O.E.C.D. Report No.: 940

Bundesanstalt für Landtechnik

A-3250 Wieselburg, Austria

Dieseltractor STEYR 357.25

Trade name:

STEYR 8090a



Date of approval: 1985 06 17

This report has been approved by the O.E.C.D. Coordinating Centre (CEMAGREF, France) as being in accordance with the O.E.C.D. Test Code

TABLE OF CONTENTS

	Page
SPECIFICATION OF TRACTOR	2
Tractor	2
Engine	2
Transmission	5
Power take off	9
Power lift	11
Three-point-linkage	12
Holed drawbar	13
Trailer hitch	14
Towing hitch	16
Steering	17
Brakes	17
Steering wheels	18
Driving wheels	18
Wheelbase	18
Protective structure specifications	18
Driver's seat	19
Lighting	20
TEST CONDITIONS	21
TEST RESULTS	23
Compulsory test	23
Main power take-off performance - 1000 rev/min	23
Drawbar performance	27
Turning space and turning circle	29
Location of centre of gravity	29
Braking	29
Measurement of external noise level	31
Noise measurement at driver's ear	31
Power lift and hydraulic pump performance	33
Linkage geometry	35
Performance of power lift	36
OPTIONAL TESTS	38
Main power take-off performance - 540 rev/min	38
Engine performance	42
ANNEX	46
Octave analysis of noise at the driver's ear level	46

Tractor manufacturer's name and address:	STEYR-DAIMLER-PUCH AG., Steyr, Austria STEYR-HELLAS ABE., Sindos, Greece
Submitted for test by:	Manufacturer
Selected for test by:	Manufacturer by agreement with BLT-Wieselburg
Place of running-in:	Steyr, Austria
Duration of running-in:	120 hours

SPECIFICATION OF TRACTOR

TRACTOR:

Make:	STEYR-DAIMLER-PUCH AG.
Trade name:	STEYR 8090 a
Model:	Diesel-tractor STEYR 357.25
Type:	Wheel tractor, four-wheel driven, unit construction
Serial No.:	357.25-08452 (first serial No.)

ENGINE:

Make:	Own make
Model:	WD 411.88
Type:	4 stroke diesel engine with direct injection
Serial No.:	411.88 - 999

Cylinders:

Number/disposition:	4, vertical in line
Bore/stroke:	100/110 mm
Capacity:	3456 cm^3
Compression ratio:	16,2/1
Arrangement of valves:	Overhead valves
Cylinder liners:	Wet liners

Fuel system:

Capacity of fuel tank:	96 l or optional 60 l
Fuel feed system:	Fuel feed by piston pump (integrated in injection pump) Model V 2 HF 52 B1 FRIEDMANN & MAIER
Fuel precleaner:	Optional, PUROLATOR PFC-220
Make, type and model of fuel filter:	PUROLATOR PFC-233 Filter with water trap and changeable element, filter cartridge PER 247-F
Service interval:	500 hours changing interval of filter

Make, type and model of injection pump:	In line injection pump FRIEDMANN & MAIER P 24 T 24 s - 8.85 B II RVF BOSCH PES 4 A 85 D 410 RV 15961
Manufacturer's production setting and injection timing:	58^{+2}_{-2} mm^3/stroke at 1100 rev/min and full load 26^{+2}_{-2}° before TDC
Make, type and model of injectors:	FRIEDMANN & MAIER Multi hole injection nozzles, D 1 LMK 150/55
Injection pressure:	$21{,}6^{+0{,}5}_{-0}$ MPa (216^{+5}_{-0} bar)

Governor:

Make:	FRIEDMANN & MAIER or BOSCH
Type:	Variable speed governor, mechanically acting, incorporated in injection pump
Model:	R 8 V 20 - 110/136 D or RSV 250 - 1100 A1CV 16 801
Governed range of engine speed:	From 600 rev/min to 2350^{+30}_{-0} rev/min engine speed

Rated engine speed: 2200 rev/min engine speed

Supercharging:

Make:	KÜHNLE, KOPP & KAUSCH
Model:	K 24 2460 G 506
Type:	Exhaust type turbo-supercharger
Supercharging pressure:	Max. 806 mbar

Air cleaner:

Pre-cleaner:	
Make:	MANN & HUMMEL
Type:	Cyclonic type with transparent dust container
Model:	MANN & HUMMEL 48.056.67.900
Location:	About the motor, above the bonnet
Main cleaner:	
Make:	MANN & HUMMEL or PUROLATOR
Type:	Dry type with changeable filter-paper insert
Model:	MANN & HUMMEL 45.165.65.424 or PUROLATOR LP 060 S/1
Location:	About the motor, inside the bonnet
Main filter paper insert:	MANN & HUMMEL, model C 15 165/3 or PUROLATOR, model PM 1762 or KNECHT, model AG 87

Optional:	Additional safety element MANN & HUMMEL paper insert CF 700 or PUROLATOR paper insert AF 3099 or KNECHT paper insert SE 60
Service intervals:	
Cyclonic pre-cleaner:	Cleaning interval: 500 hours and visual control
Main cleaner paper insert:	Cleaning interval: when control-lamp indication Changing interval: 2000 hours or 1 year
Safety element:	Changing interval: after 5 main-cleaner paper inserts, 2 years, or if main-cleaner was defect
Maintenance indicator:	Electric lamp indication, -65 mbar for indication, PUROLATOR LES 065 IP

Lubrication system:

Type of feed pump:	EATON pump forced lubrication
Total oil capacity including filter:	appr. 9 l
Oil change period:	250 hours
Type of filter:	One paper filter cartridge in full flow, MANN W 940 or PUROLATOR PC 31 or KNECHT FO 371/12
Filter change period:	250 hours
Recommended oil:	See paragraph: Fuel and lubricants used in tests

Cooling system:

Type of coolant:	Water with longtime frost protection down to -20°C in a cooling system with a tubular radiator
Specification of pump:	Centrifugal pump with double circuit water cooling
Type:	Own make, centrifugal pump, 2 driving belts
Model:	-
Specification of fan:	4 blade fan (dia 460 mm, 2 belts driven)
Coolant capacity:	15,5 l (with cab heating 17 l)
Type of temperature control:	Thermostat control with electrical cooling water thermometer
Superpressure system:	Max. 50 kPa (0,5 bar)

Starting system:

Safety device:	Optional
Make:	Own make
Type:	Electrically starting block system by engaged gear
Model and starter motor power rating:	BOSCH, solenoid engaged starter motor 12 V, 2,7 kW, 0 001 367 011
Cold starting aid:	Electrically, 2 glow plugs in intake pipe BERU model 184 G (0 102 024 402 11 V) BOSCH model A 250 00 1088

Electrical system:

Voltage:	12 V, negativ earth
Generator:	Make: BOSCH 0120 339 526 Type: three phase type Power: 14 V, 28 A = 392 W
Battery:	1 with 12 V, lead acid type Rating: 135 Ah at 20 hours rating

Exhaust system:

Make:	EBERSPÄCHER or LEISTRITZ
Type:	Absorptions-reflexion type
Model:	EBERSPÄCHER 16.47.183.01.0.00 or 16.47.183.02.0.00 or LEISTRITZ 432.6454 or 432.6483
Location:	150 mm on the left side of the engine; mouth upwards, 2580 mm above ground
Dimensions of silencer body:	2 versions, 714 mm resp. 650 mm length, diameter of silencer 110 mm, diameter of exhaust pipe 55 mm

TRANSMISSION:

Clutch:

Main clutch and p.t.o. clutch:

Make:	FICHTEL & SACHS AG. or LUK
Type:	Dry double clutch with 2 plates included in the same clutch pressure plate but independent operated, the one acting for the power take-off, the other for the gearbox
Model:	F & S DUT 310/310 or LUK DT 310/310
Number of plates:	2
Diameter of plates:	310 mm
Method of operation:	Main clutch operated by pedal, p.t.o. clutch operated by hand lever
Front wheel drive clutch:	Wet multiplate clutch, 135 mm dia, mechanically acting, hand lever operated

Gearbox:

Make:	Own make
Type:	Mechanically acting gear box
Model:	TW 357
Basis model I:	8 forward and 8 reverse speeds 25 km/h
Basis model II:	As on tested tractor 8 forward and 8 reverse speeds 30 km/h

Super crawler group:	Spur gear reduction with clutch Reduction ratio: 4,671 With basis model I; 16 forward and 16 reverse speeds 25 km/h With basis model II; 16 forward and 16 reverse speeds 30 km/h
2nd forward group:	With basis model I; 16 forward and 8 reverse speeds, 30 km/h With basis model II; as on tested tractor, 16 forward and 8 reverse speeds, 40 km/h
Torque amplifier group:	Gear reduction with wet multiplate clutches, electrically - hydraulically activated Speed reduction 1 : 0,81; switched by an electric push botton switch With basis model I; 16 forward and 16 reverse speeds, 30 km/h With basis model II; 16 forward and 16 reverse speeds, 40 km/h
Arrangement:	1 lever for group gear (VS, VN, R) and super crawler group 1 lever for the 4 speed gear (1 - 4) 1 handle for the reduction gear (ROAD, FIELD, 0) 1 elec. toggle switch for torque amplifier group 1 push botton switch for super crawler group

Rear axle and final drives:

Make:	Own make
Type	Central axle; pinion and bevel gear, lockable bevel gear differential, acting by planetary gears on rear wheels
Model:	357
Differential lock:	Type: mechanically acting from half axle to differential housing Method of engagement: foot lever operated, lockable and preselectable Method of disengagement: selfdisengaging

Front axle and final drives:

Make:	SIGE-MAILAND or optional ZF-PASSAU
Type:	Steering and driving axle, central type, integrated steering cylinder 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
Model:	ZF - APL 325 or
Optional:	ZF - 1351 with dry disc-brakes and wheelbase 2220 mm SIGE 001 S optional with integrated wet multi-plate-brakes

Optional: automatically locking differential
ZF-PASSAU: multi-plate-clutch-type
SIGE-MAILAND: no-spin-type

Transmission oils:

Capacity:

Gear box, rear axle and hydraulic:	appr. 32 l, MIL-L-2105, SAE 80 W, API GL-4
Rear axle final drives:	appr. 2 x 2,7 l, MIL-L-2105, SAE 80 W, API GL-4
Front axle:	
Front axle differential:	appr. 4,75 l MIL-L-2105 B/C, SAE 90, 85W90, API GL-5
Front axle final drives:	appr. 2 x 0,8 l MIL-L-2105 B/C, SAE 90, 85W90, API GL-5
Oil changing period:	1000 hours or 2 years
Changing interval of filter in suction line:	1000 hours or 2 years

