O.E.C.D. Report No.: 983

Bundesanstalt für Landtechnik

A-3250 Wieselburg, Austria

Dieseltractor STEYR 357.15

Trade name:

STEYR 8080 a



Date of approval: 1985 12 24

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

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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:	140 hours

SPECIFICATIONS OF TRACTOR

TRACTOR:

Make:	STEYR-DAIMLER-PUCH AG.
Trade name:	STEYR 8080 a
Model:	Diesel-tractor STEYR 357.15
Type:	Wheel tractor, four-wheel driven, unit construction
Serial No.:	357.15 - 01839

ENGINE:

Make:	Own make
Model:	WD 411.90
Type:	4 stroke diesel engine with direct injection
Serial No.:	411.90 - 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

Supercharging:

Make:	KÜHNLE, KOPP & KAUSCH
Type:	Exhaust type turbo-supercharger
Model:	K 24 2460 G 506
Supercharging pressure:	max. 673 mbar

Fuel system:

Capacity of fuel tank:	96 l or optional 60 l
Fuel feed system:	Fuel feed by gravity
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, model and serial number of injection pump:	BOSCH distributor injection pump, VE 4/11 F 1100 R 94-1 0460 414 011 011 544 73225
Manufacturer's production setting of injection pump, flow rate and timing:	$55^{+2}_{+0,5}$ mm³/stroke at 1100 rev/min and full load 12^{+2} before TDC at 1 mm pump stroke
Make, type and model of injectors:	FRIEDMANN & MAIER or BOSCH or OMAP Multi hole injection nozzles FRIEDMANN & MAIER D 1 LMK 150/55 BOSCH DLLA 150 SV 13249 OMAP OLL 150 S 9235
Injection pressure:	$21,6^{+0,6}_{-0}$ MPa (216^{+6}_{-0} bar)

Governor:

Make:	BOSCH
Type:	Variable speed governor, mechanically acting, incorporated in injection pump
Governed range of engine speed:	From 600 to 2360^{+30}_{0} rev/min engine speed

Rated engine speed: 2200 rev/min

Air cleaner:

Pre-cleaner:	
Make:	MANN & HUMMEL
Type:	Cyclonic type with transparent dust container
Model:	MANN & HUMMEL 48.056.67.900
Location of air intake:	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:

Make:	Own make
Model and starter motor power rating:	BOSCH, 12 V, 2,7 kW, 0 001 362 309
Type:	Solenoid engaged starter motor
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
Safety device:	Own make Electrically starting block system by engaged gear

Electrical system:

Voltage:	12 V, negative earth
Generator:	Make: BOSCH 0120 339 526 Type: three phase type G 1 - 14 V 28 A 22 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; vertically, mouth upwards, 2580 mm above ground without exhaust valve
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:	For travel and p.t.o.
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 and the other for the gear box
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 multi-plate 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) 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:	ZF-PASSAU or SIGE-MAILAND
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
Differential lock:	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, 85 W 90, API GL-5
Front axle final drives:	appr. 2 x 0,8 l MIL-L-2105 B/C, SAE 90, 85 W 90, 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 fast 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

$\frac{N}{S} = 7,22$

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

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

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 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	56,12	17,22	11,36	37,08

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

POWER TAKE-OFF:

Main power take-off:

Type: Proportional to engine speed and (optional) proportional to ground speed p.t.o.
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, Type I (35 mm, 6 splines)

Power take-off proportional to engine speed (independent): 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

Power take-off proportional to ground speed:

Optional, not on tested tractor
Same p.t.o. shaft as proportional to engine speed p.t.o.
Only engageable when reduction gear is in O (NEUTRAL = stationary) or L (FIELD) position. Driven by main clutch (dry plate type), group gear, 4 speed change gear, reduction gear (only in position O 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 wheels: 59,58

Stationary mode (reduction gear in O 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	V	V with crawler gear	R	R with crawler gear
Gear no.: 1	447	78	444	95
2	786	138	780	167
3	1183	207	1175	251
4	1906	335	1894	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	V	V with amplifier group	R	R with amplifier group
Gear no.: 1	367	452	360	444
2	646	793	633	780
3	969	1198	953	1173
4	1563	1925	1536	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	V	V with amplifier group	R	R with amplifier group
Gear no.: 1	447	551	444	547
2	786	968	780	961
3	1183	1457	1175	1447
4	1906	2349	1894	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	544	444	
2	786	957	780	
3	1183	1440	1175	
4	1906	2321	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 1 (35 mm, 6 splines)
No power restriction
Driven by 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:

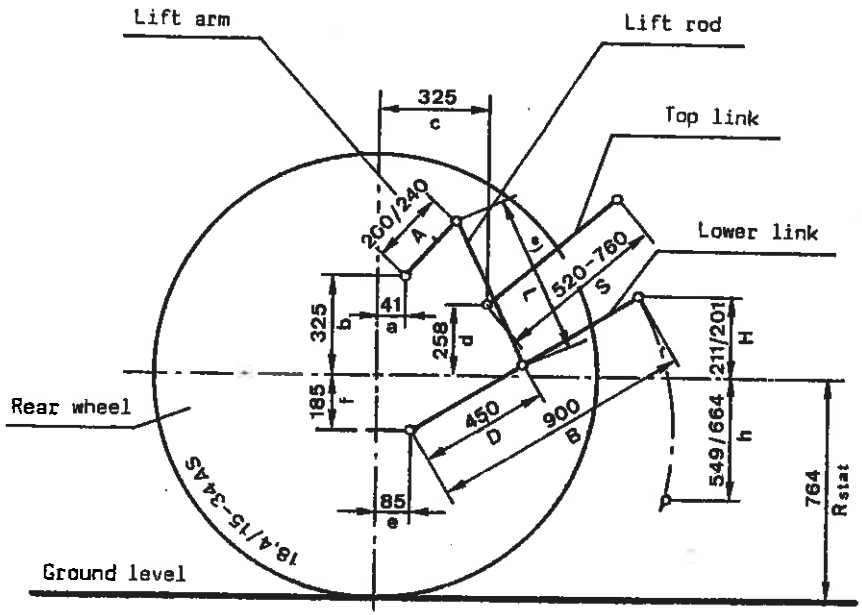
Make:	Own make
Type:	Open center type, draught control with two-stage pull adjustment and upper link sensing, position control, floating position.
Type and number of cylinder:	Single acting hydraulic cylinder, stroke and diameter: 152/85 mm and two optional additional single acting working cylinders, 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 filters:	One filter in the suction part (common filter with gear box)
Time between oil and 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

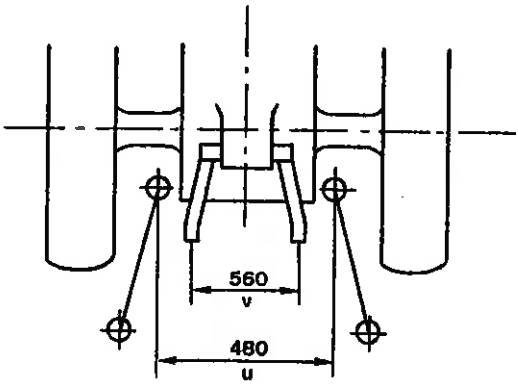
THREE-POINT-LINKAGE:

In the rear:	Category I/II, in conformity to ISO 730/1 "STEYR SIMPLEMATIK" standard linkage, double hole lift arms
In the front:	Not on tested tractor Category II

Figures of power lift:



*) Left lift rod adjustable from 585 mm to 670 mm length by a thread, right lift rod adjustable from 545 mm to 670 mm length by gear and thread.



