional front wheel equipment:
7,50-18 AS (Imp.), PR 6 with rim 5,50 F x 18
10,5-20 AS (MPT), PR 6 with rim 9 x 20

Rear wheels:

2 pneumatics, driving function, diagonal or radial carcass tyre case integrated in the safety cab

12,4-32 AS, PR 6, rim: W 10 x 32
Maximum permissible load on each tyre:
13 295 N at 1,7 bar inflation pressure
Track width: 1372 mm (1524 mm by reversing wheels)
with adjustable rim: 1372 mm - 1720 mm

Optional rear wheel equipment:

14,9-28 AS, PR 6, rim: W 12 x 28
Track width: 1382 mm (1514 mm by reversing wheels)
with adjustable rim: 1372 mm - 1798 mm

9,5-36 AS, PR 6, rim: W 8 x 36
Track width: 1372 mm (1524 mm by reversing wheels)
with adjustable rim: 1372 mm - 1798 mm

12,4-36 AS, PR 6, rim: W 11 x 36
Track width: 1372 mm (1524 mm by reversing wheels)
with adjustable rim: 1304 mm - 1778 mm

14,9-26 AS, PR 6, rim: DW 12 x 26
Track width: 1372 mm (1524 mm by reversing wheels)
with adjustable rim: 1398 mm - 1798 mm

Wheel base: 2060 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	860	135 x 115	720
Side Lights	1445	80 x 65	140
Rear lights	1475	80 x 65	140
Reflectors	1355 640	75 dia	100 425

*) with tyre equipment: 12,4/11-32 AS and 10,5/80-18 MPT PR 6
**) with overall width of 1730 mm

Number of grease points: 26

Driver seat:

BOSTROM
Model XH 2 TS 2; tested on tractor according to national regulation (Prot.Nr. 075/79)
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. 074/79)
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

Safety frame:

Own make
Model 110.01
Rubber mounted sheet construction with roof, windscreen, front cladding and rubber floor, without doors, claddings and damping materials, without side and rear glasses and without ventialtion and heater.
Strength tested according to OECD-Code (identical to Austrian national legislation)
OECD-Nr.: CSD 0226/3-b(C)

Optional:
Own make
Model 110.02
Same construction, 120 mm lower
Strength tested to national legislation (identical to OECD-Code)

Safety cab:

(as on tested tractor)
Own make
Model 110.11
Same rubber mounted sheet construction as safety frame with windscreen, front cladding, 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 legislation)
OECD-Nr.: CSD 0226/3-a(C)

Optional:
Model 110.12
Same construction, 120 mm lower
Strength tested 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	1108 kg	1684 kg	2792 kg
With ballast	1325 kg	2232 kg	3557 kg

Ballastmass:

	Number of weights	Total mass (excluding water)	Water
Front	5	183 kg	-
Rear	4 + 2	298 kg	284 kg
Additional	-	-	-

Track setting and tyre equipment:

1434 mm at front
1372 mm at rear
Front wheels: 10,5/80-18 MPT, PR 6, rim 9 x 18
Rear wheels: 12,4/11-32 AS, PR 6, rim W 10 x 32

Overall dimensions:

	Length	Width		Height **)
		max. *)	min. *)	
	mm	mm	mm	mm
With ballast	3670	2000	1720	2400/2430
Without ballast	3495	2000	1720	2400/2430

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

Minimum ground clearance: 275 mm under front axle with basis tyre equipment 10,5/80-18 MPT

Fuel and lubricants used in tests:

Fuel:	ELAN Diesel fuel (according to DIN 51601) specific gravity at 15°C: 0,849 kg/l for p.t.o. test 540 rev/min 0,848 kg/l for p.t.o. test 1000 rev/min 0,845 kg/l for drawbar performance 0,847 kg/l for engine performance Viscosity at 20°C: 5 mm^2/s (5 cSt) Cetan 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: 1980 04 28, 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					
32,49	2400	634	8,71 10,26	268	3,166
Standard p.t.o. speed					
30,92	2044	540	7,87 9,27	254,5	3,335
The speed recommended by the manufacturer for drawbar work					
32,49	2400	634	8,71 10,26	268	3,166
PART LOADS Governor hand lever in position giving maximum power					
(i) 85 % of torque at maximum power					
28,09	2441	645	7,70 9,07	274	3,097
(ii) unloaded					
-	2555	675	2,75 3,24	-	-
(iii) 50 % of the load defined in (i)					
14,36	2494	659	5,02 5,92	350	2,427
(iv) maximum power					
32,49	2400	634	8,71 10,26	268	3,166
(v) 25 % of the load defined in (i)					
7,27	2525	667	3,80 4,48	523,5	1,622
(vi) 75 % of the load defined in (i)					
21,29	2464	651	6,32 7,45	297	2,859