Total ratios and speeds: Basis model I with 2nd forward group, 30 km/h

Group	Gear nr.	Number of engine revolutions for one revolution of driving wheels		Nominal travelling speed at rated engine speed of 2200 rev/min km/h	
-	-	field L	road S	field L	road S
forward normal VN	1	357,67	109,61	1,79	5,83
	2	203,55	62,38	3,14	10,24
	3	135,22	41,44	4,72	15,41
	4	83,88	25,71	7,61	24,84
forward VS	1	293,18	89,85	2,18	7,11
	2	166,85	51,13	3,83	12,49
	3	110,84	33,97	5,76	18,80
	4	68,76	21,07	9,29	30,31
reverse R	1	363,89	111,51	1,75	5,73
	2	207,09	63,46	3,08	10,06
	3	137,57	42,16	4,64	15,15
	4	85,34	26,15	7,48	24,42

gegenüber 30 km/h Getriebe insgesamt um Faktor 1,22 schneller

Basis model II with 2nd forward group, 40 km/h as tested

Group	Gear nr.	Number of engine revolutions for one revolution of driving wheels		Nominal travelling speed at rated engine speed of 2200 rev/min *) km/h	
-	-	field L	road S	field L	road S
forward normal VN	1	293,18	89,85	2,18	7,11
	2	166,85	51,13	3,83	12,49
	3	110,84	33,97	5,76	18,80
	4	68,76	21,07	9,29	30,31
forward fast VS	1	240,79	73,79	2,65	8,65
	2	137,03	41,99	4,66	15,21
	3	91,03	27,90	7,02	22,89
	4	56,47	17,31	11,31	36,90
reverse R	1	295,18	90,46	2,16	7,06
	2	167,99	51,48	3,80	12,41
	3	111,59	34,20	5,72	18,67
	4	69,22	21,21	9,23	30,10

*) Calculated with tyre index radius of 770 mm and test tyre equipment: 18,4/15 - 34 AS

Optional: Basis model II with torque amplifier group LS

forward normal VN	1	293,18	89,85	2,18	7,11
	2	166,85	51,13	3,83	12,49
	3	110,84	33,97	5,76	18,80
	4	68,76	21,07	9,29	30,31
forward fast VN + LS	1	237,95	72,92	2,68	8,76
	2	135,42	41,50	4,72	15,39
	3	89,96	27,57	7,10	23,17
	4	55,80	17,10	11,44	37,34
reverse R	1	295,18	90,46	2,16	7,06
	2	167,99	51,48	3,80	12,41
	3	111,59	34,20	5,72	18,67
	4	69,22	21,21	9,23	30,10
reverse R + LS	1	239,66	73,44	2,66	8,70
	2	136,39	41,80	4,68	15,28
	3	90,60	27,77	7,05	23,00
	4	56,21	17,22	11,36	37,08

POWER TAKE OFF:

One p.t.o. shaft, at rear of tractor, in median plane, 445 mm behind rear axle, 654 mm above ground (764 mm stat. tyre radius)
Dimension: ISO R 500, Typ I (35 mm, 6 splines)

Proportional to engine speed (independent) p.t.o.

Driven by p.t.o. clutch (dry plate type), speed selector, dog clutch, p.t.o. shaft

Speeds:
540/ 632 rev/min at 1880/2200 rev/min engine speed
1000/1123 rev/min at 1958/2200 rev/min engine speed

Transmission ratio: 3,48 resp. 1,96

Optional:

Not on tested tractor
Additional speeds of the proportional to engine speed (independent) p.t.o.:

540/ 742 rev/min at 1600/2200 rev/min engine speed
1000/1320 rev/min at 1667/2200 rev/min engine speed

Transmission ratio: 2,96 resp. 1,67

Engine speed resp. p.t.o. speed indication by needle instrument

Direction of rotation: clockwise viewed from driving end

Proportional to ground speed p.t.o.:

Optional, not on tested tractor

Only engageable when reduction gear is on 0 (NEUTRAL = stationary) or L (FIELD) position. Driven by main clutch (dry plate type), group gear, 4 speed change gear, reduction gear (only in position 0 or L (FIELD)), dog clutch, p.t.o. shaft.

Driving mode (reduction gear in L position):
Travelling distance for 1 revolution of p.t.o.: 0,08120 m with 770 mm tyre index radius
Number of p.t.o. revolutions for 1 revolution of driving wheel: 59,58

Stationary mode (reduction gear on 0 position, tractor not driving):

Speeds at 2200 rev/min rated engine speed:

Basis model I with VS group:

Group gear:	VN	VS	R	-
Gear no.: 1	367	447	360	
2	646	786	633	
3	969	1183	953	
4	1563	1906	1536	
Direction of rotation	clockwise	clockwise	anticlockwise	
	viewed from driving end			

Basis model II with super crawler group (30 km/h):

Group gear:	VN	VS with crawler gear	R	R with crawler gear
Gear no.: 1	447 786 1183 1906	78 138 207 335	444 780 1175 1894	95 167 251 405
Direction of rotation	clockwise	clockwise	anticlockwise	anticlockwise
	viewed from driving end			

Basis model I with torque amplifier group gear (30 km/h):

Group gear:	VN	VS with amplifier group	R	R with amplifier group
Gear no.: 1	367 646 969 1563	452 793 1198 1925	360 633 953 1536	444 780 1173 1892
Direction of rotation	clockwise	clockwise	anticlockwise	anticlockwise
	viewed from driving end			

Basis model II with torque amplifier group gear (40 km/h):

Group gear:	VN	VS with amplifier group	R	R with amplifier group
Gear no.: 1	447 786 1183 1906	551 968 1457 2349	444 780 1175 1894	547 961 1447 2331
Direction of rotation	clockwise	clockwise	anticlockwise	anticlockwise
	viewed from driving end			

Basis model II with VS group (40 km/h)as tested:

Group gear:	VN	VS	R	-
Gear no.: 1	447 786 1183 1906	544 957 1440 2321	444 780 1175 1894	
Direction of rotation	clockwise	clockwise	anticlockwise	
	viewed from driving end			

Middle p.t.o.:	Optional, not on tested tractor Rearward direction, on the left side of the gear box, 186,5 mm left of the median plane of tractor, 680 mm above ground, 806 mm before rear axle Dimension: ISO R 500, Type I (35 mm, 6 splines) No power restriction Driven bei p.t.o. clutch Speed: 1000/1180 rev/min at 1865/2200 rev/min engine speed Direction of rotation: clockwise 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, 775 mm above ground, 382 mm before front axle. Driven by middle p.t.o. and propeller shaft with intermediate bearing. No power restriction Same rotation speeds of middle p.t.o. Direction of rotation: anticlockwise viewed from the driving end
Belt pulley:	Optional, not on tested tractor At rear of tractor, angle 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:

Make:	Own make
Type:	Open center type, draught control with two-stage pull adjustment and upper link sensing, position control, floating position.
Type and number of cylinders:	Single acting hydraulic cylinder, stroke and diameter: 152/85 mm and two additional single acting working cylinders, dia 50 mm
Type of linkage lock for transport:	Hydraulically by throttle valve
Relief valve pressure setting:	17,5 MPa (175 bar)
Opening pressure of cylinder safety valve:	24,5 MPa (245 bar)
Lift pump type:	Gear type pump
Pump delivery rate at minimum pressure:	39 l/min at 2200 rev/min engine speed or optional as on tested tractor: 46 l/min

Transmission between pump and engine:	Pump directly driven by engine by gear transmissions
Type and number of filter:	One filter in the suction part (common filter with gear box)
Time between oil changes:	1000 hours
Time between filter changes:	1000 hours
Oil capacity:	Common oil with gear box and rear axle
Site of oil reservoir:	Gear box and rear axle
Type and number of tapping points:	Up to 6 tapping points (3 independent oil circuits for double acting cylinders)
Location of tapping points:	400 mm behind rear axle, 240 - 420 mm about rear axle, 150 mm right of median plane In accordance to ISO/DIS 5675
Maximum volume of oil available to external cylinders:	20 l in stationary mode
Recommended oil:	SAE 80 W, MIL-L-2105, API GL-4
Optional:	Not on tested tractor WALTERSCHEID linkage quick coupler, category II
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

THREE-POINT-LINKAGE:

In the rear:	Category I/II, in conformity to ISO 730/1 Changing the categories by changing the holed drawbar and adjustment of the three-point linkage "STEYR SIMPLEMATIK" standard linkage, double hole lift arms
In the front:	Not on tested tractor Category II, open center type 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		Category I	Category II
Length	mm	683	825
Width	mm	80	80
Thickness	mm	30	30
Number of holes (with central hole)		5	7
Hole diameter	mm	33	33
Distance between holes	mm	130	115

Height above ground *)	Min. lift rod length (585 mm)	Max. lift rod length (660 mm)	Vertical movement
Max.mech. advantage Liftarm 200 mm	from 450 to 995 mm	from 210 to 815 mm	545/605 mm
Min.mech. advantage Liftarm 240 mm	from 337 to 980 mm	from 95 to 815 mm	643/720 mm

*) Calculated with tyre stat. radius of 764 mm in the rear and 565 mm in the front.

Method of changing: By power lift, lift rod length and changing the lift rod - lift arm coupling point

Distance to rear axle: 985 mm, lower links 900 mm horizontally

Horizontal distance to power take-off shaft end (rear): 540 mm

TRAILER HITCH:

	Own make
Type:	Fork type
Height above ground:	482/535/840/868 mm
Distance of hitch point from rear axle axis horizontally:	497 mm
Distance of hitch point from power take-off shaft end:	
vertically:	below 172, 144 mm ; about 186, 214 mm
horizontally:	rearwards 52 mm
Diameter of coupling pin:	31 mm
Maximum vertical permissible load:	15 kN

or

	ROCKINGER model 248 U (∿∿ M 4141)
Type:	Fork type
Height above ground:	848/860 mm
Distance of hitch point from rear axle axis horizontally:	544 mm
Distance of hitch point from power take-off shaft end:	
vertically:	above 194/206 mm
horizontally:	rearwards 99 mm
Diameter of coupling pin:	30 mm
Maximum vertical permissible load:	15 kN

or

	ROCKINGER model 273 J (∿∿M 4097)
Type:	Fork type
Height above ground:	706/ 747/789/830 mm
Distance of hitch point from rear axle axis horizontally:	587 mm
Distance of hitch point from power take-off shaft end:	
vertically:	above 56/93/135/176 mm
horizontally:	rearwards 162 mm

Diameter of coupling pin:	33 mm
Maximum vertical permissible load:	15 kN

or

ROCKINGER model 248 JB (∿∿M 4121)

Type:	Fork type
Height above ground:	701/752/784/835 mm
Distance of hitch point from rear axle axis horizontally:	587 mm
Distance of hitch point from power take-off shaft end:	
vertically:	about 47/98/130/181 mm
horizontally:	rearwards 162 mm
Diameter of coupling pin:	30 mm
Maximum vertical permissible load:	15 kN

or

ROCKINGER model 274 RA (∿∿M 4392)

Not automatically acting

Type:	Fork type
Height above ground:	453/532/628/708/758/808/858/908 mm
Distance of hitch point from rear axle axis horizontally:	630 mm
Distance of hitch point from power take-off shaft end:	
vertically:	below 201/122/26 mm above 54/104/154/204/254 mm
horizontally:	rearwards 205 mm
Diameter of coupling pin:	30 mm
Maximum vertical permissible load:	15 kN

or

ROCKINGER model 248 RB (MM 4391)

Automatically acting

Type:	Fork type
Height above ground:	453/532/628/708/758/808/858/908 mm
Distance of hitch point from rear axle axis horizontally:	630 mm
Distance of hitch point from power take-off shaft end:	
vertically:	below 201/122/26 mm above 54/104/154/204/254 mm
horizontally:	rearwards 205 mm
Diameter of coupling pin:	30 mm
Maximum vertical permissible load:	15 kN

or

Own make

Type:	Fork type
Height above ground:	486/844/864 mm
Distance of hitch point from rear axle axis horizontally:	457 mm
Distance of hitch point from power take-off shaft end:	
vertically:	below 168 mm, about 190/210 mm
horizontally:	rearwards 12 mm
Diameter of coupling pin:	28 mm
Maximum vertical permissible load:	15 kN

TOWING HITCH:

Type:	Fork type
Height above ground:	710 mm
Distance from front axle:	frontwards from 420 to 700 mm (dependent from number of front ballast)
Diameter of coupling pin:	31 mm

STEERING:

Method of operation:	Steering wheel acting on front wheels
Make:	DANFOSS or ZF-SCHWÄBISCH GMÜND
Type:	Hydrostatic steering
Model:	DANFOSS OSPC 125 OR or ZF 8492
Working pressure:	10,0 MPa (100 bar)
Oil capacity:	3,2 l
Capacity of oil case:	1,2 l and 0,15 l volume for distress
Oil change period:	-
Filter:	1000 hours change period, STEYR 480 47 07 48
Recommended oil:	ATF Dexron D ZF 76 32 141 102
Pump delivery rate at rated engine speed (2200 rev/min):	31,7 l/min
Steering cylinder:	One double acting cylinder, integrated in block of front axle, formed as a part of the steering connection rod
Acting piston area:	ZF APL 325: 20,2 cm^2 SIGE 001: 20,6 cm^2
Number of revolutions of steering wheel for the whole steering lock:	3,2

BRAKES:

Service brake:

Make:	Own make
Type:	Simplex drum brakes 230 mm diameter, 60 mm width
Method of operation:	Pedal operated, hydraulically transmission
Optional front braking device:	ZF-axle 1351 with dry disc brakes SIGE 001 S with wet multiplate brakes
Trailer braking take-off:	Optional, not on tested tractor In conformity with national regulations

Parking brake:

Type:	Mechanically acting on separate drum brakes 230 mm diameter, 30 mm width
Method of operation:	Hand lever with ratched, mechanically transmission

Steering assistance brake: Operated by divided pedal of service brake, pedals disconnectable by a flap.