Linkage geometry (projected lengths):

Rear tyres (size 18,4/15-34 AS) stat. radius:		(r)	764 mm
Front tyres (size 13,6-24 AS) stat. radius:		(r')	565 mm
Length of lift arms:		(A)	200/240 mm **)
Length of lower links:		(B)	900 mm
Distance of lift arm pivot point from rear wheel centre line:	horizontally	(a)	41 mm
	vertically	(b)	325 mm
Horizontal distance between the 2 lower link points:		(u)	480 mm
Horizontal distance between the 2 lift arm end points:		(v)	560 mm
Length of upper link:		(S)	from 520 to 760 mm
Distance of upper link pivot point from rear wheel centre line:	horizontally	(c)	325 mm
	vertically	(d)	258 mm
Distance of lower link pivot point from rear wheel centre:	horizontally	(e)	85 mm
	vertically	(f)	185 mm
Distance of lower link pivot points to lift rod pivot points on lower links:		(D)	450 mm
Length of lift rods:	right:	(L)	from 545 to 670 mm
	left:		from 585 to 670 mm
Length of lift rods during test:			630/675 mm **)
Height of lower hitch points during test: *)			
- in low position; max.mech./min.mech.		(h)	564/564 mm
- in high position; max.mech./min.mech.		(H)	6/126 mm
relative to the rear wheel centre line, situated 764 mm above the ground level			
Height of lower hitch points when locked in transport position:			Any height within lift range

*) These data are valid for unloaded power lift.
**) Max./min. mech. advantage

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 (∿∿∿ M 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

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

Height above ground *)	Min.lift rod length (585 mm)	Max.lift rod length (670 mm)	Vertical movement
Max.mech.advantage Liftarm 200 mm	from 460 to 975 mm	from 215 to 610 mm	515/595 mm
Min.mech.advantage Liftarm 240 mm	from 350 to 965 mm	from 100 to 795 mm	615/695 mm

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

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

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

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 ZF 76 32 141 102
Recommended oil:	ATF Dexron D
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 12,5 - 20 MPT, 10 PR; rim: 11 x 20 9,5 - 24 AS, 6 PR; rim: W 7 x 24 8,3 - 28 AS, 6 PR; rim: W 7 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 tyre 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 16,9 - 30 AS, 6 PR; rim: W 15 L x 30

WHEELBASE: 2281 mm

PROTECTIVE STRUCTURE SPECIFICATIONS:

OECD approval number:	CSD 0812/3, BLT-Wieselburg, 20.3.1984, dynamic test
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 on 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 0813/3, BLT-Wieselburg, 20.3.1984, dynamic test
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. 082/79)
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:	140 mm
vertical:	60 mm

or

Make and type:	As on tested tractor Klepp Elastomat 1050 H-S; according to national regulation (Prot.Nr. 066/82)
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	875
Side lights	1640	65 x 70	250
Rear lights	1645	65 x 70	250
Brake lights			
Direction indicators front	1640	65 x 70	155
Direction indicators rear	1645	65 x 70	155
Reflectors	1665 765	35 x 60 80 dia	203 570

*) Measured with stat. tyre radius at rear 764 mm and 565 mm at front
**) With overall width of 2040 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	4120	2285	1890	2610	2520/ 2560 **)
Without ballast	3895	2285	1890	2610	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
425 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	1225	2115	3340
With ballast	kg	1920	2933	4853

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:	15	

TEST RESULTS

COMPULSORY TEST:

Main power take-off performance

Date and location of tests: 17.9.1985
Type of dynamometer: SCHENCK eddy-current brake W 780

Main test on: ISO R 500, Typ I (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					
50,9 ~~49,75~~	~~2200~~ 2300	~~1123~~ 1071	11,6 13,7	~~228~~ 235	3,585
Power at rated engine speed					
49,75	2200	1123	11,72 13,88	235	3,585
Standard power take-off speed - 1000 rev/min					
49,90	1958	1000	11,16 13,22	223	3,776
PART LOADS					
(i) the torque corresponding to maximum power at rated engine speed					
49,75	2200	1123	11,72 13,88	235	3,585
(ii) 85 % of torque obtained in (i)					
42,74	2222	1135	10,32 12,22	241	3,499
(iii) 75 % of torque defined in (ii)					
32,59	2259	1154	8,80 10,41	270	3,129
(iv) 50 % of torque defined in (ii)					
21,93	2281	1165	6,68 7,90	304	2,776
(v) 25 % of torque defined in (ii)					
11,15	2320	1185	4,88 5,77	437	1,931
(vi) unloaded					
-	2361	1206	3,13 3,71	-	-

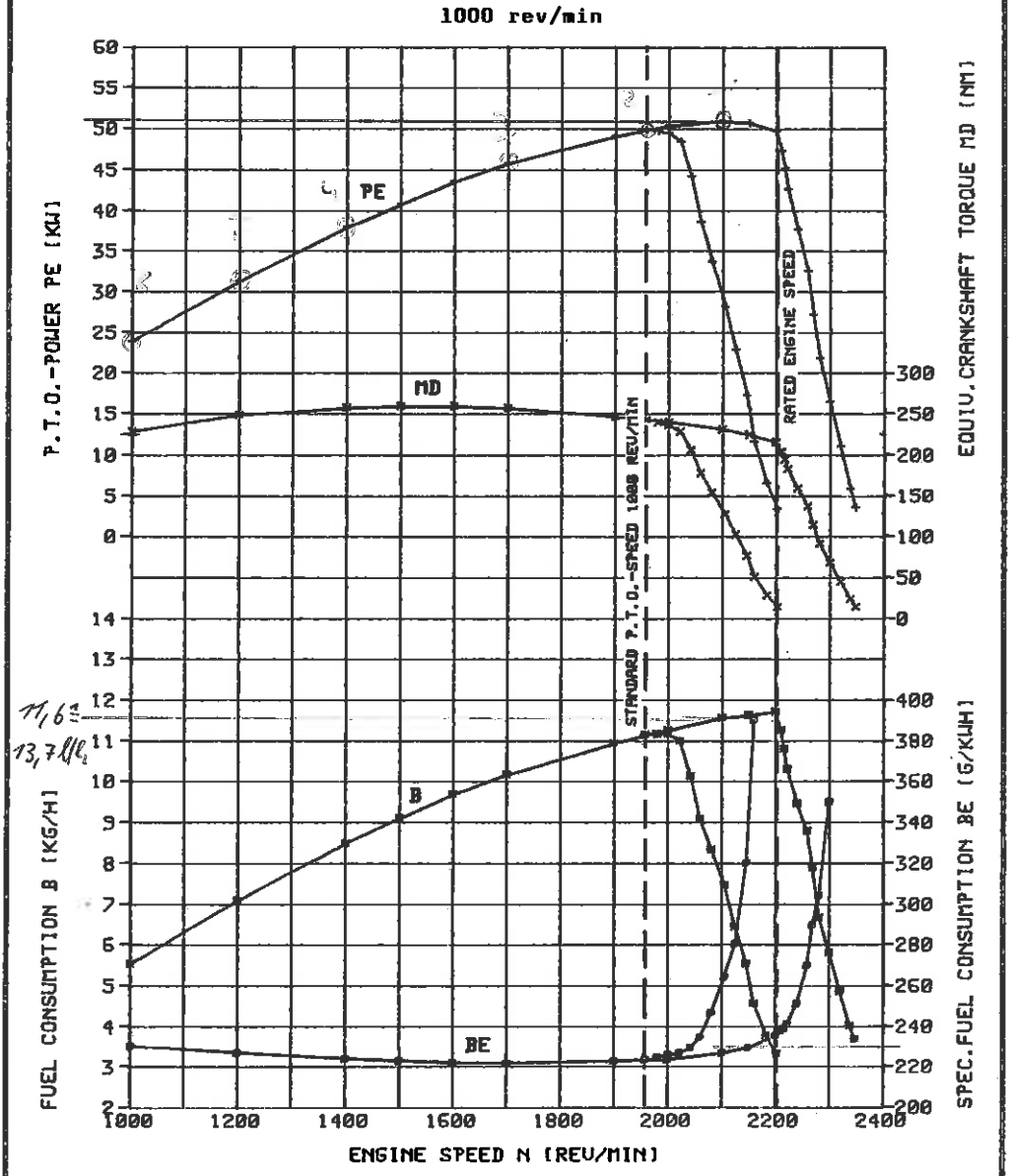
Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
PART LOADS AT STANDARD POWER TAKE-OFF SPEED					
(i) The torque corresponding to maximum power available					
49,90	1958	1000	11,16 13,22	223	3,776
(ii) 85 % of torque obtained at maximum power					
44,23	2042	1043	10,15 12,01	229,5	3,682
(iii) 75 % of torque defined in (ii)					
33,81	2081	1063	8,35 9,88	247	3,422
(iv) 50 % of torque defined in (ii)					
23,00	2125	1085	6,46 7,64	281	3,000
(v) 25 % of torque defined in (ii)					
11,69	2160	1103	4,57 5,41	391	2,160
(vi) unloaded					
-	2216	1132	2,72 3,22	-	-

STANDARD SPECIFIC FUEL CONSUMPTION: 241/304 - 229,5/281 g/kWh

No load maximum engine speed: 2361 rev/min
Equivalent crankshaft torque
at maximum power: 215,94 Nm
Maximum equivalent crankshaft torque: 260,14 Nm at 1500 rev/min of engine