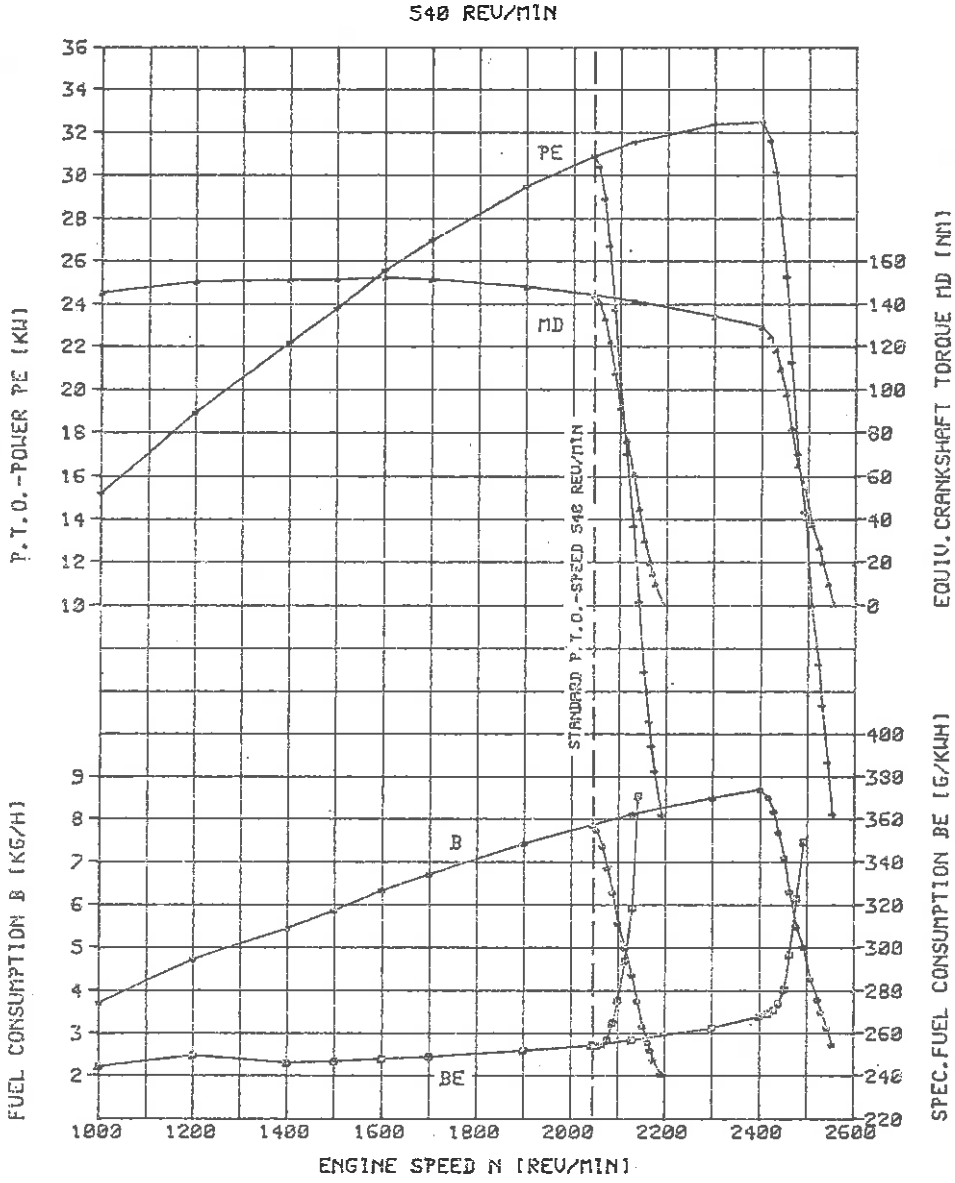
Power	Speed		Fuel consumption		
	engine	p.t.o.	total	specific	specific
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
PART LOADS Governor hand lever in position giving standard p.t.o. speed at full load					
(i) 85 % of torque at standard p.t.o. speed					
26,71	2078	549	6,87 8,09	257	3,302
(ii) unloaded					
-	2192	579	2,05 2,41	-	-
(iii) 50 % of the load defined in (i)					
13,69	2131	563	4,36 5,14	319	2,662
(iv) maximum power at standard p.t.o. speed					
30,92	2044	540	7,87 9,27	254,5	3,335
(v) 25 % of the load defined in (i)					
6,92	2154	569	3,17 3,74	438,5	1,851
(vi) 75 % of the load defined in (i)					
20,26	2101	555	5,58 6,58	275,5	3,081
STANDARD SPECIFIC FUEL CONSUMPTION: 274/350 - 257/319 g/kWh					

No load maximum engine speed: 2555 rev/min
Equivalent crankshaft torque at maximum power: 129,3 Nm
Maximum equivalent crankshaft torque: 152,7 Nm at 1600 rev/min of engine

Mean atmospheric conditions: temperature: 17°C
pressure: 988 mbar
humidity: 64 %

Maximum temperatures: coolant: 87°C
engine oil: 112°C
fuel: 64°C
air intake: 21°C

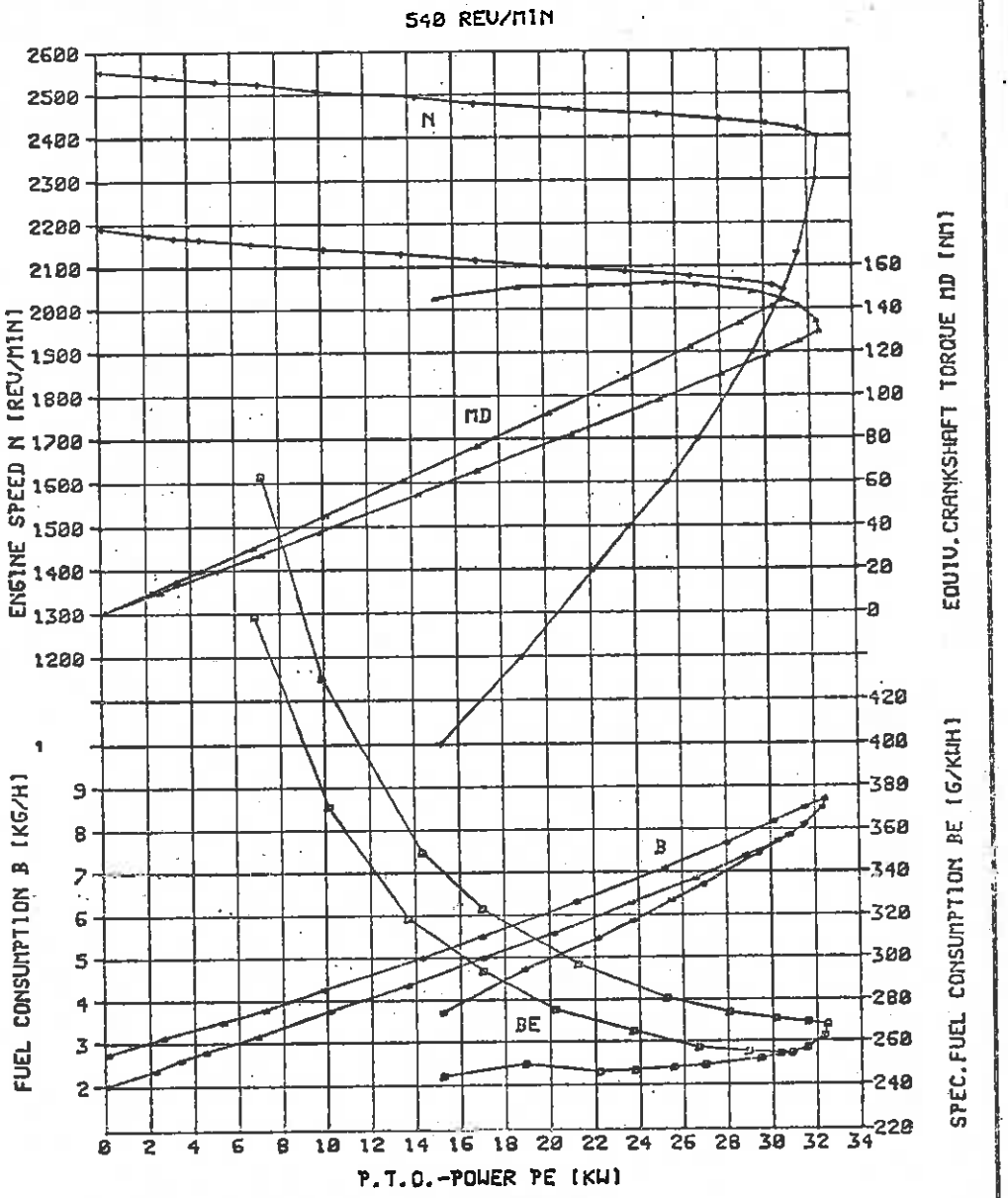
BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 067/80	P.T.O.-TEST	STEYR TYP 337.25 (8060A) MOT.TYP WD 311.40



ENGINE SER.NR.: 311.40-1003	ATM. PRESSURE : 980 MBAR	FUEL TEMP.: 64 C	SIGNATURE
TRAKTOR SER.NR.: 337.25-1031	AIR TEMPER. .: 17 C	D.OF TESTS: 1980-04-28	A. Deitler
FUEL : 0.849/15 C	COOLANT TEMP.: 87 C	TEST NO. : 123/ZA119	
ENGINE OIL : SAE 10 W - 30	OIL TEMP. : 112 C	CURVES NO.: 1	REITHER

DOK.:0100046-DL003;MKU032.DAT;MKU28-21.

BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 067/80	P.T.O.-TEST	STEYR TYP 337.25 (8060A) MOT.TYP WD 311.40



ENGINE SER.NR.: 311.40-1003	ATM.PRESSURE : 988 MBAR	FUEL TEMP.: 64 C	SIGNATURE
TRACTOR SER.NR.: 337.25-1091	AIR TEMPER. : 17 C	D.OF TESTS: 1980-04-28	A. Reither
FUEL : 0.849/15 C	COOLANT TEMP.: 87 C	TEST NO. : 123/ZA119	
ENGINE OIL : SAE 10 W - 30	OIL TEMP. : 112 C	CURVES NO.: 2	REITHER

DUR.:B180846-DL803.TRU832.DAT;TRU28-21

2. Drawbar performance

Date of tests: 1979 08 01 to 1979 04 08
Type of track: Concrete
Height of drawbar above ground: 360 mm ballasted, 380 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)													
VN1L	1,270	12,80	36252	2478	15	-	-	58	85	105	26	62	986
VS1L	1,554	15,65	36252	2467	15	-	-	57	85	106	25	62	986
VN2L	2,373	23,89	36255	2411	15	2,353	359	58	84	105	25	61	986
VS2L	3,069	25,79	30203	2400	10,2	2,513	336	58	85	105	26	61	986
VN3L	3,809	26,55	25098	2400	7,8	2,587	326,5	57	85	106	25	61	986
VN1S	4,534	26,45	21002	2400	6,2	2,578	328	58	86	106	26	60	986
VS3L	4,785	26,35	19822	2400	5,8	2,568	329	57	85	105	26	60	986
VS1S	5,665	25,75	16360	2400	4,7	2,509	336,5	57	85	106	25	60	986
VN4L	6,553	25,00	13735	2400	3,9	2,436	347	56	84	105	26	60	986
VS4L	8,134	23,71	10495	2400	3	2,311	365,5	55	84	104	26	58	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													
VN3L	4,009	20,96	18821	2451	5,3	2,490	339,5	63	86	113	25	60	992
(iii) Five-hour-test at pull corresponding to 15 % wheelslip in test (i)													
VN2L	2,383	24,00	36267	2415	15	2,364	357,5	65	85	112	25	68	985
(iv) Maximum power (unballasted)													
VN2L	2,394	19,87	29883	2451	15	-	-	56	84	106	23	70	984
VS2L	2,904	24,11	29885	2418	15	2,409	350,5	57	84	107	23	71	984
VN3L	3,681	25,56	24997	2400	10,2	2,491	339	58	84	108	24	70	984
VN1S	4,418	26,14	21300	2400	7,9	2,547	331,5	58	85	108	25	69	984
VS3L	4,673	26,20	20184	2400	7,3	2,553	331	58	85	107	24	70	984
VS1S	5,556	26,15	16944	2400	5,8	2,548	331,5	57	84	107	24	69	984
VN4L	6,449	25,98	14502	2400	4,7	2,532	333,5	58	85	108	24	69	984
VS4L	8,022	25,50	11446	2400	3,6	2,485	340	57	84	107	24	69	984

Total oil consumption during 10 hours duration of tests (ii) and (iii): 45,2 g/h

3. Turning space and turning circle

Wheel equipment front: SEMPERIT 10,5/80-18 MPT PR 6, rim 9 x 18
rear: SEMPERIT 12,4/11-32 AS, PR 6, rim W 10 x 32

Track of wheels front: 1434 mm
rear: 1372 mm

Results *)	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning space	3,50/3,83	3,58/3,82	4,53/4,25	4,65/4,27
Radius of turning circle	3,32/3,65	3,40/3,64	4,35/4,07	4,47/4,09

*) four wheel drive switched: ON/OFF

4. Location of centre of gravity

	mm
Height above ground	786
Distance forward from the vertical plane containing the axis of the rear wheels	796
Distance from the median plane, left-hand	5

5. Braking

Date of tests: 1979 07 31 and 1979 08 03
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 15813 (Kombi-Schreiber)
Mass of ballasted tractor: 3640 kg (with driver)

Cold brakes

		Ballasted	Without ballast
Travelling speed of the tractor	km/h	25	25
(i) Deceleration	m/s^2	9,0	9,0
(ii) Stopping distance	m	3,59	3,58
(iii) Force exerted on the brake pedal	N	590	410
(iv) Force exerted on the brake pedal to achieve a deceleration of 2,5 m/s^2	N	175	160

Brake fade characteristics (hot tests)	Ballasted	Unballasted
Deceleration hot / deceleration cold x 100	88	101
Stopping distance cold / Stopping distance hot x 100	90	84
Force on pedal, cold / Force on pedal, hot x 100	94	90
Force on pedal, cold / force on pedal, hot to achieve a deceleration of 2,5 m/s^2 x 100	67	100

Efficiency of handbrake:
Satisfactory facing up and down slope of 16 %
pull on handbrake upward: 100 N
pull on handbrake downward: 250 N

6. Measurement of ambient noise

Date of tests: 1979 07 27
Type of sound level meter: 2203 BRÜEL & KJAER
Type of track: Concrete

Results of tests:
Gear: VS 4 S
Travelling speed before acceleration: 21 km/h
Sound level: 87 dB(A)

7. Noise measurement at the driver's ear level

Date of tests: 1980 03 14
Type of sound level meter and octave filter:
2203 and 1613 BRÜEL & KJAER
Type of track: Concrete

Results of tests (tractor with safety cab):

Gear	Effective travelling speed	Sound level	
		dB(A)	Noise rating
VN 1 L	1,43 km/h	82	-
VS 1 L	1,57 km/h	82	-
VN 2 L	2,23 km/h	82	-
VS 2 L	3,13 km/h	82	-
VN 3 L	3,88 km/h	81,5	-
VS 3 L	4,54 km/h	82	-
VN 1 S	4,76 km/h	82,5	-
VS 1 S	5,76 km/h	82	-
VN 4 L ✓	6,77 km/h	82	-
VS 4 L	8,40 km/h	81,5	-
VN 2 S	9,36 km/h	82	-
VS 2 S	11,45 km/h	82	-
VN 3 S	14,08 km/h	82	-
VS 3 S	18,00 km/h	82	-
VN 4 S	22,50 km/h	83	-
VS 4 S	26,00 km/h	83	-