Optional front braking device disconnected by a valve when steering assistance brake is activated

STEERING WHEELS:

Number:	2, steering and driving function
Location:	In front of tractor
Tyres:	Pneumatics, radial or diagonal carcass 13,6 - 24 AS, 6 PR; rim: W 11 x 24 Maximum permissible load on each tyre: 10520 N (1070 kp) at 1,7 bar inflation pressure and 40 km/h 18395 N (1875 kp) at 2,2 bar inflation pressure and with speed limit of 8 km/h
Track width:	1610 mm with test tyre equipment only 1 convenient track width
Optional front tyre equipment:	11,2 - 24 AS, 6 PR; rim: W 9 x 24 12,4 - 24 AS, 6 PR; rim: W 9 x 24 14,5 - 20 MPT, 8 PR; rim: 11 x 20 9,5 - 28 AS, 6 PR; rim: W 8 x 28

DRIVING WHEELS::

Number:	2, driving function
Location:	In the rear of tractor
Tyres:	Pneumatics, radial or diagonal carcass 18,4/15 - 34 AS, 8 PR; rim: DW 16 x 34 Maximum permissible load on each tyre: 20130 N (2050 kp) at 1,4 bar inflation pressure and 40 km/h 28180 N (2870 kp) at 1,75 bar inflation pressure and with speed limit of 8 km/h
Track width:	1510 mm (1694 mm by reversed wheels), with adjustable rims: 1445 - 1765 mm
Optional rear type equipment:	13,6 - 38 AS, 6 PR; rim: W 12 x 38 16,9 - 34 AS, 8 PR; rim: DW 14 x 34 18,4 - 30 AS, 8 PR; rim: W 15 L x 30 9,5 - 44 AS, 8 PR; rim: W 7 x 44 9,5 - 48 AS, 8 PR; rim: W 8 x 48

WHEELBASE: 2281 mm

PROTECTIVE STRUCTURE SPECIFICATIONS:

OECD approval number:	CSD 0812/1
Trade name:	Model STEYR 110.01
Manufacturer's name and address:	STEYR-DAIMLER-PUCH AG., Steyr, Austria
Protective device:	Frame, completeable to full closed cab, not tilting Strength tested to national legislation (identical to OECD-Code).

Material used in the construction and dimension:

Main frame:	Welded sheet construction with integrated pressed sheet metal roof
Mounting:	Rubber mounted, in front on consoles, in the rear on the rear axle
Cladding:	Protective structure is fitted only with the front windscreen. When completed to a full cab the side claddings are glassdoors with a metal frame and turnable full glass side windows. The rear cladding is a windscreen which can be turned out.
Roof:	Sheet metal roof, integrated in the protective structure.
Padding:	Floor: rubber mat Side mudguards: foam rubber cladding Roof: cladding with synthetic material
Type of windscreen:	SEKURIT ESG-H E6 43 R-00125, testing nr. E-00070
Optional:	
OECD approval number:	CSD 0813/1
Model:	STEYR 110.02 Same protective structure, 120 mm lower Strength tested to national legislation (identical to OECD-Code).

DRIVER'S SEAT:

Make and type:	Grammer DS 85 H/3; tested on tractor, according to national regulation (Prot.Nr. 163/83)
Type of suspension:	X-lever with 2 tension springs, curve-disc and ball-bearing, adjustable to driver's weight
Type of damping:	Hydraulically damping
Range of adjustment, longitudinal: vertical:	 140 mm 60 mm
or	
Make and type:	As on tested tractor Klepp Elastomat 1050 H-S; according to national regulation (Prot.Nr. 007/84)
Type of suspension:	2 parallel levers with a column-guiding and 2 tension springs
Type of damping:	Hydraulically damping
Range of adjustment, longitudinal: vertical:	 85 mm 60 mm

LIGHTING: Unrestricted beam angle of head light in plane view: 227 mrad (13°)

	*) Height above ground of centre mm	Size mm	**) Distance from outside edge of tractor to centre mm
Head lights	1050	135 x 115	885
Side lights	1640	65 x 70	260
Rear lights	1645	65 x 70	260
Brake lights			
Direction indicators front	1640	65 x 70	165
Direction indicators rear	1645	65 x 70	165
Reflectors	1665 765	35 x 60 80 dia	213 580

*) Measured with tyre stat. radius at rear 764 mm and 565 mm at front
**) With overall width of 2060 mm (measured on the outside edge of the front wheels)

TEST CONDITIONS

Track setting and tyre equipment:

Front: 1610 mm
Rear: 1510 mm

Front wheels: 13,6 - 24 AS, PR 6; rim: W 11 x 24
Rear wheels: 18,4/15-34 AS, PR 8; rim: DW 16 x 34

Overall dimensions:

	Length	Width *)		Height at top of	
		max.	min.	exhaust silencer	protective structure
	mm	mm	mm	mm	mm
With ballast	4115	2281	2060	2555	2520/ 2560 **)
Without	3868	2281	2060	2555	2520/ 2560 **)

*) Measured on the outside edges of the front wheels; max. width by reversed rear wheels.
**) When fitted with a roof hatch.

Ground clearance:

Clearance-limiting part:
440 mm under the front axle mounting console
423 mm under the trailer hitch mounting console
455 mm under the four-wheel drive output

Tractor mass and ballasting:

(without driver but with tanks full, with protective structure)

		Front	Rear	Total
Without ballast	kg	1240	2170	3410
With ballast	kg	1923	3000	4923

Ballast:

	Weights		Water kg
	Number	Total mass kg	
Front	10	349	280
Rear	4 + 2	284	2 x 300
Additional	-	-	-

Fuel and lubricants used in tests:

Fuel:	Diesel fuel
Type:	ELAN, according to DIN 51601
Specific gravity at 15°C:	0,845 kg/l

Oils:

	Recommended:	Used during test:
Engine oil:	One range viscosity oil	
Type:	API CD, MIL-L-2104 C	SHELL RIMULA X 10 W
Viscosity:	SAE 30 summer SAE 20 W/20 winter	
Transmission oils:		
Type:	API GL-4, MIL-L-2105	SHELL SPIRAX EP 80
Viscosity:	SAE 80 W	
Hydraulic fluid:		
Type:	Common oil circuits with transmission	
Steering oil:	Automatic Transmission Fluid	
Type:	ATF Dexron or ATF M 2 C 33 E/F	SHELL ATF Dexron II
Transmission oil of front axle:		
Type:	API GL-5, MIL-L-2105 B	SHELL SPIRAX EP 90
Viscosity:	SAE 90 W	
Recommended grease:	Lithium soap basis NLGI2 (multigrade grease)	
Number of lubrication points:	17	

TEST RESULTS

COMPULSORY TEST:

Main power take-off performance

Date and location of tests: 8.1.1985, Wieselburg, Austria
Type of dynamometer: SCHENK-eddy-current brake W 780

Main test on: ISO R 500, Typ 2 (DIN 9611) - 1000 rev/min p.t.o.

Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
MAXIMUM POWER					
Maximum power - 2 hours test					
55,48	2200	1123	13,03 15,42	235	3,598
Standard p.t.o. speed					
56,50	1958	1000	12,78 15,13	226	3,735
56,11	1880	960	12,58 14,89	224,5	3,768
The speed recommended by the manufacturer for drawbar work.					
55,48	2200	1123	13,03 15,42	235	3,598
PART LOADS Governor hand lever in position giving maximum power					
(i) 85 % of torque at maximum power					
48,68	2269	1159	11,73 13,88	241	3,506
(ii) unloaded					
0	2361	1206	3,12 3,69	-	-
(iii) 50 % of the load defined in (i)					
25,05	2336	1193	7,24 8,57	289	2,923
(iv) maximum power					
55,48	2200	1123	13,03 15,42	235	3,598
(v) 25 % of the load defined in (i)					
12,62	2354	1202	5,10 6,04	404	2,090
(vi) 75 % of the load defined in (i)					
37,08	2305	1177	9,46 11,19	255	3,314