Mean atmospheric conditions	temperature:	16°C
	pressure:	994 mbar
	rel. humidity:	67 %
Maximum temperatures	coolant:	80°C
	engine oil:	109°C
	fuel:	60°C
	engine air intake:	30°C

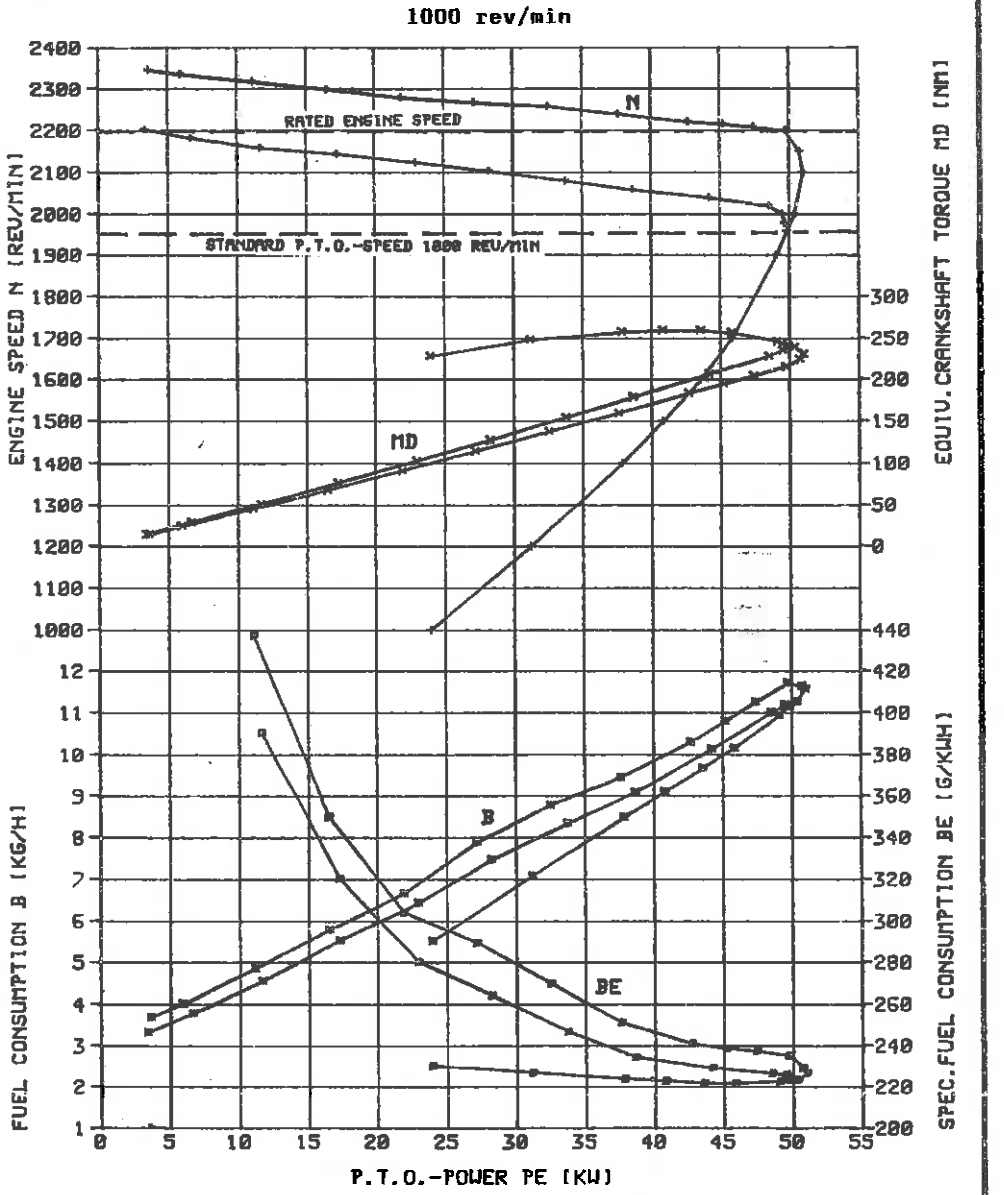
BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 161/85	P.T.O.-TEST	STEYR TYP 8080A MOT.TYP WD 411.90



ENGINE SER.NR.: 411.90-999	ATM.PRESSURE : 994 MBAR	FUEL TEMP.: 60 C	SIGNATURE
TRACTOR SER.NR.: 397.15-01039	AIR TEMPER. : 16 C	D.OF TESTS: 1985-09-17	
FUEL : 0.845/15C	COOLANT TEMP.: 88 C	TEST NO. :ZA/142	
ENGINE OIL : RIMULA X 10 W	OIL TEMP. : 103 C	CURVES NO.: 1	LUGER

08-NOV-85 DUR.:8180846-DL883.TRU124;TRL28-22

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 161/85	P.T.O.-TEST	STEYR TYP 8080A MOT.TYP WD 411.90



ENGINE SER.NR.: 411.90-999	ATM.PRESSURE : 994 MBAR	FUEL TEMP.: 60 C	SIGNATURE
TRACTOR SER.NR.: 357.15-01839	AIR TEMPER. : 16 C	D.OF TESTS: 1985-03-17	
FUEL : B.B45/15C	COOLANT TEMP.: 88 C	TEST NO. :ZA/142	
ENGINE OIL : RIMULA X 10 W	OIL TEMP. : 109 C	CURVES NO.: 2	LUGER

88-NOV-05 DUR.:0100846-DL083.HKU124;HKL20-22

LIFTING FORCE AND HYDRAULIC POWER TEST RESULTS:

Date and location of tests: 5.11.1985, Wieselburg, Austria

Hydraulic fluid:

Make and type: SHELL SPIRAX EP 80

Viscosity: at 40°C 80 mm^2/s (cSt), at 100°C 9,2 mm^2/s (cSt)

Viscosity index: 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 (manufacturer's specification): 24,5 MPa (245 bar)

Power lift:

	**) Height of lower hitch points above ground in down position mm	**) Vertical movement (at hitch points) 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	200/200	570/690	19,8/17,8 37,2/32,6*	16,7 (167 bar)	19,5/17,5 36,6/32,1*	-
On the frame 460 mm mast height	200/200	570/690	18,2/15,5 34,0/28,2*	16,7 (167 bar)	29,0/24,7 54,2/45,0*	from +4° to 0° and to +4°
On the frame 510 mm mast height	200/200	570/690	16,7/14,6 30,8/26,9*	16,7 (167 bar)	26,6/23,3 49,1/42,9*	from +2° to 0° and to +6°

*) With additional working cylinders **) Max./min.mech.advantage

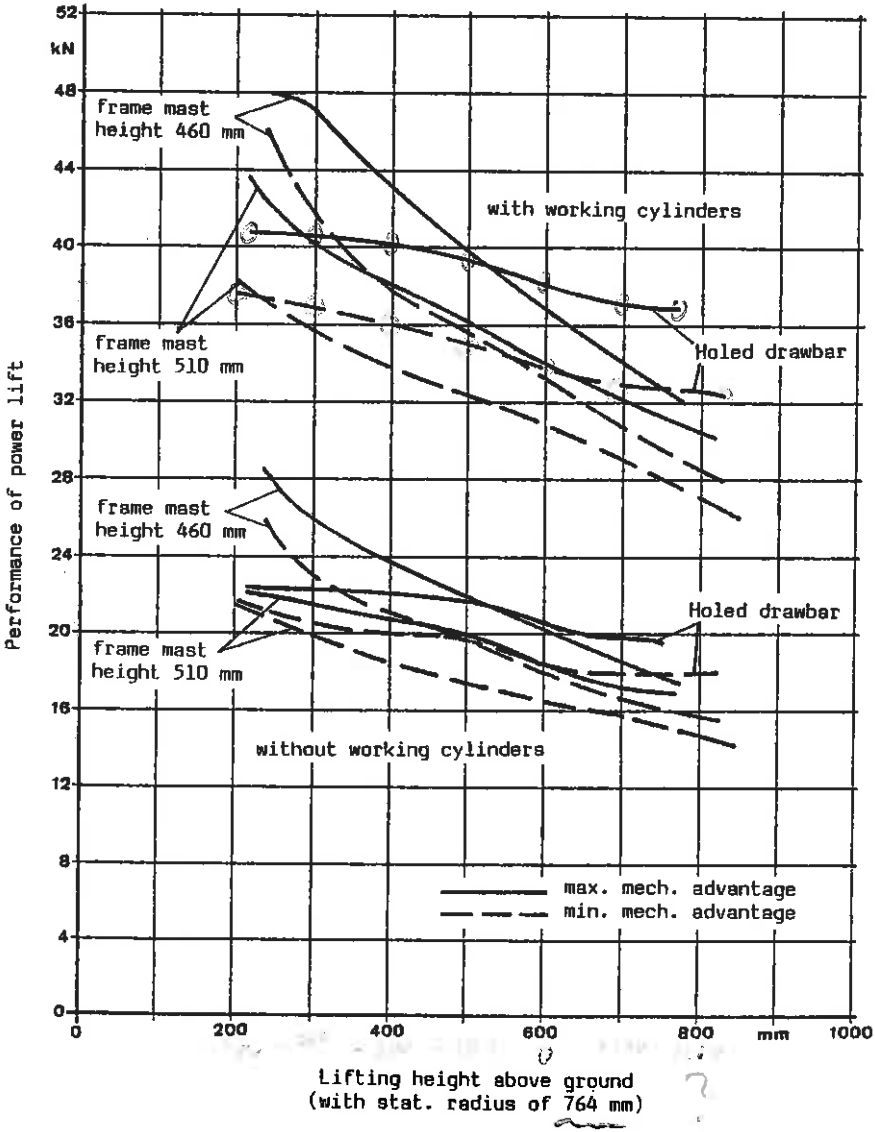
Main linkage dimensions: See attached drawings and table in specifications chapter