8. Power lift and hydraulic pump performance

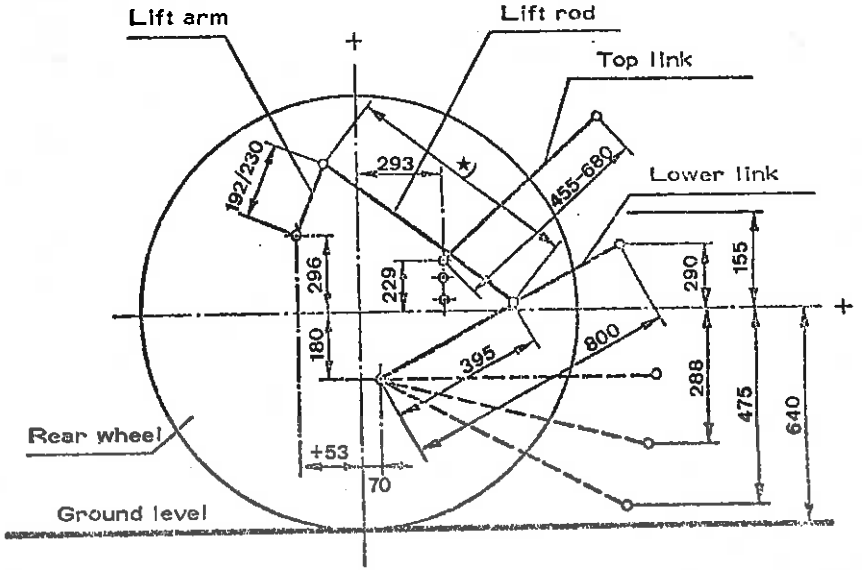
Date and location of tests: 1979 07 18, Wieselburg, Austria
Hydraulic fluid:
Make and type: SHELL Tellus 33, SAE 20 W
Viscosity at 50°C: 40 mm^2/s (40 cSt)
Typ of linkage lock for transport: hydraulically by throttle valve
Opening pressure of the cylinder overpressure relief valve (manufacturer specification): 24,5 MPa (245 bar)

Pump characteristics:

(i) Opening pressure of the relief valve: 17,8 MPa (178 bar)
sustained pressure by the open relief valve: 17,0 MPa (170 bar)

(ii) Pump delivery rate at minimum pressure and rated engine speed: 24,1 l/min

(iii) Pump delivery rate: 23,5 l/min
delivery pressure: 17,0 MPa (170 bar)
power: 6,65 kW



*) basis adjustment: both lift rods 450 mm
left lift rod: from 441 mm to 528 mm adjustable
right lift rod: from 415 mm to 523 mm adjustable

Linkage geometry when connected to the standard frame

		Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view			
Lower links	mm	800	800
Lift arms	mm	192	230
Lift rods	mm	450	450
Top link	mm	570	570
Distance of lift rod connection point from pivot point of lower link	mm	395	395
The following dimensions are given relative to the rear wheel centre line, situated 640 mm *) above the ground level			
Lower link pivot point	mm	70 behind 180 below	70 behind 180 below
Top link pivot point	mm	293 behind 229 above	293 behind 229 above
Lift arm pivot point	mm	53 behind 296 above	53 behind 296 above
Maximum und minimum height of lower link hitch points	mm	280 above 190 below	290 above 288 below
Height of lower link hitch points locked in transport position	mm	from 280 above to 190 below	from 290 above to 288 below

*) index radius

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivoting point mm		-120	-105	-10	0	100	150	200	250	300	400	450	550	600	620
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			21,97	21,48	20,01	19,77	19,62	19,33	18,79	18,44	18,34			
	min. mech. advantage		18,44	16,53	16,50	16,28	16,24	16,19	15,89	15,50	15,55	15,21			
	Maximum force exerted throughout whole range: 18,34/15,21 kN														
	Oil pressure: 17,0 MPa (170 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			17,79	16,86	16,02	15,63	15,19	14,70	14,16	12,69	11,95	10,53	9,60	9,35
	min. mech. advantage	17,05	16,52	14,65	14,55	13,67	13,13	12,69	12,30	11,90	10,48	10,04	9,01	7,95	
	Maximum force exerted throughout whole range: 9,35/7,95 kN														
	Oil pressure: 17,0 MPa (170 bar)														

OPTIONAL TEST

9. Main power take-off performance

Date and location of tests: 1980 04 28, Wieselburg, Austria
Type of dynamometer: SCHENK-eddy current brake - W 780

Main test on: ISO R 500, Type 1 (DIN 9611) - 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
MAXIMUM POWER					
Maximum power - 2 hours test					
33,02	2400	1127	8,70 10,26	263,5	3,218
Standard p.t.o. speed					
32,00	2130	1000	8,07 9,52	252	3,363
The speed recommended by the manufacturer for drawbar work					
33,02	2400	1127	8,70 10,26	263,5	3,218
PART LOADS Governor hand lever in position giving maximum power					
(i) 85 % of torque at maximum power					
28,53	2441	1146	7,71 9,10	270,5	3,136
(ii) unloaded					
-	2558	1201	2,65 3,12	-	-
(iii) 50 % of the load defined in (i)					
14,58	2494	1171	5,03 5,93	345	2,459
(iv) maximum power					
33,02	2400	1127	8,70 10,26	263,5	3,218
(v) 25 % of the load defined in (i)					
7,39	2526	1186	3,83 4,52	518,5	1,636
(vi) 75 % of the load defined in (i)					
21,63	2467	1158	6,33 7,46	292,5	2,898