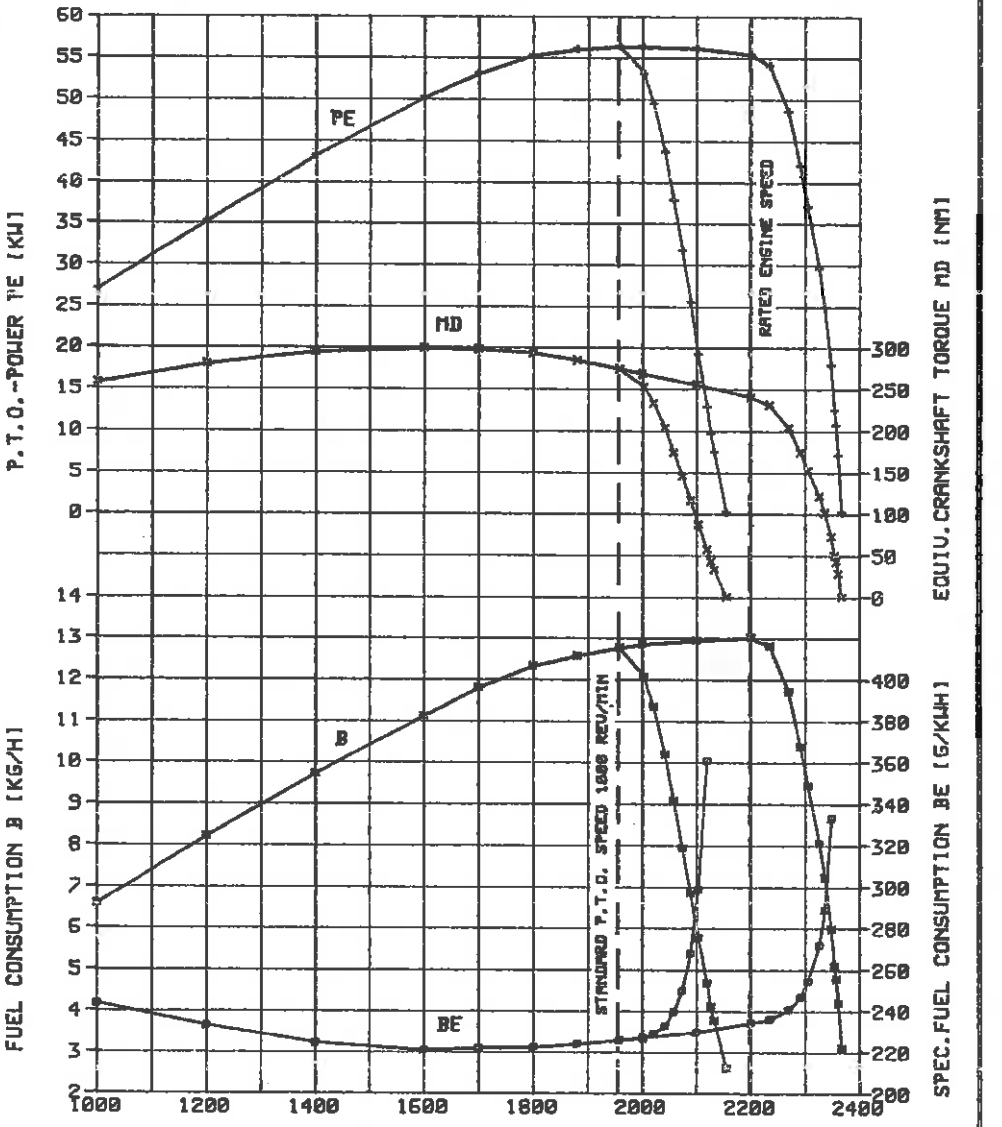
Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
PART LOADS Governor hand lever in position giving standard p.t.o. speed at full load					
(i) 85 % at torque at standard p.t.o. speed					
49,54	2021	1032	11,37 13,45	229,5	3,682
(ii) unloaded					
0	2154	1100	2,64 3,13	-	-
(iii) 50 % of the load defined in (i)					
25,61	2089	1067	6,87 8,12	268	3,152
(iv) maximum power at standard p.t.o. speed					
56,50	1958	1000	12,78 15,13	226	3,735
(v) 25 % of the load defined in (i)					
12,98	2119	1082	4,69 5,55	361	2,339
(vi) 75 % of the load defined in (i)					
37,84	2058	1051	9,08 10,75	240	3,521
STANDARD SPECIFIC FUEL CONSUMPTION: 241/289 - 229,5/268 g/kWh					

No load maximum engine speed: 2361 rev/min
Equivalent crankshaft torque
at maximum power: 240,8 Nm
Maximum equivalent crankshaft torque: 299,9 Nm at 1600 rev/min of engine

Mean atmospheric conditions: temperature: 15°C
pressure: 984 mbar
humidity: 67 %

Maximum temperatures: coolant: 84°C
engine oil: 106°C
fuel: 41°C
air intake: 20°C

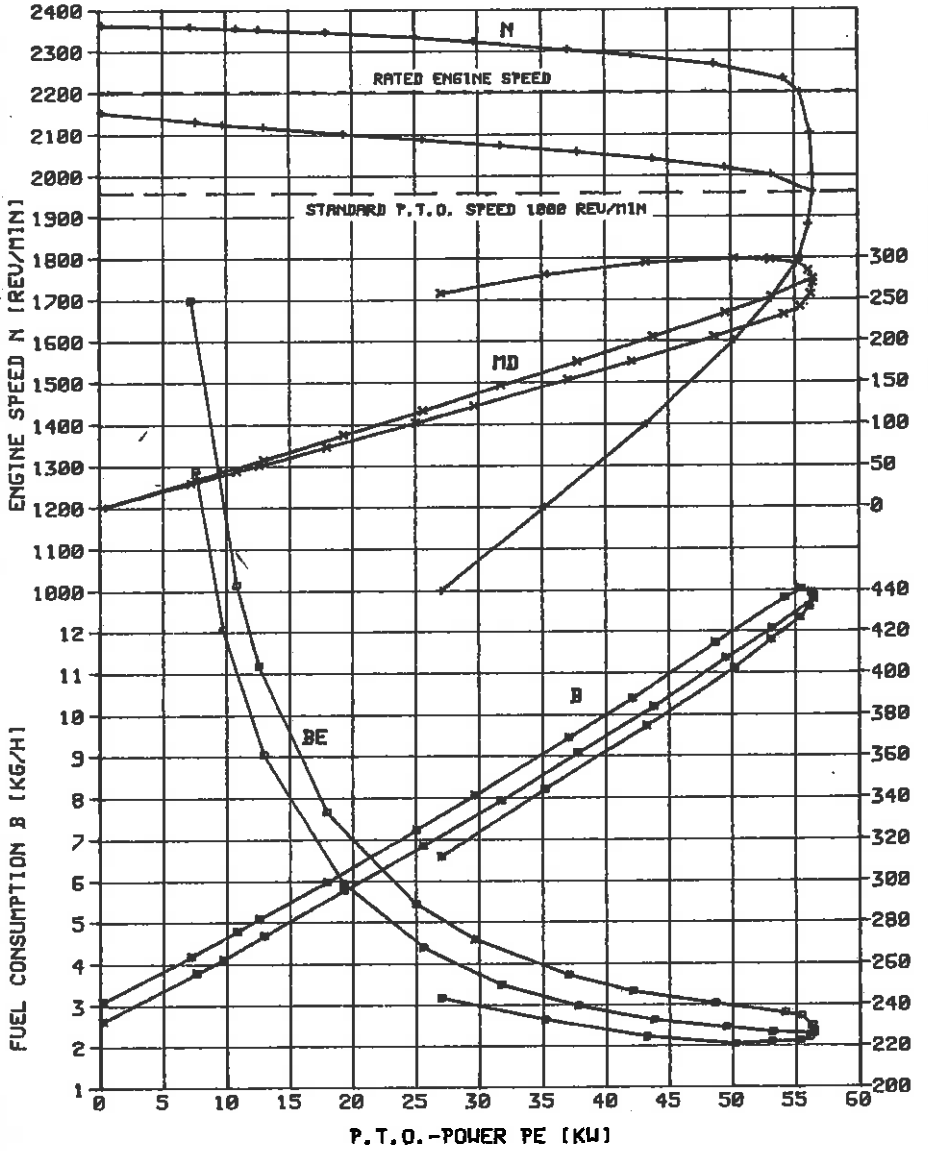
BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.:086/85	1000 rev/min P.T.O.-TEST	STEYR TYP 8090 A MOT.TYP WD 411.88



ENGINE SER.NR.: 411.88-999	ATM.PRESSURE : 984 MBAR	FUEL TEMP.: 41 C	SIGNATURE
TRAKTOR SER.NR.: 357.25-88452	AIR TEMPER. : 15 C	D.OF TESTS: 1985-01-08	
FUEL : B.B45/15 C	COOLANT TEMP.: 84 C	TEST NO. : 141/ZA 1388	
ENGINE OIL : AIMALA X 10 W	OIL TEMP. : 106 C	CURVES NO.: 1	REITHER

29-MAY-85 DUR.:0100846-DL883;MKU118;MRL28-22

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 086/85	1000 rev/min P.T.O.-TEST	STEYR TYP 8090 A MOT.TYP WD 411.88



ENGINE SER.NR.: 411.88-999	ATM.PRESSURE : 984 MBAR	FUEL TEMP.: 41 C	SIGNATURE
TRAKTOR SER.NR.: 357.25-08452	AIR TEMPER. : 15 C	D.OF TESTS: 1985-01-08	
FUEL : B.045/15 C	COOLANT TEMP.: 84 C	TEST NO. : 141/2A 138A	
ENGINE OIL : RIMULA X 10 W	OIL TEMP. : 106 C	CURVES NO.: 2	REITHER

25-MAY-85 DUR.:0100846-DL003.MRU116.MKL28-22

Drawbar performance:

Date of tests: 5. - 6.2.1985
Type of track: Concrete
Height of drawbar above ground: 470 mm ballasted and unballasted

Gear No.	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmosph. conditions		
								Fuel	Coolant	Engine oil	Temperature	rel.humidity	Pressure
	km/h	kW	N	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	%	mbar
(i) Maximum power (unballasted) tyre inflation pressure in the front 1,6 bar, in the rear 1,1 bar													
VN 2L	3,527	32,92	33601	2275	15	-	-	31	74	97	6	75	999
VS 2L	4,246	39,63	33598	2248	15	316,5	2,671	30	74	96	6	76	999
VN 3L	5,348	45,18	30417	2200	11,5	288,5	2,930	29	74	96	6	76	999
VS 3L	6,731	46,39	24810	2200	8,5	281	3,009	28	74	96	6	78	999
VN 1S	6,822	46,40	24488	2200	8,5	281	3,009	28	73	95	6	78	999
VS 1S	8,440	46,19	19703	2200	7	282	2,995	28	73	94	6	78	999
VN 1L	9,109	45,81	18104	2200	6,5	284,5	2,971	27	72	94	6	78	999
VS 4L	11,212	44,79	14381	2200	5,5	291	2,905	26	72	93	5	79	999

Gear No.	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmosph.conditions		
								Fuel	Coolant	Engine oil	Temperature	rel.humidity	Pressure
	km/h	kW	N	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	%	mbar
(ii) Five-hour-test at 75 % of pull at maximum power													
VN 3L	5,750	36,28	22718	2269	6	323	2,616	42	73	101	7	58	989
(iii) Five-hour-test at pull corresponding to 15 % wheelslip in test (ii)													
VN 2L	3,364	43,00	46010	2233	15	299	2,828	44	75	103	6	88	986
(iv) Maximum power (ballasted) tyre inflation pressure in the front 1,6 bar, in the rear 1,1 bar													
VN 1L	1,973	25,26	46097	2307	15	-	-	26	75	94	3	60	1004
VS 1L	2,386	30,55	46099	2290	15	349	2,421	26	74	95	3	60	1004
VN 2L	3,353	42,92	46099	2230	15	301,5	2,801	27	73	95	3	62	1004
VS 2L	4,246	45,00	38154	2200	10,4	289,5	2,918	28	75	96	3	62	1004
VN 3L	5,395	45,40	30290	2200	7,9	287	2,944	29	74	96	3	62	1004
VS 3L	6,679	45,30	24418	2200	6,4	287,5	2,938	29	74	96	4	62	1004
VN 1S	6,772	45,26	24058	2200	6,3	288	2,935	29	74	96	4	63	1004
VS 1S	8,335	44,60	19260	2200	5,3	292	2,892	30	74	96	5	64	1004
VN 4L	8,982	44,21	17718	2200	4,9	294,5	2,867	30	74	96	5	64	1004
VS 4L	11,018	42,85	14001	2200	4,2	304	2,779	30	74	96	5	64	1004
VN 2S	12,206	41,70	12300	2200	3,9	312,5	2,704	30	75	96	5	64	1004

Total oil consumption during 10 hours duration of tests (ii) and (iii): 48 g/h

TURNING SPACE AND TURNING CIRCLE:

Wheel equipment: front: 13,6 - 24, PR 6
rear: 18,4/15 - 34 AS, PR 8

Track of wheels: front: 1610 mm
rear: 1510 mm

Results *)	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning space	3,95/4,20	3,90/4,25	5,30/4,95	5,30/5,00
Radius of turning circle	3,65/3,90	3,62/3,97	5,02/4,67	5,02/4,72