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivot points mm		-355	-330	-300	-250	-200	-150	-100	-50	0	50	100	150	200	235
Lifting force at the hitch-points kN (Values for the pressure, calculated with 90 % of sustained oil pressure)	max.mech. advantage	22,40 40,80*	22,40 40,80*	22,40 40,80*	22,35 40,70*	22,20 40,50*	22,10 40,30*	21,80 39,90*	21,30 39,40*	20,60 38,60*	20,20 38,10*	19,90 37,50*	19,80 37,20*		
	min.mech. advantage	21,20 37,40*	20,90 37,40*	20,60 37,20*	20,20 36,90*	19,90 36,40*	19,70 35,90*	19,50 35,20*	19,30 34,60*	18,90 34,00*	18,40 33,40*	18,00 33,20*	18,00 33,20*	17,90 33,00*	17,80 32,60*
	Maximum force exerted through whole range: 19,8 kN/17,8 kN (2020/1815 kp) 37,2*kN/32,6*kN (3790/3325 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		28,00 48,00*	26,80 47,60*	25,30 45,20*	24,20 43,40*	23,20 42,20*	22,30 40,60*	21,30 39,00*	20,60 37,60*	19,80 36,60*	18,90 35,20*	18,20 34,00*		
	min.mech. advantage		25,30 44,90*	23,80 42,40*	22,30 40,00*	21,60 38,40*	20,80 37,00*	20,30 35,90*	19,20 35,00*	18,30 33,60*	17,45 32,60*	16,80 31,20*	16,30 30,00*	15,90 28,80*	15,50 28,20*
	Maximum force exerted through whole range: 18,2 kN/15,5 kN (1855/1580 kp) 34,0*kN/28,2*kN (3465/2875 kp)														
	Calculated oil pressure: 16,7 MPa (167 bar)														
Lifting force at the frame with 510 mm mast height and 610 mm behind lower links hitch-points kN	max.mech. advantage	22,20 43,50*	21,90 41,70*	21,70 40,60*	21,30 39,40*	20,90 38,50*	20,60 37,60*	20,30 36,50*	19,60 35,40*	18,90 34,30*	18,00 33,50*	17,40 32,40*	17,00 31,60*	16,70 30,80*	
	min.mech. advantage	21,20 37,60*	20,40 36,80*	20,00 36,00*	19,35 35,00*	18,80 34,30*	18,30 33,60*	17,90 32,80*	17,35 32,00*	16,80 31,20*	16,20 30,50*	15,70 29,50*	15,30 28,60*	15,00 27,50*	14,60 26,90*
	Maximum force exerted through whole range: 16,7 kN/14,6 kN (1705/1490 kp) 30,8*kN/26,9*kN (3140/2740 kp)														
	Calculated oil pressure: 16,7 MPa (167 bar)														

*) with working cylinders

Performance of power lift:



Hydraulic power test:

Sustained pressure with relief valve open:	18,0 MPa (180 bar)
Opening pressure of relief valve:	18,5 MPa (185 bar)
Pump delivery rate at minimum pressure:	39 l/min at 2200 rev/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: 44 l/min at 2200 rev/min Pressure: 16,7 MPa (167 bar) Power: 12,24 kW
Flow rate and hydraulic pressure corresponding to maximum hydraulic power:	Flow rate: 44,5 l/min at 2200 rev/min Pressure: 17,5 MPa (175 bar) Power: 12,98 kW
Tapping point used for test:	At rear of tractor
Temperature of hydraulic fluid:	60°C

Drawbar performance

Date of tests: 8.10.1985
Type of track: Concrete
Height of drawbar above ground: 470 mm ballasted and unballasted
Tyres sizes: front: 13,6 - 24 AS, 6 PR; rear: 18,4/15 - 34 AS, 8 PR

Gear	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperatures			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 1L	1,97	19,25	35280	2275	15	424	1,99	30	71	98	21	75	999
VS 1L	2,38	23,36	35280	2269	15	365,5	2,31	30	70	98	21	75	999
VN 2L	3,37	32,99	35280	2217	15	338,5	2,59	33	72	99	21	75	999
VS 2L	4,27	39,96	34033	2200	11,5	294,5	2,87	35	74	100	18	76	999
VN 3L	5,48	41,60	27351	2200	7,5	283	2,99	34	72	99	21	74	999
VS 3L	6,80	41,90	22181	2200	5,5	281	3,00	34	73	100	21	74	999
VN 1S	6,88	42,49	22224	2200	5,5	277	3,05	34	73	99	20	76	999
VS 1S	8,49	43,11	18293	2200	4,5	273	3,09	33	72	98	20	76	999
VN 4L	9,15	41,41	16296	2200	4	284,5	2,97	33	72	97	19	76	999
VS 4L	11,23	41,15	13198	2200	3,5	286	2,95	33	72	97	19	74	999
VN 2S	12,43	41,38	11985	2200	3,0	284,5	2,97	33	74	97	20	72	999
VS 2S	15,20	40,60	9614	2200	2,5	290	2,91	32	73	96	20	72	999

Gear	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperatures			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) Maximum power (ballasted) tyre inflation pressure in the front 1,6 bar, in the rear 1,1 bar													
VN 1L	1,93	26,44	49335	2250	15	355	2,38	35	72	98	16	84	989
VS 1L	2,32	31,82	49335	2224	15	327	2,58	34	71	98	17	84	989
VN 2L	3,53	41,43	42231	2200	9,5	284	2,97	32	72	97	16	84	989
VS 2L	4,43	41,96	34115	2200	6,5	280,5	3,01	33	72	97	16	84	989
VN 3L	5,58	41,71	26928	2200	5	282,5	2,99	34	74	97	16	84	989
VS 3L	6,86	41,60	21826	2200	4	283	2,99	34	74	97	17	84	989
VN 1S	6,94	42,84	22206	2200	4	276	3,74	34	73	96	17	84	989
VS 1S	8,52	42,16	17819	2200	3,5	279,5	3,05	33	73	96	17	83	989
VN 4L	9,13	40,65	15916	2200	3,0	289,5	2,92	33	73	96	17	83	989
VS 4L	11,23	39,32	12604	2200	2,5	299,5	2,82	34	74	95	18	83	989
VN 2S	12,42	40,30	11680	2200	2,5	292	2,89	33	74	93	19	80	989
VS 2S	15,17	38,95	9241	2200	2	302,5	2,80	33	74	93	19	80	989
(iii) Five-hour-test at 75 % of pull at maximum power													
VN 1S	7,13	33,00	16654	2235	3,0	302,5	2,79	48	77	105	22	64	989
(iv) Five-hour-test at pull corresponding to 15 % wheelslip in test (ii)													
VS 1L	2,32	31,82	49335	2224	15	327	2,58	43	74	103	19	72	997

Total oil consumption during 10 hours duration of tests (iii) and (iv): 50 g/h

TURNING SPACE AND TURNING CIRCLE:

Wheel equipment: front: 13,6-24 AS, PR 6; rim: W 11 x 24
rear: 18,4/15-34 AS, PR 8; rim: DW 16 x 34

Track of wheel: front: 1680 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	4,07/4,22	4,03/4,20	5,14/4,90	5,13/4,90
Radius of turning circle	3,90/4,05	3,86/4,03	4,97/4,73	4,96/4,73