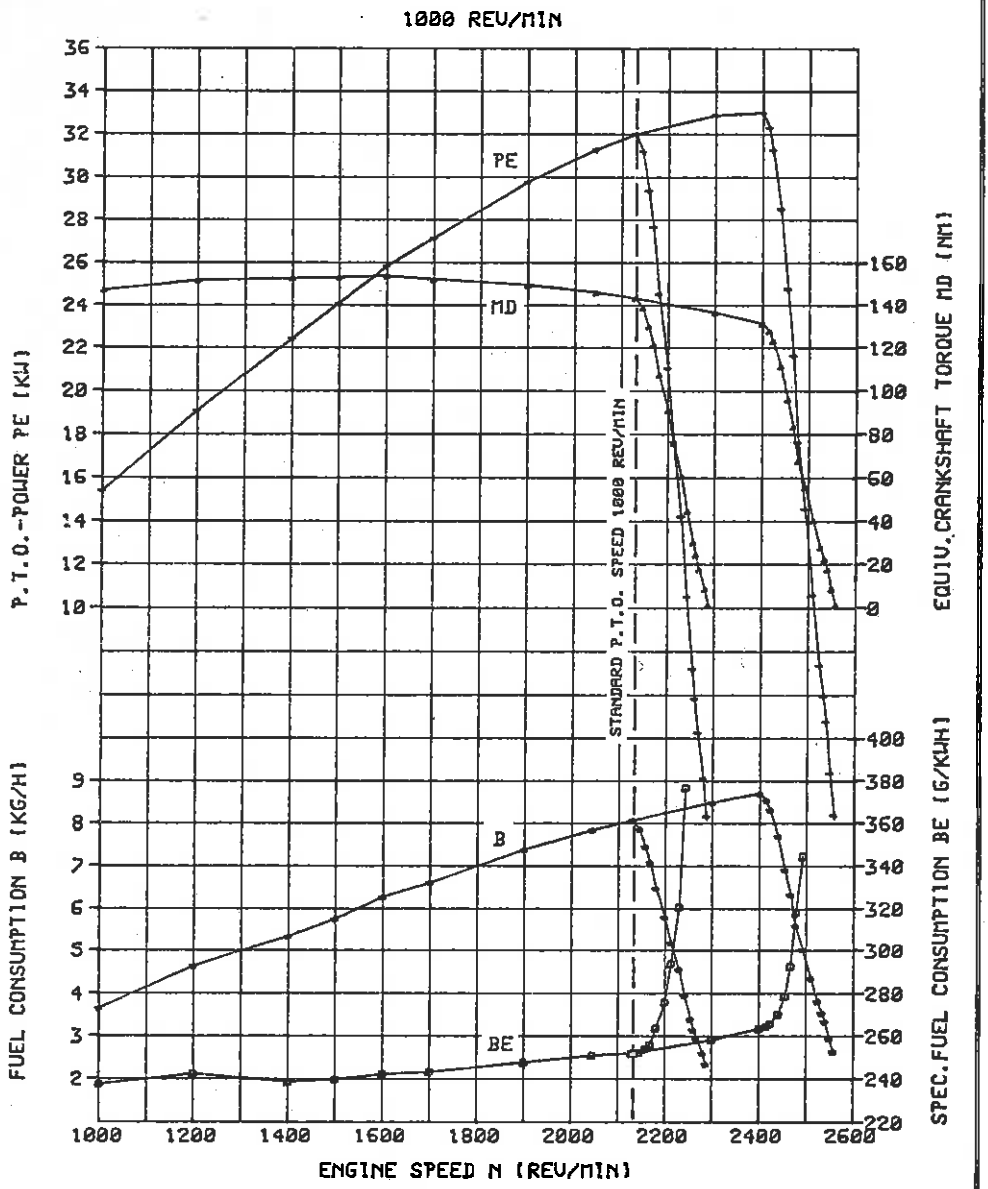
Power	Speed		Fuel consumption		
	engine	p.t.o.	total	specific	specific
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
PART LOADS Governor hand lever in position giving standard p.t.o. speed at full load					
(i) 85 % of torque at standard p.t.o. speed					
27,60	2168	1018	7,09 8,36	257	3,302
(ii) unloaded					
-	2288	1074	2,35 2,77	-	-
(iii) 50 % of the load defined in (i)					
14,24	2230	1047	4,57 5,39	321	2,643
(iv) maximum power at standard p.t.o. speed					
32,00	2130	1000	8,07 9,52	252	3,363
(v) 25 % of the load defined in (i)					
7,20	2256	1059	3,40 4,01	473	1,794
(vi) 75 % of the load defined in (i)					
21,07	2200	1033	5,81 6,86	276	3,072
STANDARD SPECIFIC FUEL CONSUMPTION: 270,5/345 - 257/321 g/kWh					

No load maximum engine speed: 2558 rev/min
Equivalent crankshaft torque at maximum power: 131,4 Nm
Maximum equivalent crankshaft torque: 154,2 Nm at 1600 rev/min of engine

Mean atmospheric conditions: temperature: 18°C
pressure: 988 mbar
humidity: 67 %

Maximum temperatures: coolant: 87°C
engine oil: 111°C
fuel: 65°C
air intake: 22°C

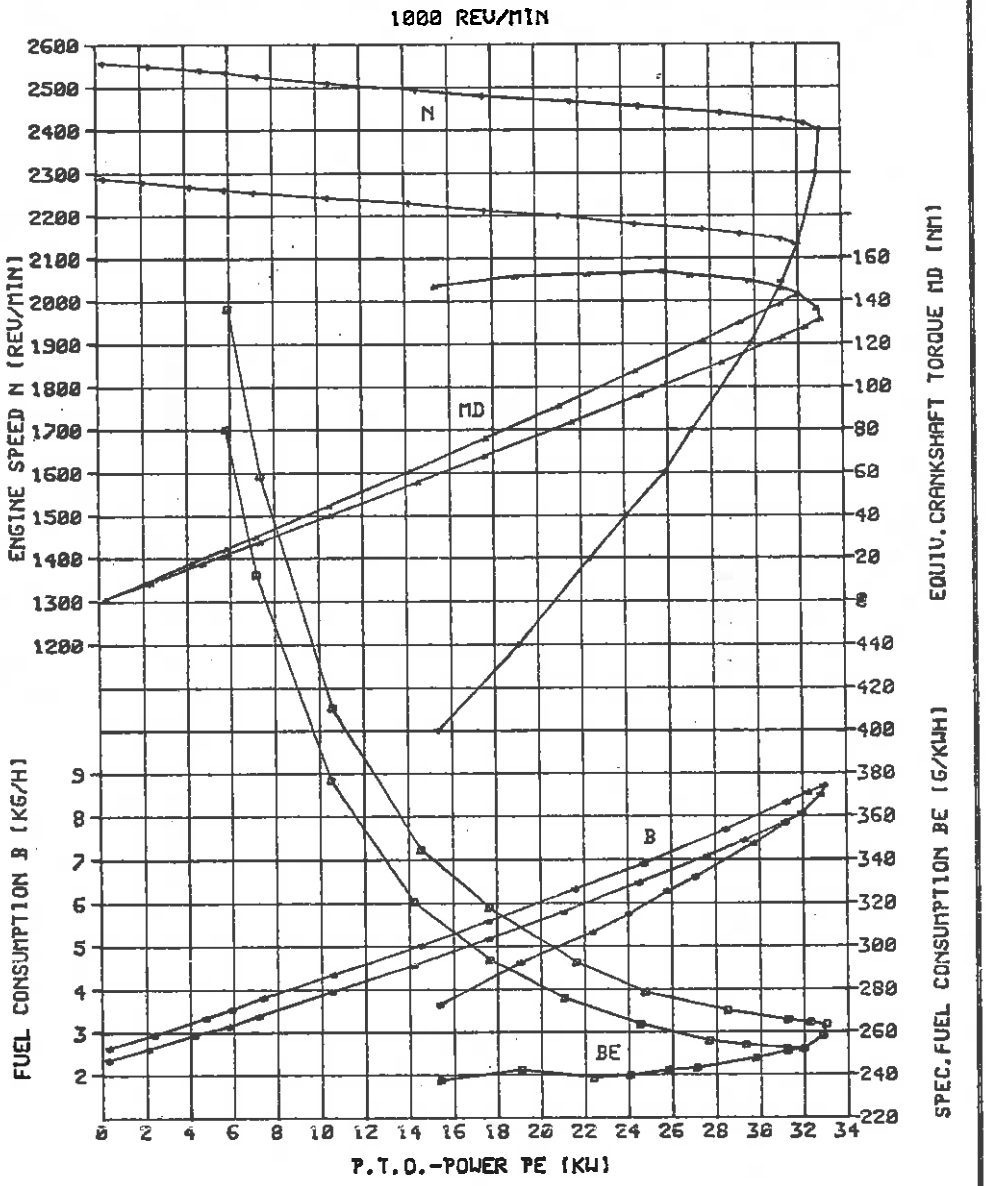
BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 067/80	P.T.O.-TEST	STEYR TYP 337.25 (8060A) MOT.TYP WD 311.40