*) Four-wheel-drive switched: ON/OFF

LOCATION OF CENTRE OF GRAVITY:

	mm
Height above ground	856
Distance forward from the vertical plane containing the axis of the rear wheels	822
Distance from the median plane of the tractor, right-side	1

BRAKING:

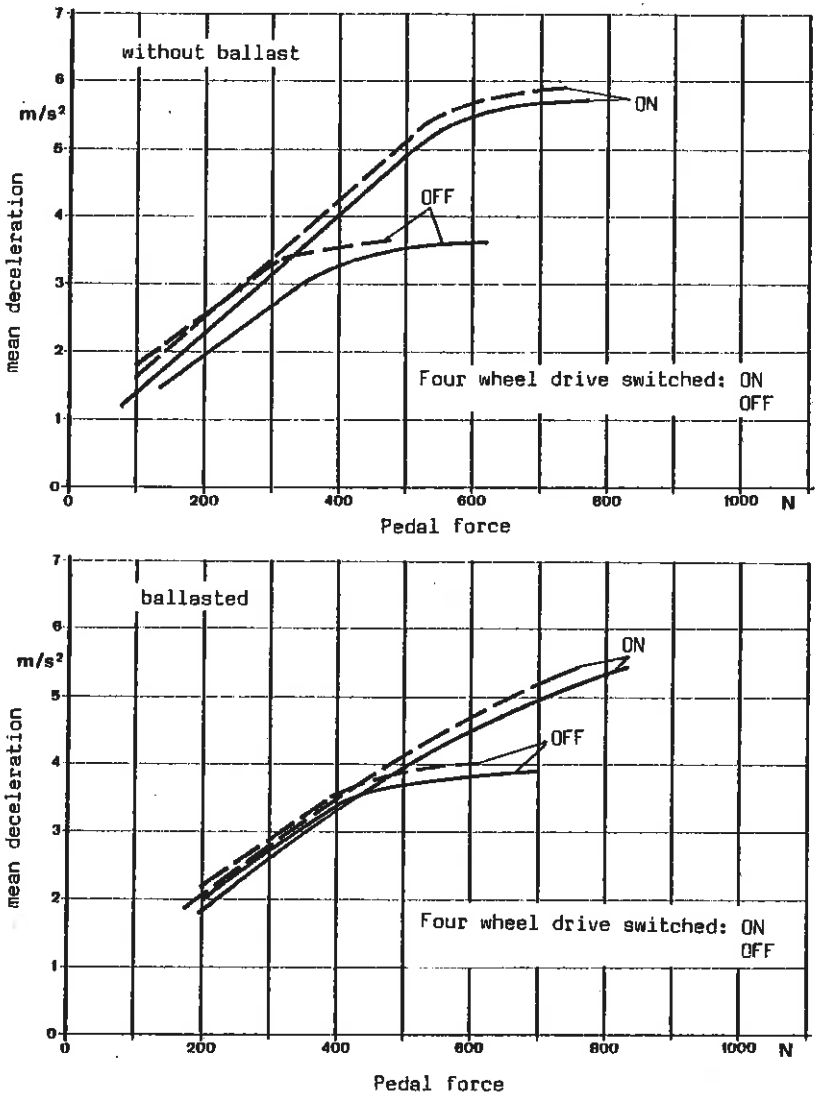
Date of tests: 6.1.1985
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)

Tractor mass during brake tests (with driver):

	Front kg	Rear kg	Total kg
Ballasted	1938	3060	4998
Unballasted	1255	2230	3485

Service brake:

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



Speed before application of brakes: 38,30 km/h
The tractor brakes were heated by towing of the tractor for 1 km.

Maximum deviation of tractor from its original course:	None
Abnormal vibration:	None

Parking brake device test:

	Ballasted tractor on 18 %-slope		Unballasted tractor on 12 %-slope with trailer of 3000 kg	
	up	down	up	down
Braking device control force	70 N	60 N	110 N	100 N

MEASUREMENT OF EXTERNAL NOISE LEVEL:

Date of tests:	10.12.1984
Type of sound level meter:	BRÜEL & KJAER 2200 and 2308
Type of track:	Concrete
Gear number:	VS 4 S
Travelling speed before acceleration:	30 km/h
Sound level:	85 dB(A)

NOISE MEASUREMENT AT DRIVER'S EAR:

Date of tests:	10.12.1984
Type of sound level meter:	BRÜEL & KJAER 2200 and 2308
Type of track:	Concrete

Gear	Drawbar pull at which the tractor develops the max. sound level	Measured travelling speed	Sound level
-	kN	km/h	dB(A)
All openings closed (tractor fitted with cab)			
VN 1 L	26,52	2,17	84,5
VS 1 L	27,58	2,63	84,0
VN 2 L	27,06	3,76	84,5
VS 2 L	23,44	4,66	86,5
VN 3 L	27,60	5,54	85,0
VS 3 L	24,01	6,80	85,5
VN 1 S	25,13	6,81	85,0
VN 1 S	light load	7,84	84,5
VS 1 S	19,75	8,45	85,0
VN 4 L	17,81	9,06	84,5
VS 4 L	13,65	11,17	85,0
VN 2 S	12,86	12,39	85,5
VS 2 S	9,84	15,18	85,0
VN 3 S	7,39	18,83	85,0
VS 3 S	5,07	23,46	85,5
VS 4 S	light load	35,19	86,5

*) The VN 1 S gear corresponds to the nominal travelling speed nearest to 7,5 km/h.

POWER LIFT AND HYDRAULIC PUMP PERFORMANCE:

Date and location of tests: 21.1.1985, Wieselburg, Austria

Hydraulic fluid:

Make and type: SHELL SPIRAX EP 80

Viscosity: SAE 80 W, API GL-4, MIL-L-2105

Type of hydraulic system: Open center type

Hydraulic fluid temperature at beginning of test: 60°C

Type of linkage lock for transport: Hydraulically by throttle valve

Opening pressure of the cylinder overpressure safety valve (manufacturers specification): 24,5 MPa (245 bar)

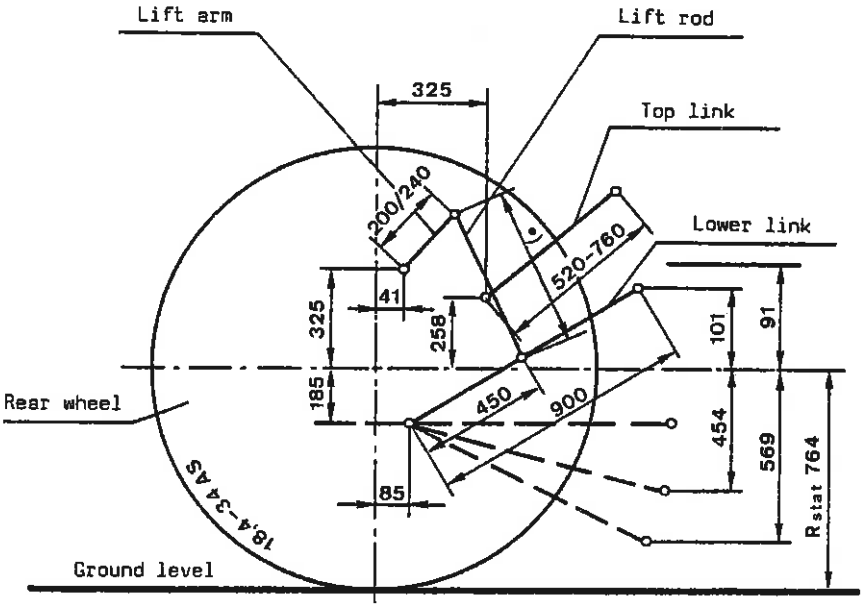
Power lift:

	**)Height of lower hitch points above ground in down position mm	Vertical movement (lift rod length 625 mm) mm	**) Max. force exerted through full range kN	Corresponding pressure of hydraulic fluid MPa	**) Moment about rear axle kNm	Max. tilt angle of mast over range of lift ⟲ degrees
At hitch points	310/195	555/660	20,6/17,4 38,2/33,2*)	16,7 (167 bar)	20,0/17,1 37,6/32,7*)	-
On the frame 460 mm mast height	310/195	555/660	16,5/14,3 29,9/25,4*)	16,7 (167 bar)	26,3/22,8 47,7/40,5*)	from +3° to 0° and to +3°
On the frame 520 mm mast height	310/195	555/660	15,8/13,4 29,0/25,5*)	16,7 (167 bar)	25,2/21,4 46,3/40,7*)	from -1° to 0° and to +5°

*) with additional working cylinders
**) max./min. mechanical advantage

Hydraulic power test:

Sustained pressure of the relief valve:	18,5 MPa (185 bar)
Opening pressure of the relief valve:	18,0 MPa (180 bar)
Pump delivery rate at minimum pressure and rated engine speed:	39 l/min or optional as on tested tractor: 46 l/min
Flow rate corresponding to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting and corresponding hydraulic power:	Flow rate: 45,2 l/min Pressure: 16,7 MPa (167 bar) Power: 12,58 kW
Temperature of hydraulic fluid:	60°C
Tapping points used for test:	At rear of tractor



*) Left lift rod adjustable from 585 mm to 660 mm length by a thread, right lift rod adjustable from 545 mm to 660 mm length by gear and thread.

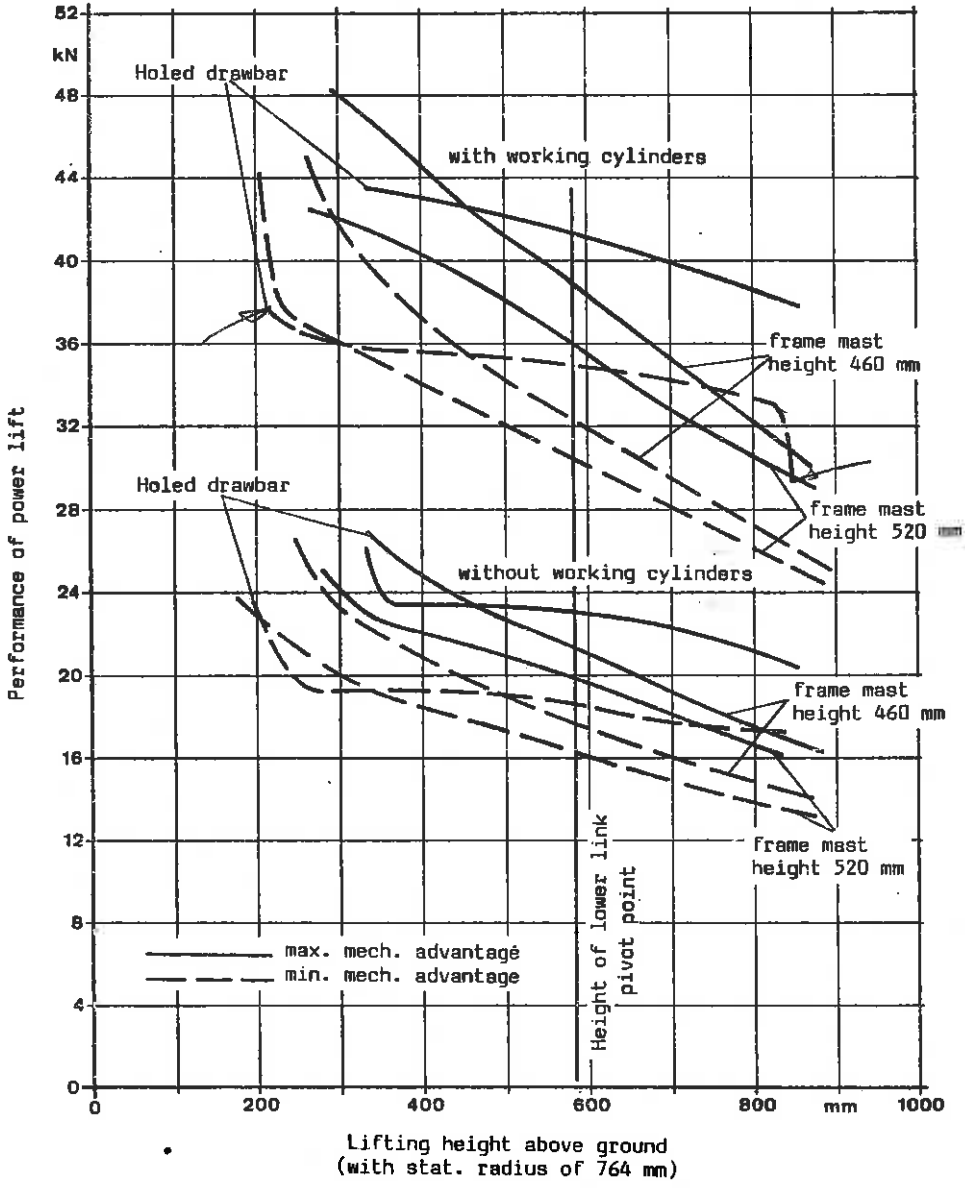
Linkage geometry when connected to the standard frame (mast height 520 mm)