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

LOCATION OF CENTRE OF GRAVITY:

	mm
Height above ground	897
Distance forward from the vertical plane containing the axis of the rear wheels	830
Distance from the median plane of the tractor, right-side	1,5

BRAKING:

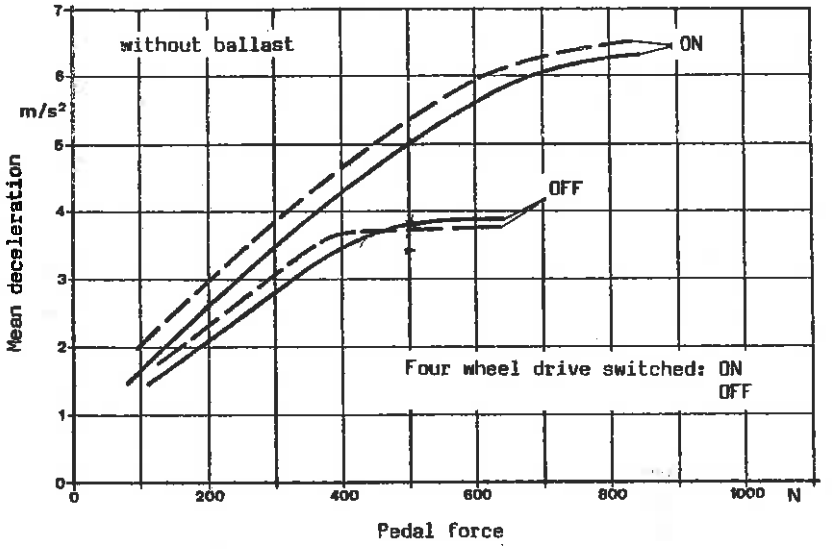
Date of tests: 12.9.1985
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr.03382 (Kombi-Schreiber)

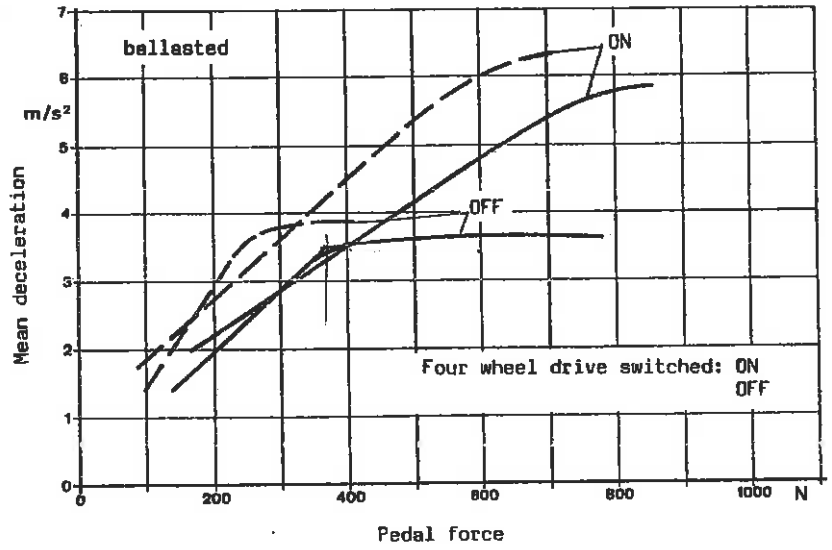
Tractor mass during brake tests (with driver):

	Front kg	Rear kg	Total kg
Ballasted	1935	2993	4928
Unballasted	1240	2175	3415

Service brake:

Four-wheel-drive switched ON and OFF
Type-0-test (cold brakes) ———— , Type-I(fade test) — — — — —





Speed before application of brakes: 39 km/h
The tractor brakes were heated by towing of the tractor for 1 km.

Maximum devistion of tractor from its original course:	None
Abnormale 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	165 N	120 N	145 N	115 N

MEASUREMENT OF EXTERNAL NOISE LEVEL:

Date of tests:	27.9.1985
Type of sound level meter:	BRÜEL & KJAER 2209 and 2308
Type of track:	Concrete
Gear number:	VS 4 S
Travelling speed before acceleration:	30 km/h
Sound level:	82 dB(A)

NOISE MEASUREMENT AT DRIVER'S EAR:

Date of tests:	27.9.1985
Type of sound level meter:	BRÜEL & KJAER 2209 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 full closed safety cab)			
VN 1 L	28,14	2,14	84
VS 1 L	27,38	2,61	85
VN 2 L	27,81	3,83	85
VS 2 L	27,49	4,48	86
VN 3 L	25,07	5,58	84,5
VN 1 S	23,54	6,65	85
VS 3 L	13,55	7,16	85
VS 3 L *)	light load (1,76)	7,62	84
VS 1 S	18,83	8,27	85
VN 4 L	16,76	8,91	85
VS 4 L	13,31	10,96	84,5
VN 2 S	12,40	12,12	85
VS 2 S	9,61	14,91	84,5
VN 3 S	7,15	18,64	84,5
VS 3 S	5,38	22,52	84,5
VN 4 S	3,06	30,66	85
VS 4 S	light load (1,46)	38,17	85

*) The VS 3 L gear corresponds to the nominal travelling speed nearest to 7,5 km/h.

OPTIONAL TESTS

Main power take-off performance

Date and location of tests: 17.9.1985
Type of dynamometer: SCHENCK eddy-current brake Typ W 780
Main test on: ISO R 500, Typ 2 (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					
48,98	2200	632	11,70 13,85	239	3,535
Power at rated engine speed					
48,98	2200	632	11,70 13,85	239	3,535
Standard power take-off speed - 540 rev/min					
48,06	1880	540	10,92 12,92	227	3,719
PART LOADS					
(i) the torque corresponding to maximum power at rated engine speed					
48,98	2200	632	11,70 13,85	239	3,535
(ii) 85 % of torque obtained in (i)					
42,03	2220	638	10,27 12,16	244,5	3,456
(iii) 75 % of torque defined in (ii)					
31,91	2249	646	8,51 10,07	266,5	3,169
(iv) 50 % of torque defined in (ii)					
21,57	2280	655	6,65 7,87	308	2,741
(v) 25 % of torque defined in (ii)					
10,97	2318	666	4,81 5,70	439	1,925
(vi) unloaded					
-	2363	679	3,03 3,58	-	-