ENGINE SER.NR.: 311.40-1003	ATM. PRESSURE : 988 MBAR	FUEL TEMP.: 65 C	SIGNATURE
TRAKTOR SER.NR.: 337.25-1001	AIR TEMPER. : 18 C	D.OF TESTS: 1980-04-28	A. Reitlner
FUEL : B.B48/15 C	COOLANT TEMP.: 87 C	TEST NO. : 123/ZA113	
ENGINE OIL : SAE 10 W - 30	OIL TEMP. : 111 C	CURVES NO.: 3	REITHER

DUR.: 0100846-DL003.MKU032.DAT.MKU28-22

BUNDESVERSUCHS-U. PRUEFUNGSANST. UER LAND.U. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 067/80	P.T.O.-TEST	STEYR TYP 337.25 (8060A) MOT.TYP WD 311.40



ENGINE SER.NR.: 311.40-1003	ATM.PRESSURE : 988 MBAR	FUEL TEMP.: 65 C	SIGNATURE
TRAKTOR SER.NR.: 337.25-1001	AIR TEMPER. : 18 C	D.OF TESTS: 1980-04-28	A. Reither
FUEL : B.B48/15 C	COOLANT TEMP.: 87 C	TEST NO. : 123/ZA119	
ENGINE OIL : SAE 10 W - 30	OIL TEMP. : 111 C	CURVES NO.: 4	REITHER

DUR.:01000846-DL003.TRU032.DAT:TRU28-22

OPTIONAL TEST

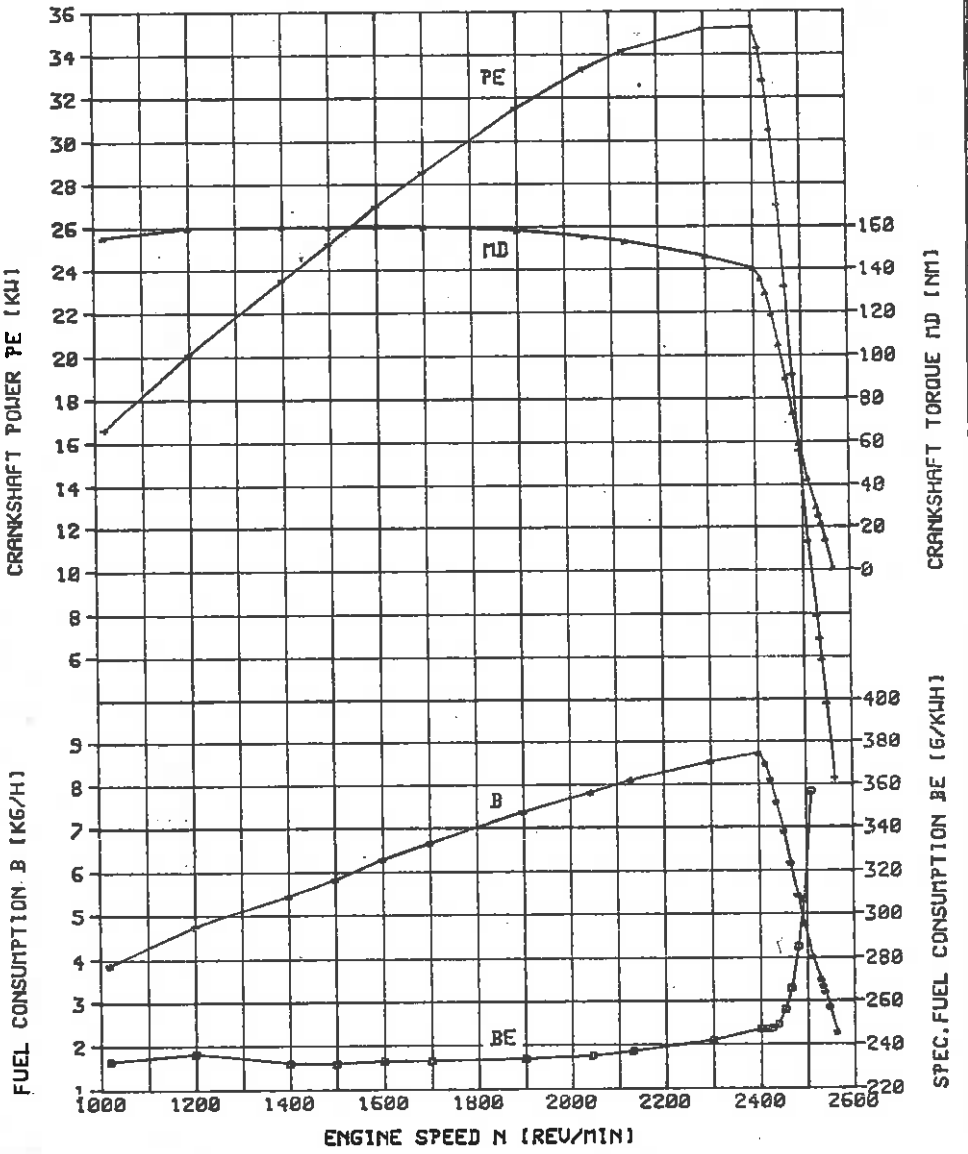
10. Engine performance

Date and location of test: 1980 04 18, Wieselburg, Austria
Type of dynamometer: SCHENK-eddy current brake - W 150