Projected length in side view		Maximum mechanical advantage	Minimum mechanical advantage
Lower links	mm	900	900
Lift arms	mm	200	240
Lift rods	mm	625	625
Top link	mm	650	650
Distance of lift rod connection point from pivot point of lower link	mm	450	450
This dimensions are given relative to the rear wheel centre line, 764 mm above the ground level: Lower link pivot point	mm	85 behind 185 below	85 behind 185 below
Top link pivot point	mm	325 behind 258 above	325 behind 258 above
Lift arm pivot point	mm	41 behind 325 above	41 behind 325 above
Maximum and minimum height of lower link hitch points	mm	101 above 454 below	81 above 569 below
Height of lower link hitch points locked in transport position	mm	from 101 above to 454 below	from 81 above to 569 below

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivot point mm		-400	-350	-300	-240	-200	-150	-35	0	+75	+150	+190	+225	+250	+295
Lifting force at the hitch-points kN (Values for the pressure, calculated with 90 % of sustained oil pressure)	max.mech. advantage				24,6 43,3*	23,3 43,2*	23,2 42,8*	23,2 42,0*	23,0 41,3*	22,6 40,4*	21,9 39,5*	21,4 38,9*	20,9 38,4*	20,6 38,2*	
	min.mech. advantage		20,5 37,1*	19,3 36,1*	19,2 35,8*	19,2 35,6*	19,2 35,5*	19,1 35,2*	18,8 34,9*	18,1 34,4*	17,7 33,9*	17,6 33,6*	17,5 33,3*	17,4 33,2*	
	Maximum force exerted through whole range: 20,6/17,4 kN (2100/1775 kp); 38,2*/33,2* kN (3895* /3385* kp)														
	Calculated oil pressure: 16,7 MPa (167 bar)														
Lifting force at the standard frame 460 mm mast height, 610 mm behind lower links hitch-points kN (Values for the pressure, calculated with 90 % of sustained oil pressure)	max.mech. advantage				26,5 46,6*	25,2 45,2*	24,0 43,3*	22,6 41,0*	21,3 39,0*	20,0 36,6*	18,6 34,4*	18,0 33,1*	17,4 32,0*	17,0 31,4*	16,5 29,9*
	min.mech. advantage			24,1 43,0*	22,0 39,5*	21,2 37,8*	20,2 36,2*	19,0 34,1*	17,8 32,4*	16,7 30,4*	15,8 28,6*	15,3 27,6*	14,9 26,8*	14,6 26,4*	14,3 25,4*
	Maximum force exerted through whole range: 16,5/14,3 kN (1682/1460 kp); 29,9*/25,4* kN (3050*/2590* kp)														
	Calculated oil pressure: 16,7 MPa (167 bar)														
Lifting force at the frame with 520 mm mast height and 610 mm behind lower links hitch-points kN	max.mech. advantage			24,8 42,2*	22,7 41,4*	22,2 40,6*	21,6 39,6*	20,8 37,9*	19,8 36,1*	18,8 34,0*	17,6 32,1*	17,0 31,1*	16,6 30,4*	16,2 29,9*	15,8 29,0*
	min.mech. advantage	23,4 40,6*	21,7 37,9*	20,4 36,3*	19,1 35,2*	18,6 34,4*	18,0 33,4*	17,2 31,9*	16,3 30,4*	15,4 28,9*	14,6 27,4*	14,2 26,6*	13,9 26,0*	13,7 25,6*	13,4 25,5*
	Maximum force exerted through whole range: 15,8/13,4 kN (1610/1365 kp); 29,0*/25,5* kN (2955*/2600* kp)														
	Calculated oil pressure: 16,7 MPa (167 bar)														

*) with additional working cylinders


52
kN
48
44
40
36
32
28
24
20
16
12
8
4
0
Performance of power lift
Holed drawbar
with working cylinders
frame mast height 460 mm
frame mast height 520 mm
Holed drawbar
without working cylinders
frame mast height 460 mm
frame mast height 520 mm
max. mech. advantage
min. mech. advantage
Height of lower link pivot point
0
200
400
600
800
mm
1000
Lifting height above ground
(with stat. radius of 764 mm)

OPTIONAL TESTS

Main power take-off performance

Date and location of tests: 8.1.1985, Wieselburg, Austria
Type of dynamometer: SCHENK eddy-current brake Typ W 780

Main test on: ISO R 500, Typ 1 (DIN 9611) - 540 rev/min p.t.o.

Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h 1/h	g/kWh	kWh/l
MAXIMUM POWER					
Maximum power - 2 hours test					
54,60	2200	632	13,05 15,44	239	3,535
Standard p.t.o. speed					
55,03	1880	540	12,57 14,88	228,5	3,698
55,41	1956	562	12,75 15,08	230	3,673
The speed recommended by the manufacturer for drawbar work					
54,60	2200	632	13,05 15,44	239	3,535
PART LOADS Governor hand lever in position giving maximum power					
(i) 85 % of torque at maximum power					
47,82	2266	651	11,83 14,00	247,5	3,415
(ii) unloaded					
0	2367	680	3,20 3,79	-	-
(iii) 50 % of the load defined in (i)					
24,59	2332	670	7,39 8,74	300,5	2,813
(iv) maximum power					
54,60	2200	632	13,05 15,44	239	3,535
(v) 25 % of the load defined in (i)					
12,40	2353	676	5,24 6,20	422,5	2,000
(vi) 75 % of the load defined in (i)					
36,42	2301	661	9,61 11,38	264	3,201

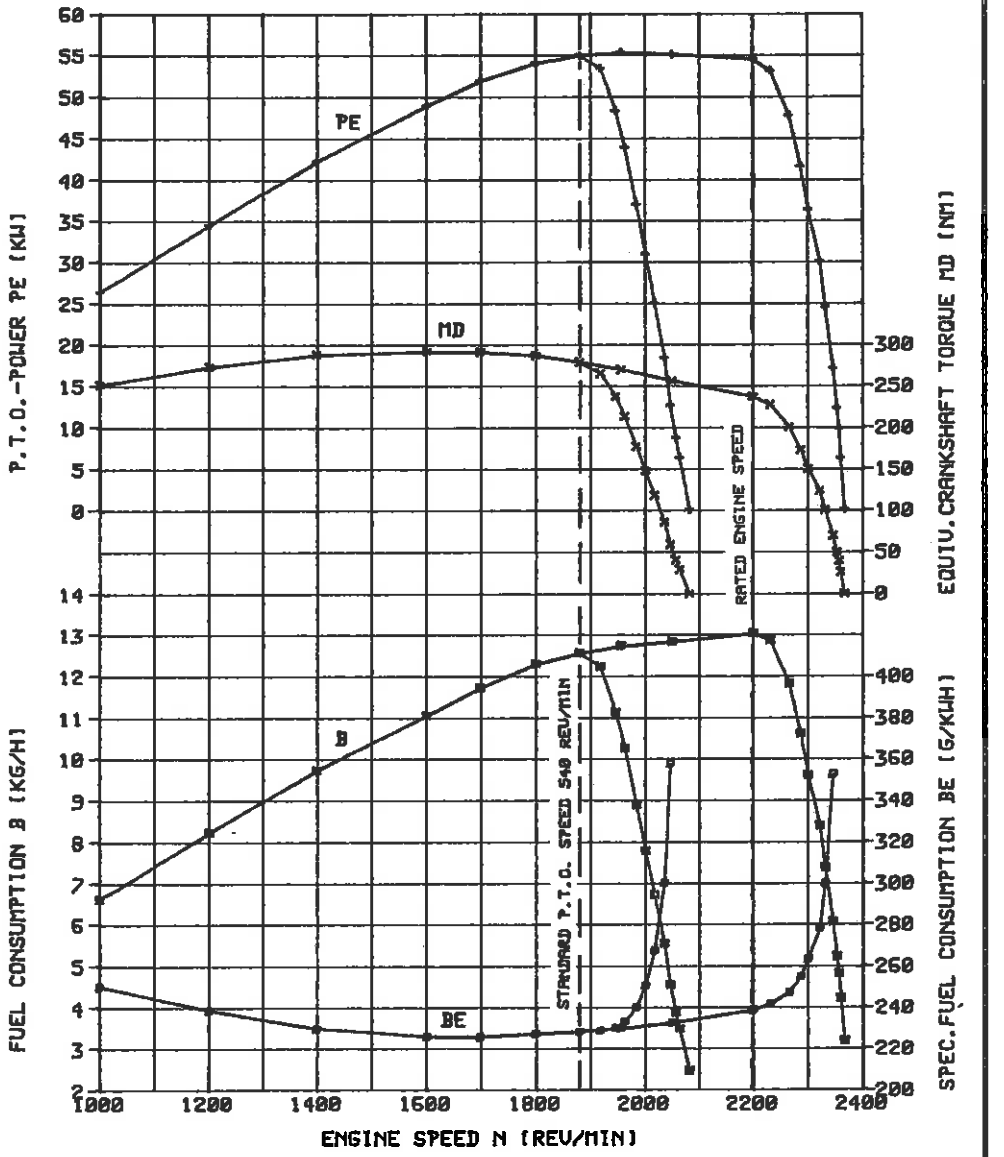
Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
PART LOADS Governor hand lever in position giving standard p.t.o. speed at full load					
(i) 85 % at torque at standard p.t.o. speed					
48,41	1946	559	11,15 13,20	230,5	3,667
(ii) unloaded					
0	2082	598	2,48 2,94	-	-
(iii) 50 % of the load defined in (i)					
25,11	2019	580	6,73 7,96	268	3,153
(iv) maximum power at standard p.t.o. speed					
55,03	1880	540	12,57 14,88	228,5	3,698
(v) 25 % of the load defined in (i)					
12,73	2047	588	4,56 5,39	358	2,360
(vi) 75 % of the load defined in (i)					
37,02	1984	570	8,90 10,54	240,5	3,513
STANDARD SPECIFIC FUEL CONSUMPTION: 247,5/300,5 - 230,5/268 g/kWh					