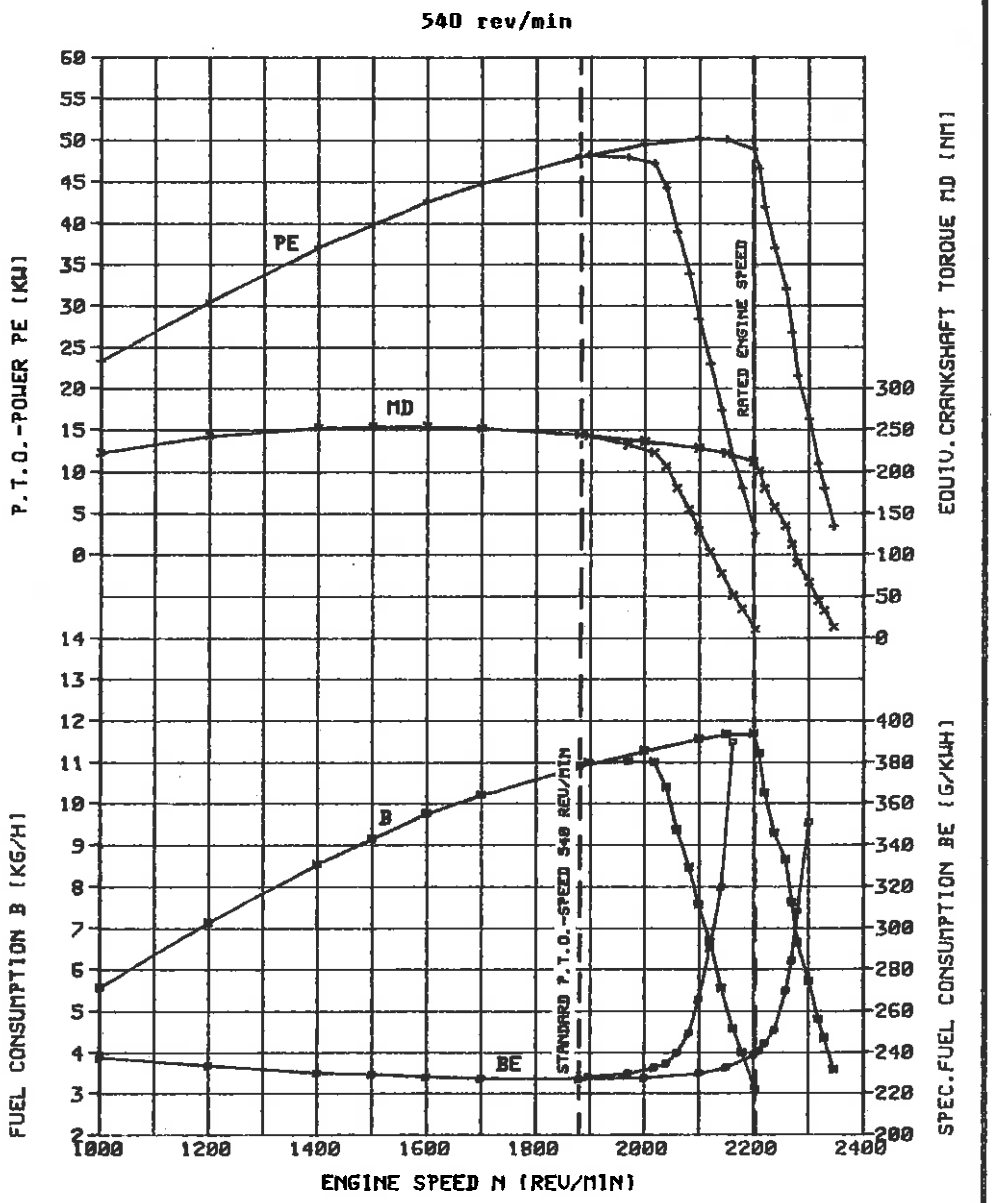
Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
PART LOADS AT STANDARD POWER TAKE-OFF SPEED					
(i) The torque corresponding to maximum power available					
48,06	1880	540	10,92 12,92	227	3,719
(ii) 85 % of torque obtained at maximum power					
44,33	2040	586	10,41 12,32	235	3,598
(iii) 75 % of torque defined in (ii)					
33,93	2082	598	8,47 10,02	249,5	3,386
(iv) 50 % of torque defined in (ii)					
23,04	2120	609	6,68 7,90	290	2,916
(v) 25 % of torque defined in (ii)					
11,74	2162	621	4,58 5,42	390	2,167
(vi) unloaded					
-	2214	636	2,76 3,27	-	-

STANDARD SPECIFIC FUEL CONSUMPTION: 244,4/308 - 235/290 g/kWh

No load maximum engine speed: 2363 rev/min
Equivalent crankshaft torque
at maximum power: 212,6 Nm
Maximum equivalent crankshaft torque: 255,32 Nm at 1500 rev/min of engine

Mean atmospheric conditions	temperature:	17°C
	pressure:	994 mbar
	rel. humidity:	67 %
Maximum temperatures	coolant:	83°C
	engine oil:	111°C
	fuel:	60°C
	engine air intake:	32°C

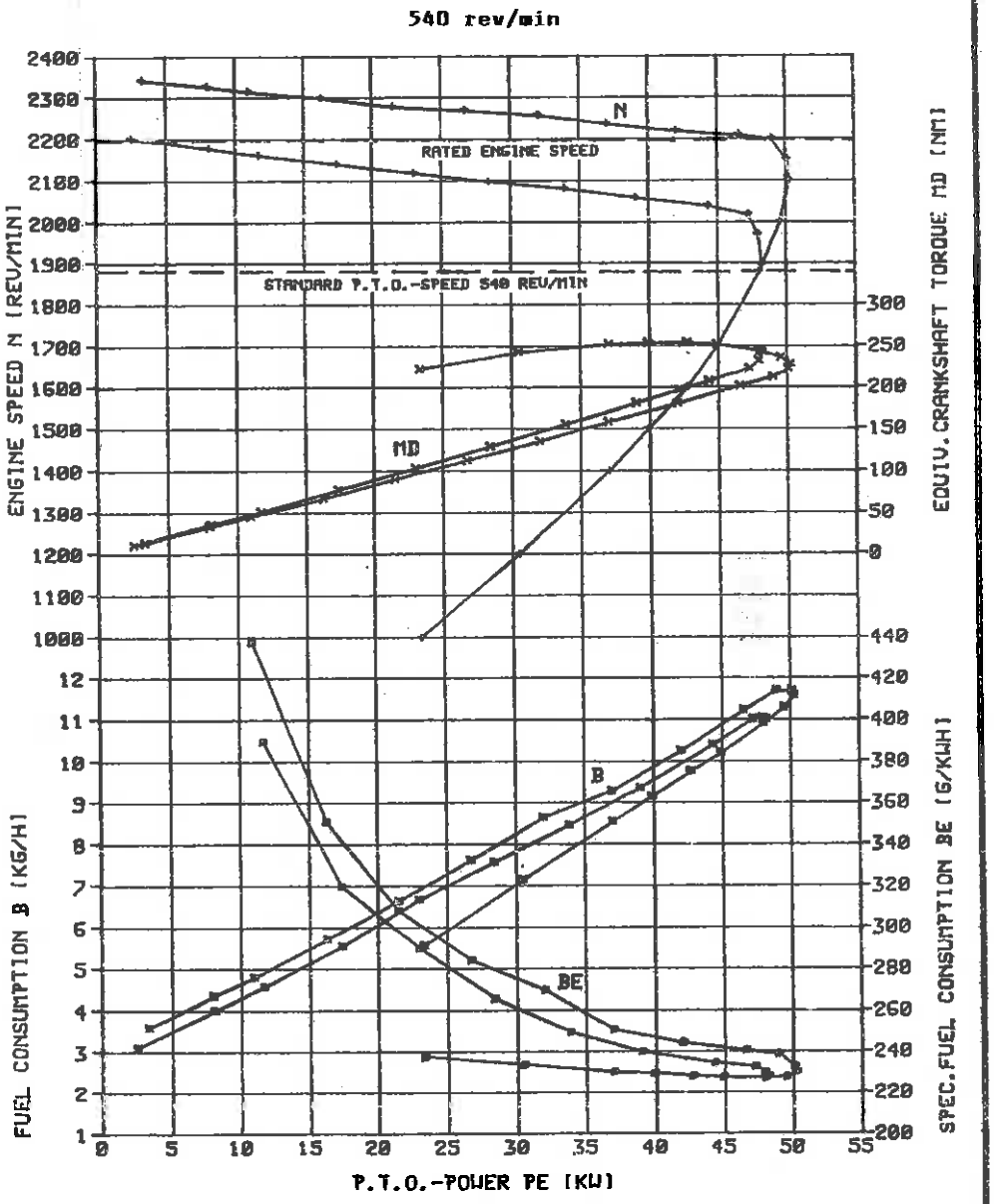
BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.:161/85	P.T.O.-TEST	STEYR TYP 8080A MOT.TYP WD 411.90



ENGINE SER.NR.: 411.90-999	ATM.PRESSURE : 994 MBAR	FUEL TEMP.: 60 C	SIGNATURE
TRACTOR SER.NR.: 357.15-01839	AIR TEMPER. : 12 C	D.OF TESTS: 1985-09-17	
FUEL : B.845/15C	COOLANT TEMP.: 83 C	TEST NO. :2A/142A	
ENGINE OIL : RINULA X 10 W	OIL TEMP.: 111 C	CURVES NO.: 3	LUGER

08-NOV-85 DUR.:B100846-DL003,MKL125,MKL20-21

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 161/85	P.T.O.-TEST	STEYR TYP 8080A MOT.TYP WD 411.90



ENGINE SER.NR.: 411.90-999	ATM.PRESSURE : 994 MBAR	FUEL TEMP.: 60 C	SIGNATURE
TRACTOR SER.NR.: 357.15-01839	AIR TEMPER. : 17 C	D.OF TESTS: 1985-09-17	
FUEL : 0.845/15C	COOLANT TEMP.: 83 C	TEST NO. :ZR/142A	
ENGINE OIL : RIMULA X 10 W	OIL TEMP.: 111 C	CURVES NO.: 4	LUGER

DUR.:0188846-0.883;MRL125;MRL26-21

Engine performance

Date and location of test: 4.9.1985, Wieselburg, Austria
Type of dynamometer: SCHENCK eddy-current brake W 150