Power	Engine speed	Fuel consumption		
		total	specific	specific
kW	rev/min	kg/h (l/h)	g/kWh	kWh/l
Maximum power - 2 hours test				
35,28	2400	8,716 10,29	247	3,429
Standard p.t.o. speed (540/1000 rev/min)				
33,32	2044	7,831 9,24	235	3,603
34,19	2130	8,106 9,57	237	3,572
The speed recommended by the manufacturer for drawbar work				
35,28	2400	8,716 10,29	247	3,429
Part loads				
(i) 85 % of torque at maximum power				
30,49	2439	7,592 8,96	249	3,401
(ii) unloaded				
-	2564	2,287 2,70	-	-
(iii) 50 % of the load defined in (i)				
15,59	2495	4,787 5,65	307	2,758
(iv) maximum power				
35,28	2400	8,716 10,29	247	3,429
(v) 25 % of the load defined in (i)				
7,89	2530	3,511 4,15	445	1,903
(vi) 75 % of the load defined in (i)				
23,19	2467	6,170 7,28	266	3,183

Optimum fuel consumption: 228 g/kWh at 22,4 kW and 1400 rev/min
No load maximum engine speed: 2564 rev/min
Torque at maximum power: 140,4 Nm
Maximum torque: 160,9 Nm at 1600 rev/min engine speed
Mean atmospheric conditions: temperature: 16°C
pressure: 983 mbar
relative humidity: 65 %
Maximum temperatures: coolant: 87°C
engine oil: 102°C
fuel: 54°C
engine air intake: 22°C

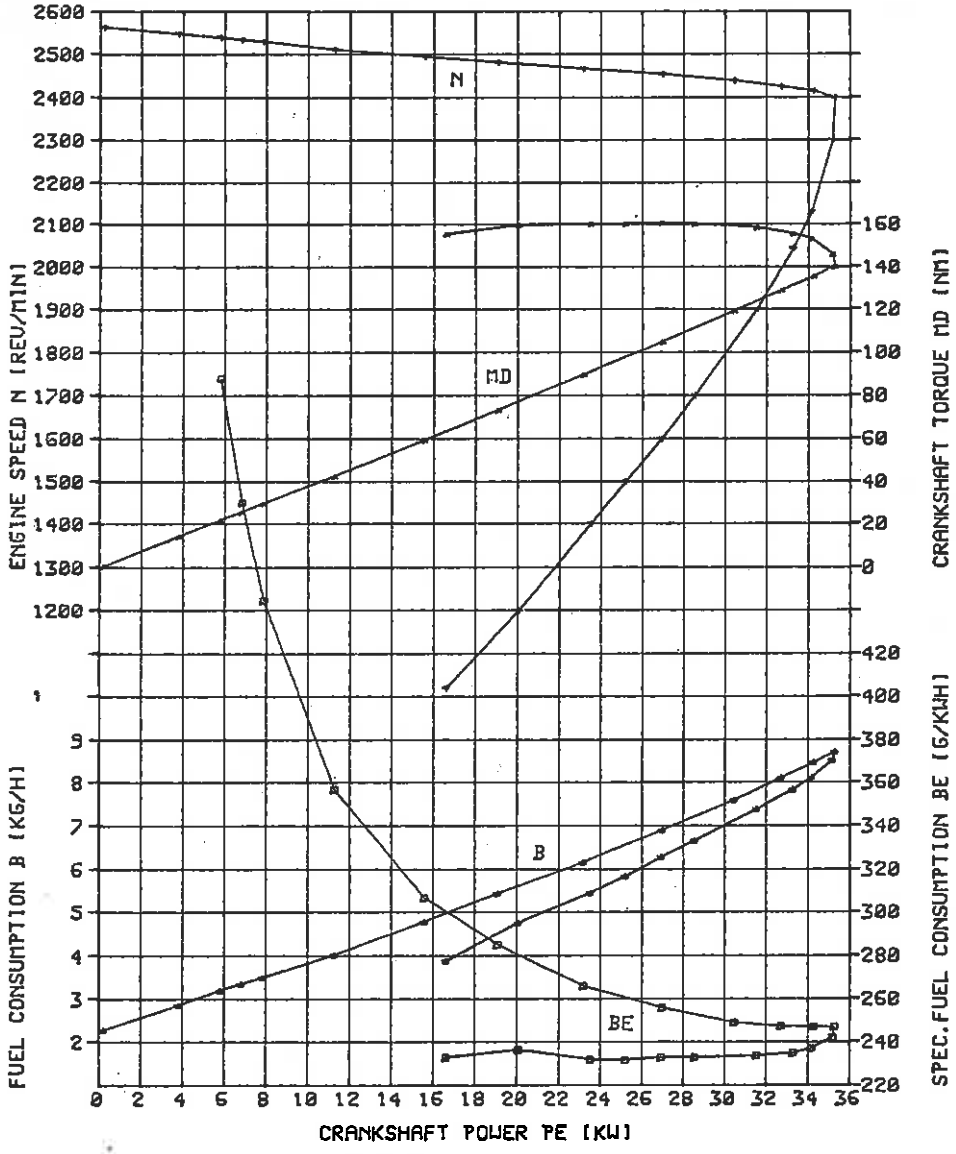
BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDU. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 067/80	ENGINE-TEST	STEYR TYP 337.25 (8060A) MOT.TYP WD 311.40



ENGINE SER.NR.: 311.40-1003	ATM.PRESSURE : 983 MBAR	FUEL TEMP.: 54 C	SIGNATURE
TRAKTOR SER.NR.: 337.25-1001	AIR TEMPER. : 16 C	D.OF TESTS: 1980-04-18	A. Reither
FUEL : 0.847/15 C	COOLANT TEMP.: 87 C	TEST NO. : 123/M171	
ENGINE OIL : SAE 10 W - 30	OIL TEMP. : 102 C	CURVES NO.: 5	REITHER

DUR.:8100846-DL083.MKU312.DAT;MKU28-KW

BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERAETE UIESELBURG/ERLAUF, AUSTRIA PROT. NR.: 067/80	ENGINE-TEST	STEYR TYP 332.25 (8060A) MOT. TYP WD 311.40