No load maximum engine speed: 2367 rev/min
Equivalent crankshaft torque
at maximum power: 237 Nm
Maximum equivalent crankshaft torque: 292 Nm at 1600 rev/min of engine

Mean atmospheric conditions: temperature: 15°C
pressure: 984 mbar
humidity: 81 %

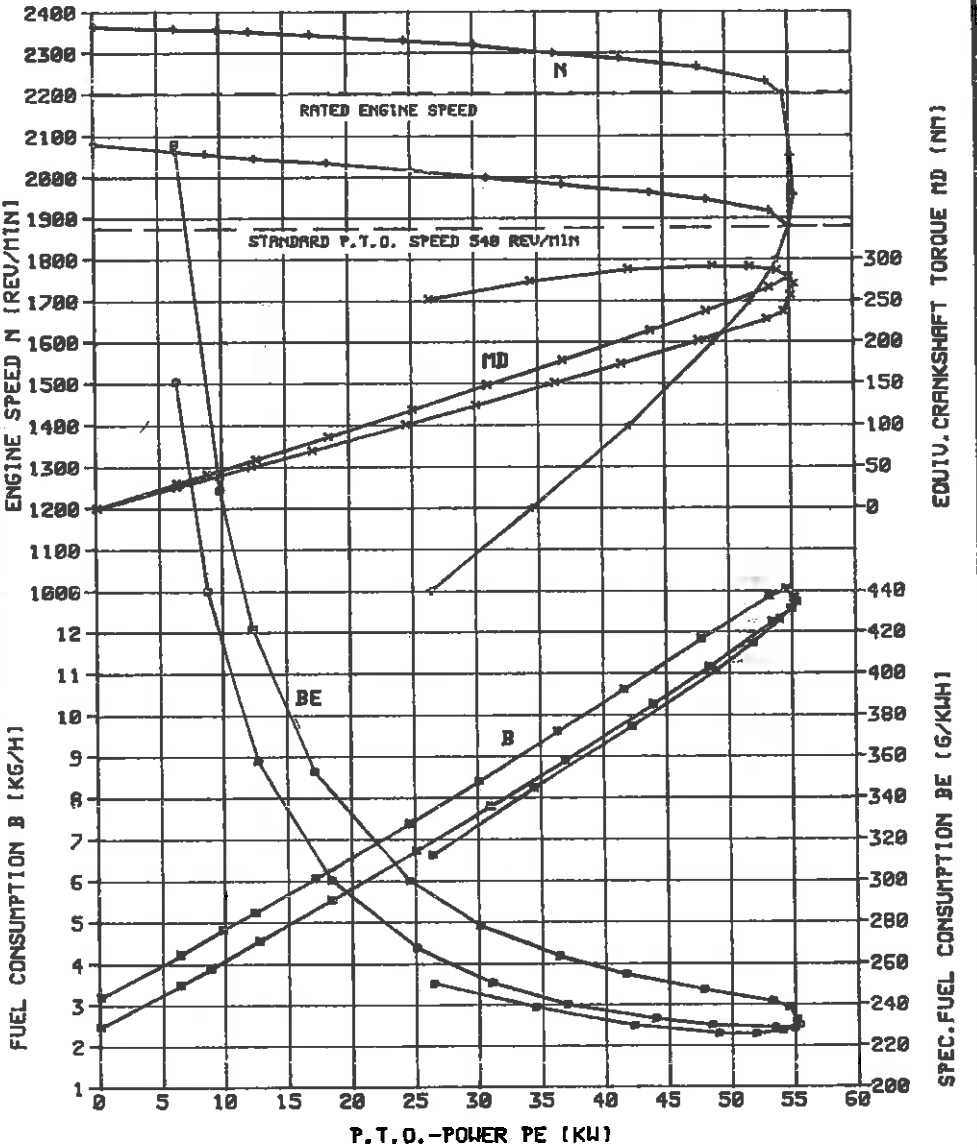
Maximum temperatures: coolant: 85°C
engine oil: 108°C
fuel: 42°C
air intake: 21°C

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 086/85	540 rev/min P.T.O.-TEST	STEYR TYP 8090 A MOT.TYP WD 411.88



ENGINE SER.NR.: 411.88-999	ATM.PRESSURE : 984 MBAR	FUEL TEMP.: 41 C	SIGNATURE
TRACTOR SER.NR.: 357.25-88452	AIR TEMPER. : 15 C	D.OF TESTS: 1985-01-08	
FUEL : B.045/15 C	COOLANT TEMP.: 84 C	TEST NO. : 141/2A 138A	
ENGINE OIL : RINALA X 10 W	OIL TEMP. : 106 C	CURVES NO.: 3	REITHER

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.:086/85	540 rev/min P.T.O.-TEST	STEYR TYP 8090 A MOT.TYP WD 411.88



ENGINE SER.NR.: 411.88-999	ATM.PRESSURE : 984 MBAR	FUEL TEMP.: 41 C	SIGNATURE
TRAKTOR SER.NR.: 357.25-88452	AIR TEMPER. : 15 C	D.OF TESTS: 1985-01-08	
FUEL : 0.845/15 C	COOLANT TEMP.: 84 C	TEST NO. : 141/ZA 1388	
ENGINE OIL : RIMULA X 10 W	OIL TEMP. : 105 C	CURVES NO.: 4	REITHER

25-MAY-85

DOK.:01B0046-DLB85:MR0110:MRL20-21

Engine performance

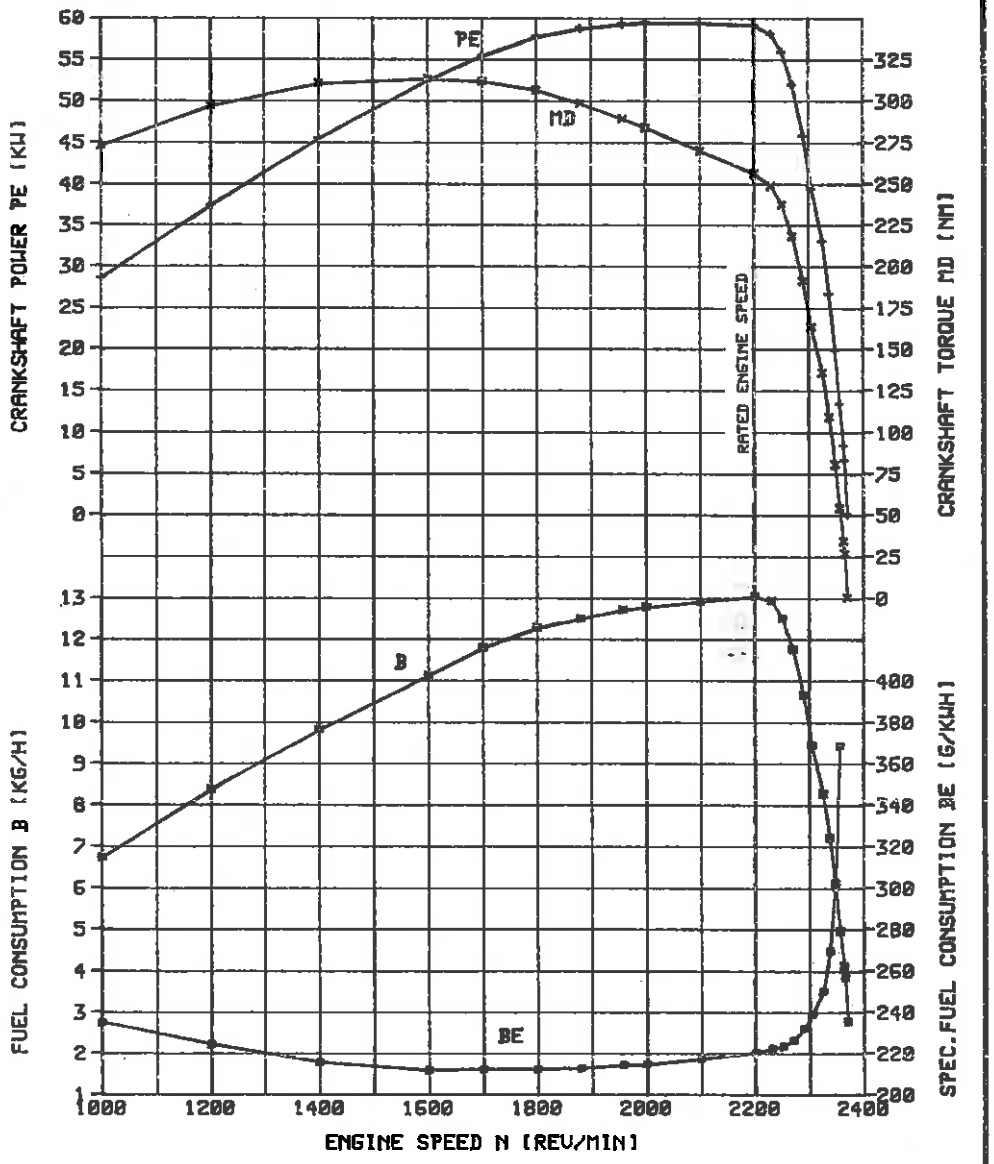
Date and location of test: 12.9.1984, Wieselburg, Austria
Type of dynamometer: SCHENK eddy-current brake W 150

Power	Engine speed	Fuel consumption			Specific energy
		hourly		specific	
kW	rev/min	kg/h	l/h	g/kWh	kWh/l
Maximum power - 2 hours test					
59,18	2200	13,07	15,46	221	3,827
Standard p.t.o. speed - 1000/540 rev/min					
59,33	1958	12,73	15,06	214,5	3,939
58,75	1880	12,51	14,81	213	3,967
The speed recommended by the manufacturer for drawbar work					
59,18	2200	13,07	15,46	221	3,827
Part loads					
(i) 85 % of torque at maximum power					
51,98	2270	11,77	13,93	226,5	3,731
(ii) unloaded					
0	2370	2,78	3,29	-	-
(iii) 50 % of the load defined in (i)					
26,76	2337	7,22	8,54	269,5	3,134
(iv) maximum power					
59,18	2200	13,07	15,46	221	3,827
(v) 25 % of the load defined in (i)					
13,43	2356	4,95	5,86	369	2,291
(vi) 75 % of the load defined in (i)					
39,53	2305	9,46	11,19	239	3,532

Optimum fuel consumption: 211 g/kWh at 54,4 kW and 1700 rev/min
No load maximum engine speed: 2370 rev/min
Torque at maximum power: 256,9 Nm
Maximum torque: 313,2 Nm at 1600 rev/min of engine

Mean atmospheric conditions:	temperature:	15°C
	pressure:	989 mbar
	relative humidity:	85 %
Maximum temperatures:	coolant:	87°C
	engine oil:	104°C
	fuel:	34°C
	engine air intake:	15°C