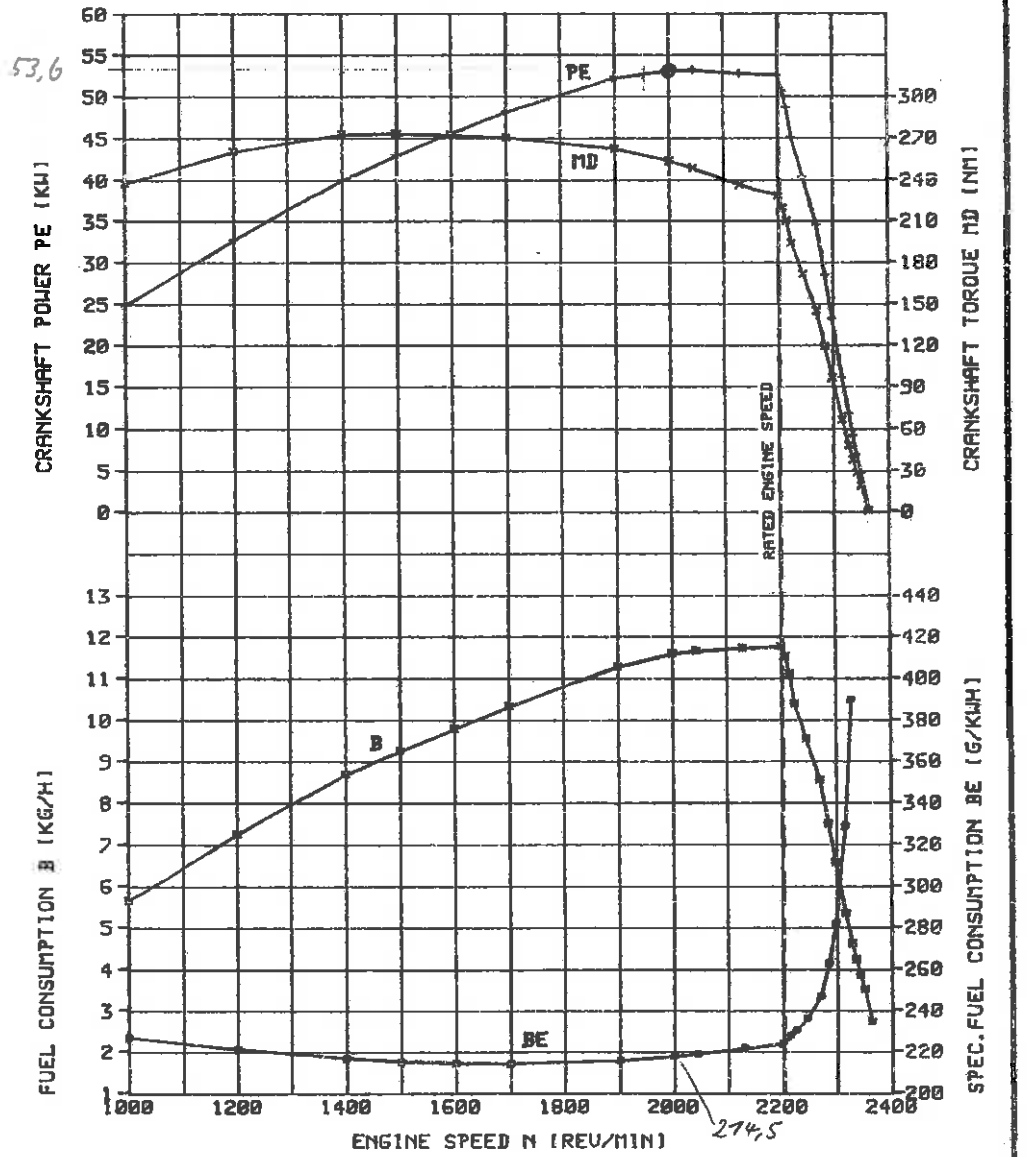
Power	Engine speed	Fuel consumption		Specific energy
		hourly	specific	
kW	rev/min	kg/h l/h	g/kWh	kWh/l
Maximum power - 2 hours test				
52,58	2200	11,78 13,94	224	3,773
Power at rated engine speed				
52,58	2200	11,78 13,94	224	3,773
Standard power take-off speed				
53,01	1958	11,50 13,66	217	3,880
51,90	1880	11,16 13,25	215	3,920
Part loads				
(i) the torque corresponding to maximum power at rated engine speed				
52,58	2200	11,78 13,94	224	3,773
(ii) 85 % of torque obtained in (i)				
45,15	2224	10,41 12,32	230,5	3,666
(iii) 75 % of torque defined in (ii)				
34,62	2270	8,55 10,12	247	3,420
(iv) 50 % of torque defined in (ii)				
23,32	2298	6,58 7,79	282	2,996
(v) 25 % of torque defined in (ii)				
11,87	2328	4,63 5,48	390	2,167
(vi) unloaded				
-	2363	2,75 3,25	-	-

Optimum fuel consumption: 214,5 g/kWh at 48,19 kW and 1700 rev/min
No load maximum engine speed: 2363 rev/min
Torque at maximum power: 228,2 Nm
Maximum torque: 273,6 at 1500 rev/min of engine

Mean atmospheric conditions:	temperature:	16°C
	pressure:	990 mbar
	relative humidity:	78 %
Maximum temperatures:	coolant:	80°C
	engine oil:	107°C
	fuel:	64°C
	engine air intake:	21°C

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 161/85	ENGINE-TEST	STEYR TYP 8080A MOT.TYP WD 411.90

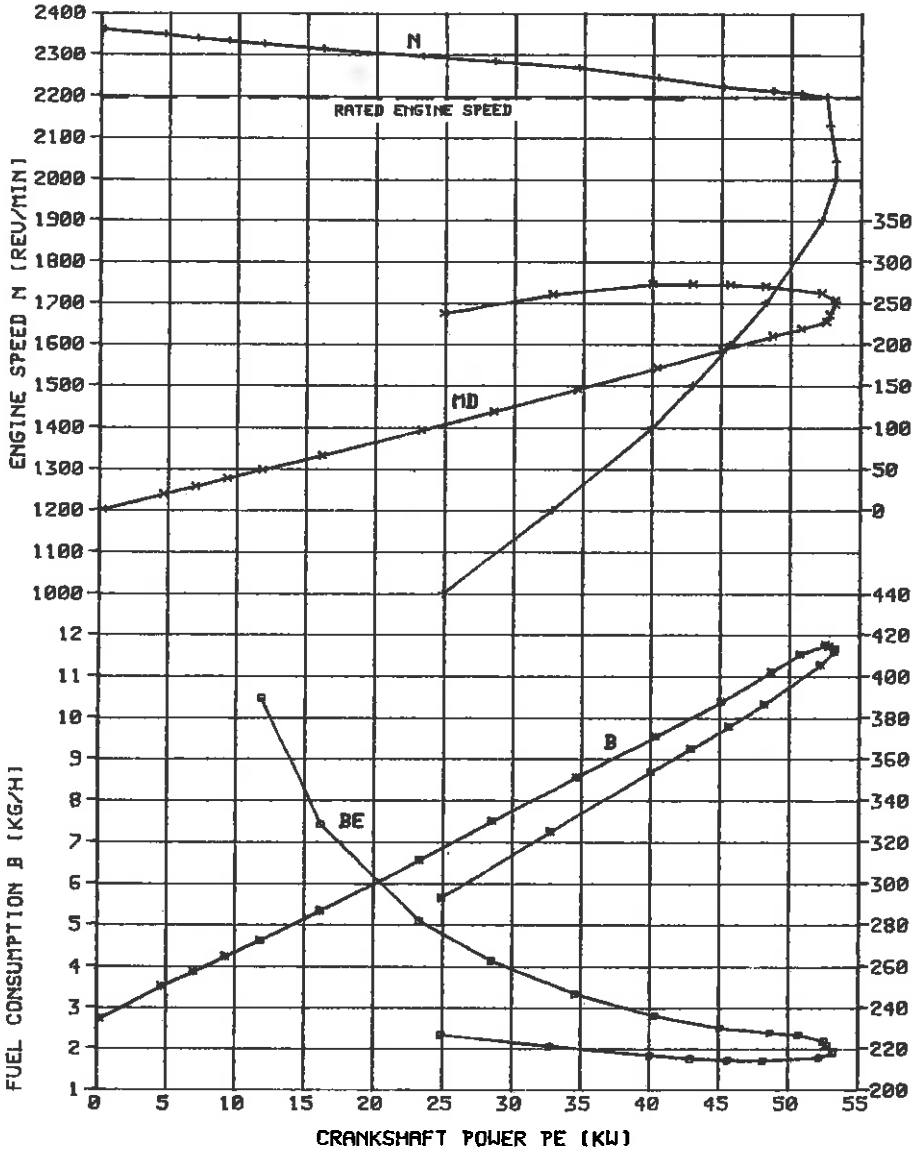
$B = b_e \cdot N = \frac{274,5}{0,845} \cdot \frac{53,6}{1000}$ l/h = 13,6 l/h = 11,5 kg/h