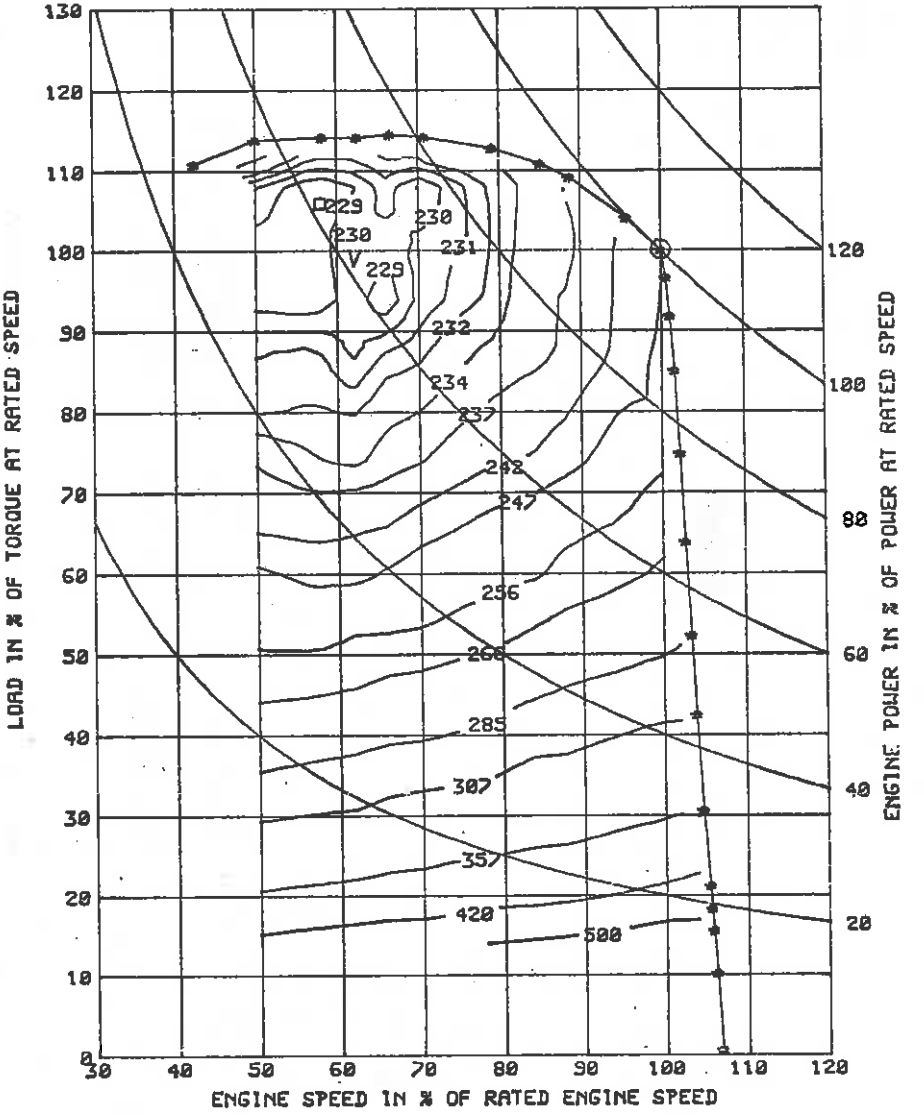
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TRACTOR SER.NR.: 332.25-1001	AIR TEMPER. : 16 C	D.OF TESTS: 1980-04-18	A. Reither
FUEL , 0.847/15 C	COOLANT TEMP.: 87 C	TEST NO. : 123/M171	
ENGINE OIL : SAE 10 W - 30	OIL TEMP. : 102 C	CURVES NO.: 6	REITHER

DOK.: B1800846-DL003; MKU032. DAT: MKU20-KW

BUNDESVERSUCHS-U. PRUEFUNGSANST. FUER LANDW. MASCHINEN U. GERAETE WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 067/80	ENGINE PERFORMANCE CHARACTERISTICS	STEYR TYP 337.25 (8060A) MOT.TYP WD 311.40

□ ....MIN.FUEL CONS. 228.00 G/KWH AT N = 1392. REV/MIN, MD = 148.80 NM, P = 21.7 KW

⊛ ....N = 2400. REV/MIN, MD = 140. NM, P = 35.3 KW



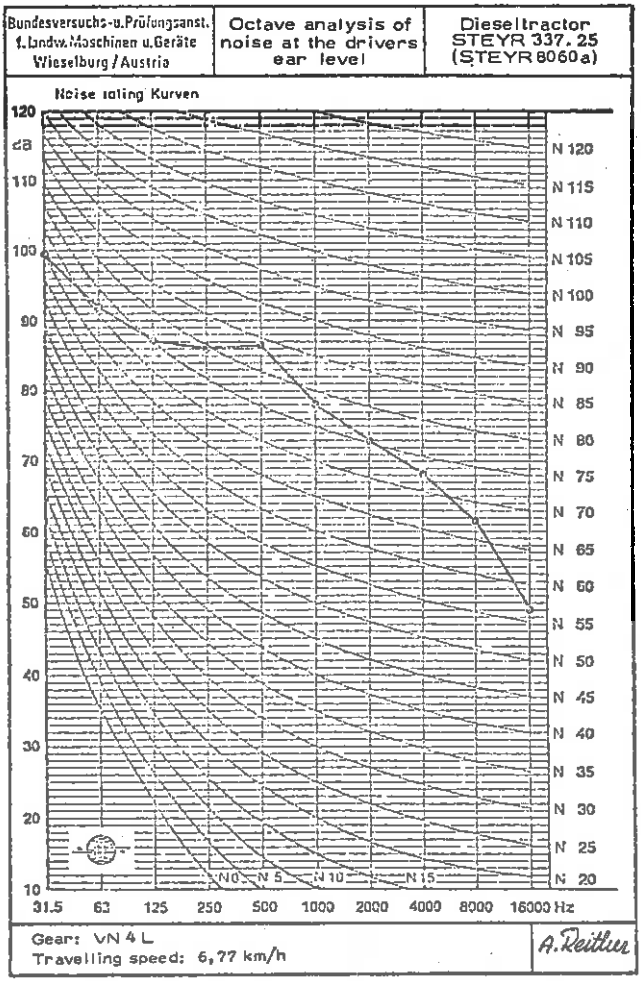
ENGINE SER.NR.: 311.40-1003	ATM.PRESSURE : 983 MBAR	FUEL TEMP.: 54 C	SIGNATURE
TRAKTOR SER.NR.: 337.25-1001	AIR TEMPER. : 16 C	D.OF TESTS: 1980-04-18	A. Reitter
FUEL : B.047/15 C	COOLANT TEMP.: 87 C	TEST NO. : 123/M171	
ENGINE OIL : SAE 10 W - 30	OIL TEMP. : 102 C	CURVES NO.: 7	REITHER

EDV-BLOCK:MKU032.DAT;MKU04W0

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 21, chapter 7)



2. REDUCTION OF POWER DATA TO STANDARD CONDITIONS

According to:

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

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

A) MAIN POWER TAKE OFF PERFORMANCE (page 14 and 26)

Test conditions: Intake air temperature t = 17°C
Atmospheric pressure B = 988 mbar
Resulting reduction coefficient: k = 1,020

	P_{OECD}	P_{RED}
MAXIMUM POWER 540 rev/min	32,49 kW (44,19 mPH)	33,14 kW (45,07 mPH)
MAXIMUM POWER 1000 rev/min	33,02 kW (44,91 mPH)	33,68 kW (45,81 mPH)

B) ENGINE PERFORMANCE (page 30)

Test conditions: Intake air temperature t = 16°C
Atmospheric pressure B = 983 mbar
Resulting reduction coefficient: k = 1,023

	P_{OECD}	P_{RED}
MAXIMUM POWER	35,28 kW (47,98 mPH)	36,11 kW (49,11 mPH)