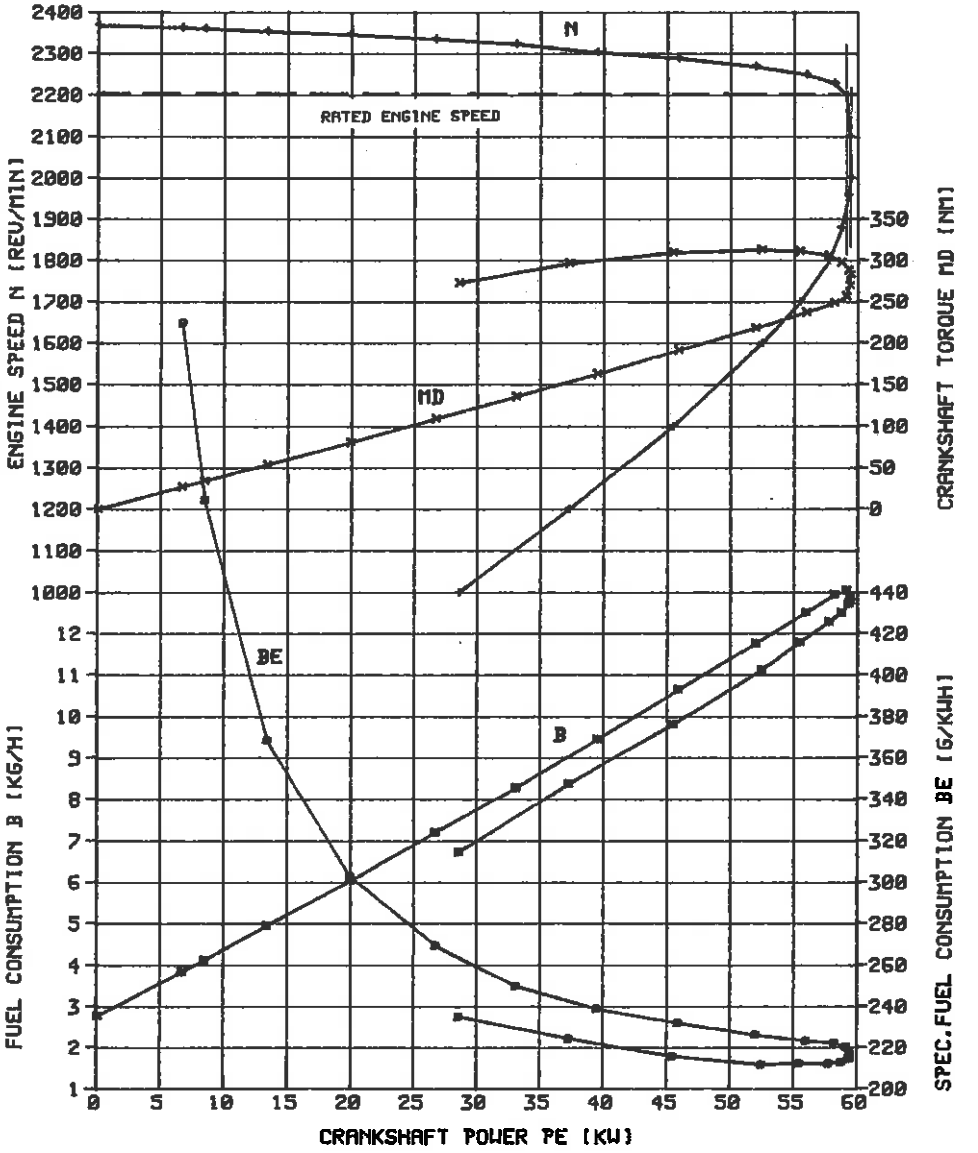
BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 086/85	ENGINE-TEST	STEYR TYP 8090 A MOT.TYP WD 411.88



ENGINE SER.NR.: 411.88-999	ATM.PRESSURE : 989 MBAR	FUEL TEMP.: 34 C	SIGNATURE
TRAKTOR SER.NR.: 357.25-88452	AIR TEMPER. : 15 C	D.OF TESTS: 1984-09-12	
FUEL : 0.845/15 C	COOLANT TEMP.: 87 C	TEST NO. : 148/M 183	
ENGINE OIL : RIMULA X 10W	OIL TEMP. : 104 C	CURVES NO.: 5	LUGER

28-MAY-85 DUR.:81000846-DL883;TRUI1;TRL20-KW

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.:086/85	ENGINE-TEST	STEYR TYP 8090 A MOT.TYP WD 411.88

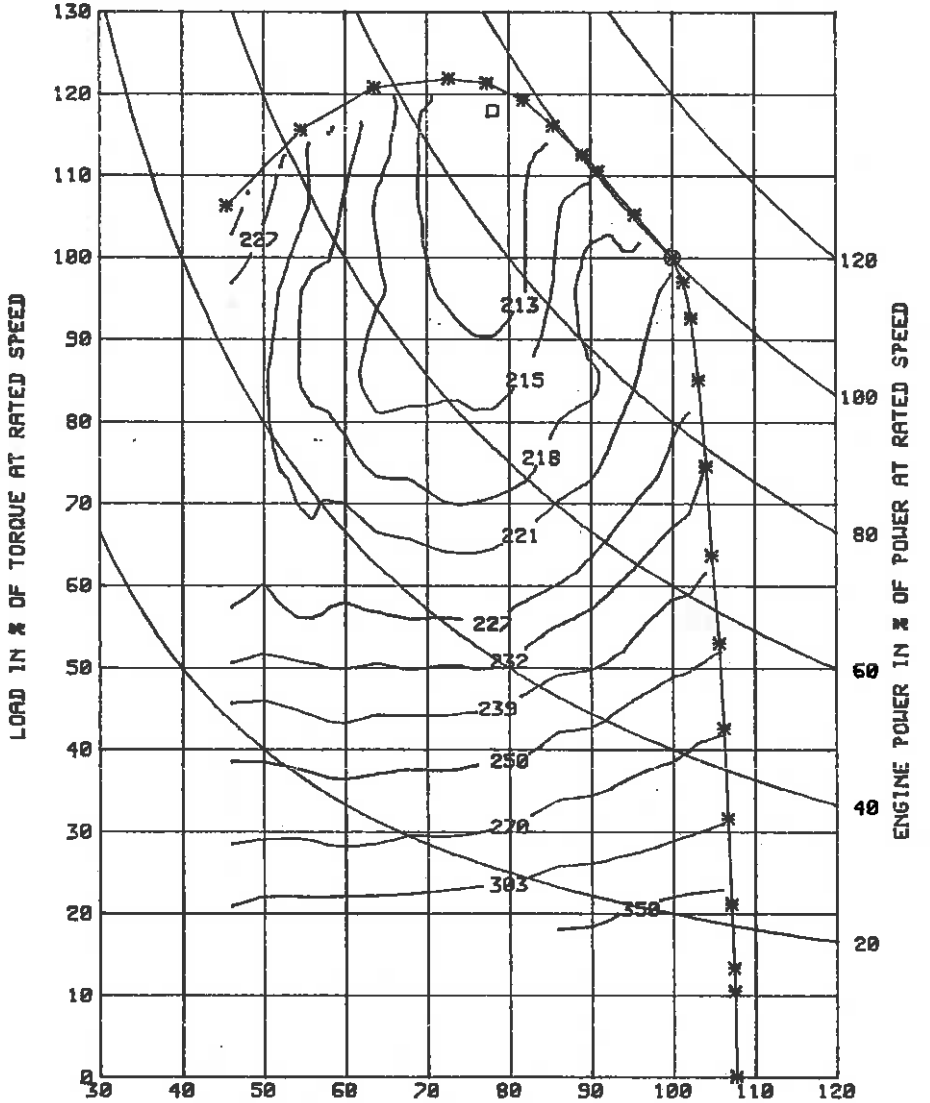


ENGINE SER.NR.: 411.88-999	ATM.PRESSURE : 989 MBAR	FUEL TEMP.: 34 C	SIGNATURE
TRAKTOR SER.NR.: 357.25-88452	AIR TEMPER. : 15 C	D.OF TESTS: 1984-03-12	
FUEL : B.645/15 C	COOLANT TEMP.: 87 C	TEST NO. : 140/1 183	
ENGINE OIL : RIMULA X 10W	OIL TEMP. : 104 C	CURVES NO.: 6	LUGER

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 086/85	ENGINE PERFORMANCE CHARACTERISTICS	STEYR TYP 8090 A MOT.TYP WD 411.88

□ ....MIN.FUEL CONS. 211.00 G/KWH AT N = 1716. REV/MIN, MD = 303.11 NM, P = 54.5 KW

● ....N = 2200. REV/MIN, MD = 257. NM, P = 59.2 KW



ENGINE SER.NR.: 411.88-999	ATM.PRESSURE : 989 MBAR	FUEL TEMP.: 34 C	SIGNATURE
TRAKTOR SER.NR.: 357.25-88452	AIR TEMPER. : 15 C	D.OF TESTS: 1994-03-12	
FUEL : 0.845/15 C	COOLANT TEMP.: 87 C	TEST NO. : 148/M 183	
ENGINE OIL : RINOLA X 10W	OIL TEMP. : 104 C	CURVES NO.: 7	LUGER

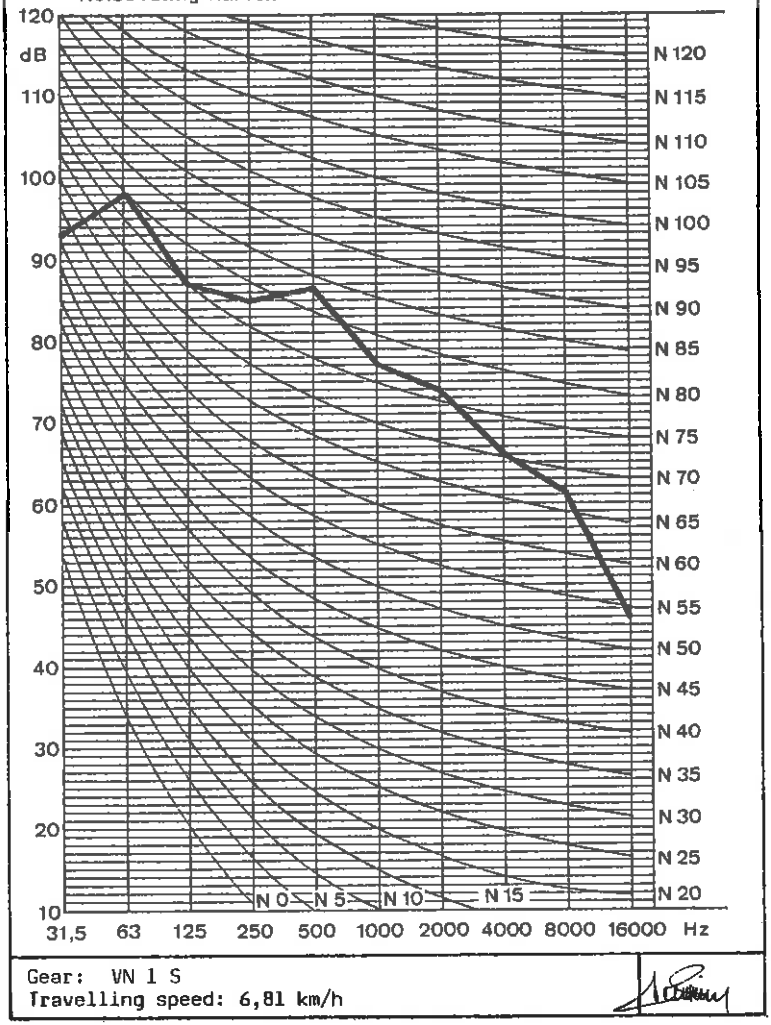
EDV-DL883.TKU182.DAT:TKL18A0

ANNEX

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

OCTAVE ANALYSIS OF NOISE AT THE DRIVER'S EAR LEVEL
(to page 31)

Bundesanstalt für Landtechnik Wieselburg/Austria	Octave analysis of noise at the drivers ear level	STEYR 8090 a (STEYR 357.25)



Gear: VN 1 S
Travelling speed: 6,81 km/h