ENGINE SER.NR.: 411.90-999	ATM.PRESSURE : 990 MBAR	FUEL TEMP.: 64 C	SIGNATURE
TRACTOR SER.NR.: 357.15-01839	AIR TEMPER. : 16 C	D.OF TESTS: 04-09-1985	
FUEL : 0.845/15 C	COOLANT TEMP.: 88 C	TEST NO. : 146/M185	
ENGINE OIL : RIMULA X 10 W	OIL TEMP. : 107 C	CURVES NO.: 5	REITHER

08-NOV-85 DVR.:0100846-DL003:MKU122.MKL20-KU

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 161/85	ENGINE-TEST	STEYR TYP 8080A MOT.TYP WD 411.90

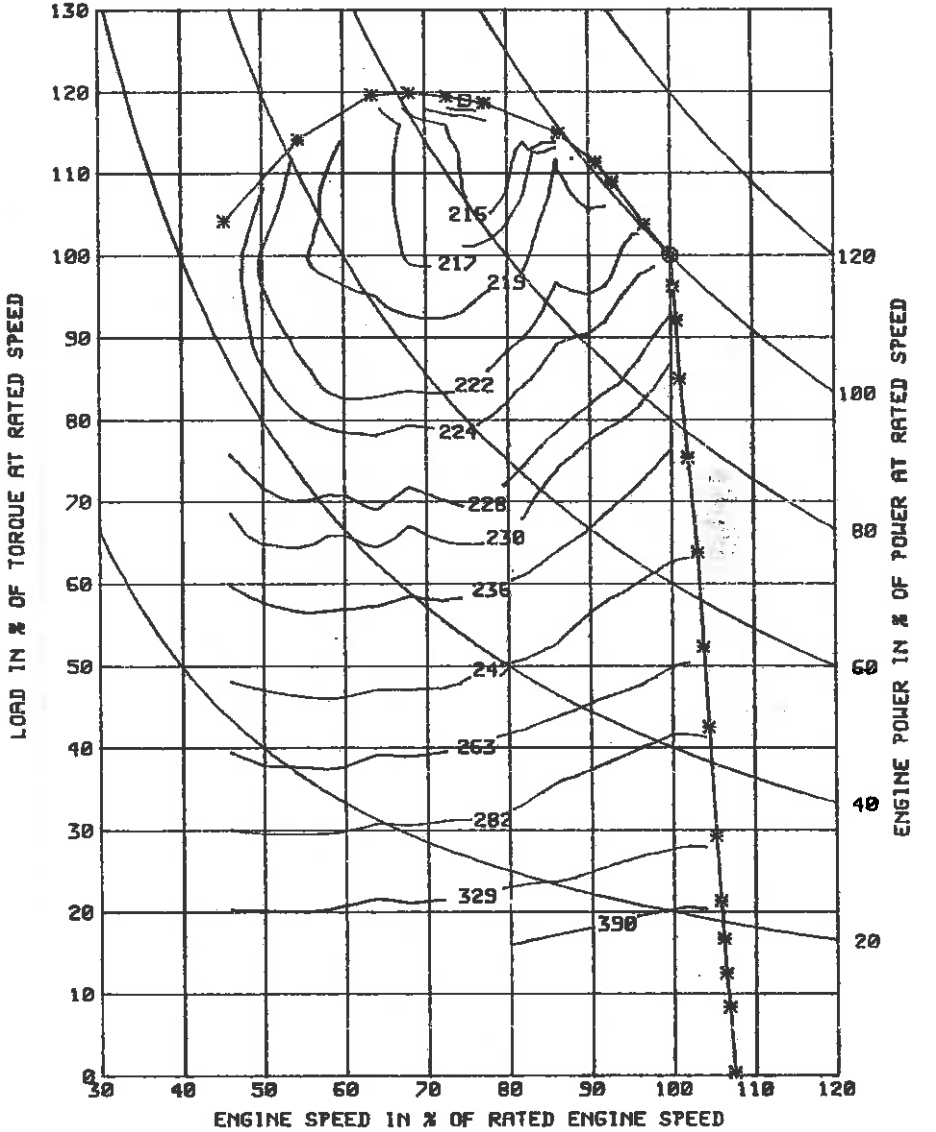


ENGINE SER.NR.: 411.90-999	ATM.PRESSURE : 990 MBAR	FUEL TEMP.: 64 C	SIGNATURE
TRACTOR SER.NR.: 357.15-01839	AIR TEMPER. : 16 C	D.OF TESTS: 04-09-1985	
FUEL : 0.845/15 C	COOLANT TEMP.: 88 C	TEST NO. : 146/M189	
ENGINE OIL : RIMULA X 10 W	OIL TEMP. : 107 C	CURVES NO.: 6	REITHER

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.: 161/85	ENGINE PERFORMANCE CHARACTERISTICS	STEYR TYP 8080A MOT.TYP WD 411.90

D ....MIN.FUEL CONS. 214.40 G/KWH AT N = 1650. REV/MIN, MD = 271.59 NM, P = 46.9 KW

⊛ ....N = 2200. REV/MIN, MD = 228. NM, P = 52.6 KW



ENGINE SER.NR.: 411.90-999	ATM.PRESSURE : 998 MBAR	FUEL TEMP.: 64 C	SIGNATURE
TRACTOR SER.NR.: 357.15-01839	AIR TEMPER. : 16 C	D.OF TESTS: 84-05-1985	
FUEL : B.B4S/15 C	COOLANT TEMP.: 88 C	TEST NO. : 146/M189	
ENGINE OIL : RIMULA X 15 W	OIL TEMP. : 102 C	CURVES NO.: 2	REITHER

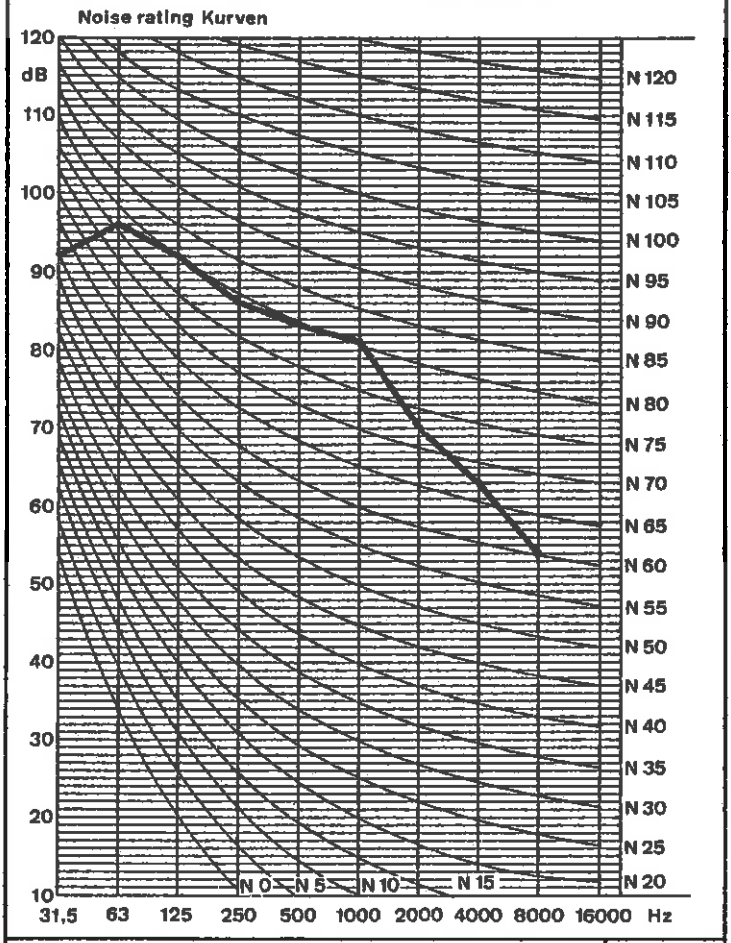
EDV-DL883,MKU122.DAT;MKL18NU

ANNEX

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

OCTAVE ANALYSIS OF NOISE AT THE DRIVER'S EAR LEVEL:

Bundesanstalt für Landtechnik Wieselburg/Austria	Octave analysis of noise at the drivers ear level	STEYR 8080 a (STEYR 357.15



Gear: VS 3 L
Travelling speed: 7,16 km/h