O.E.C.D. Report No.: 1093

Bundesanstalt für Landtechnik

A-3250 Wieselburg, Austria

Dieseltractor STEYR 377.05

Trade name:

STEYR 8110a (4WD)



Date of approval: 23.9.1987

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
SPECIFICATIONS OF TRACTOR	2
Tractor	2
Engine	2
Transmission to wheels	5
Power take-off	9
Power lift	10
Three-point-linkage	11
Trailer hitch	14
Towing hitch	16
Holed drawbar	16
Steering	17
Brakes	17
Wheels	18
Wheelbase	18
Driver's seat	19
Lighting	20
TEST CONDITIONS	21
TEST RESULTS	25
Compulsory test	25
Main power take-off performance - 1000 rev/min	25
Hydraulic power and lifting force	29
Performance of power lift	31
Drawbar performance	33
Turning area and turning circle	35
Location of centre of gravity	35
Braking	35
Measurement of external noise level	37
Noise measurement at driver's ear	37
	39
OPTIONAL TESTS	39
Main power take-off performance - 540 rev/min	39
Engine performance	43
Reduction of power data to standard conditions	47
Remarks	47
ANNEX	48
Octave analysis of noise at the driver's ear level	48

Tractor manufacturer's name and address:	STEYR-DAIMLER-PUCH AG., Steyr, Austria STEYR-HELLAS ABE., Sindos, Greece
Location of tractor assembly:	Steyr
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:	200 hours
Location of test:	Wieselburg, Austria

SPECIFICATIONS OF TRACTOR

TRACTOR:

Make:	STEYR-DAIMLER-PUCH AG.
Trade name:	STEYR 8110 a
Model:	Diesel-tractor STEYR 377.05
Type:	Wheel tractor, four-wheel driven, unit construction
Serial no.:	377.05 - 05815
1st serial no.:	377.05 - 06951

ENGINE:

Make:	Own make
Model:	WD 611.43
Type:	4 stroke diesel engine with direct injection
Serial no.:	611.43 - 5894

Cylinders:

Number/Disposition:	6, vertical in line
Bore/stroke:	100/110 mm
Capacity:	5184 cm^3
Compression ratio:	16,2/1
Arrangement of valves:	Overhead valves
Cylinder liners:	Wet liners

Fuel system:

Fuel feed system:	Fuel feed by gravity
Fuel precleaner:	Optional, PUROLATOR PFC-220

Make, model and type of fuel filter:	PUROLATOR PFC-233 Filter with water trap and changeable element, filter cartridge (PER 247-F)
Capacity of fuel tank:	appr. 122 l
Service interval:	500 hours changing interval of filter
Make, model, type and serial number of injection pump:	BOSCH distributor injection pump VE 6/R 92-1 0460 416 033, 011 447 74176
Manufacturer's production setting of injection pump, flow rate and timing:	42^{+0}_{-2} mm³/stroke at 1150 rev/min and full load $16^{+0°}_{-2}$ before TDC at 1 mm pump stroke
Make, model and type of injectors:	BOSCH or FRIEDMANN & MAIER or OMAP Multi hole injection nozzles BOSCH DLLA 150 S 798 FRIEDMANN & MAIER D 1 LMK 150/54 OMAP OLL 150 S 8344
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 2490^{+30}_{-0} rev/min engine speed

Rated engine speed: 2300 rev/min

Air cleaner:

Pre-cleaner:	
Make:	MANN & HUMMEL
Model:	MANN & HUMMEL 48.056.67.900
Type:	Cyclonic type with transparent dust container
Location of air intake:	Above the motor, above the bonnet
Main-cleaner:	
Make:	MANN & HUMMEL or PUROLATOR
Model:	MANN & HUMMEL 45.225.65.144 or PUROLATOR LP 080/ S/1
Type:	Dry type with changeable filter-paper-insert
Location:	Above the motor, inside the bonnet
Main filter paper insert:	MANN & HUMMEL, model C 17 225/3 or PUROLATOR, model PM 1605 or KNECHT, model AG 88 or HENGST, model E 114 L

Additional safety element:	Optional MANN & HUMMEL paper insert CF 800 or PUROLATOR paper insert AF 3100 or KNECHT paper insert SE 080
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. 13,8 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
Make:	Own make
Type:	Centrifugal pump with double circuit water cooling, 2 driving belts
Specification of fan:	7 blade fan (dia 460 mm, 2 belts driven)
Coolant capacity:	appr. 18 l (with cab heating 20 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, 3 kW, 0 001 367 005
Type:	Screw push 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, optional 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: 143 Ah at 20 hours rating

Exhaust system:

Make:	EBERSPÄCHER
Model:	EBERSPÄCHER 16.47.182.03.0.00
Location:	130 mm on the left side of the engine, vertically, mouth upwards, 2635 mm above ground without flap
Dimensions of silencer body:	1195 mm length, oval diameters of silencer 210/110 mm, diameter of exhaust pipe 52 mm

TRANSMISSION TO WHEELS:

Clutch:

Main clutch:	For travel alone
Make:	FICHTEL & SACHS AG.
Model:	F & S G 350 KR
Type:	Single plate dry clutch
Number of plates:	1
Diameter of plate:	350 mm
Method of operation:	Operated by pedal
P.t.o. clutch:	
Make:	KLÖCKNER-HUMBOLDT-DEUTZ
Model:	ORTLINGHAUS
Type:	Wet multiplate clutch, overload function, hydraulically engaged
Number of plates:	9
Diameter of plates:	132 mm
Method of operation:	Push-botton hand-switch operated

Front wheel drive clutch:	
Make:	STEYR
Type:	Wet multi-plate clutch, hydraulically disengaged
Number of plates:	21
Diameter of plates:	135 mm
Method of operation:	Hand-switch operated

Gearbox:

Make:	KLÖCKNER-HUMBOLDT-DEUTZ
Model:	TW 903
Type:	Mechanically acting gearbox
Normal model:	As tested, 40 km/h model Synchronized group gear with 3 forward and 1 reverse group combined with synchronized 6 speed change gear Totally: 18 forward and 6 reverse speeds 30 km/h model with synchronized 5 speed change gear Totally: 15 forward and 5 reverse speeds
Model with super crawler group:	Optional 4th forward group of group gear Spur gear reduction: 19,075 Totally: 24 forward and 6 reverse speeds, 40 km/h model 20 forward and 5 reverse speeds, 30 km/h model
Model with torque amplifier group:	Optional Gear reduction with wet multi-plate clutches, electrically-hydraulically activated Speed reduction: 1 : 1,14 Totally (with all options): 48 forward and 12 reverse speeds, 40 km/h model 30 forward and 10 reverse speeds, 30 km/h model
Arrangement:	1 lever for group gear (L, M, S, R) and optional super crawler group (K) 1 lever for the 6 speed gear (1 - 6) 1 push-botton switch for torque amplifier group

Rear axle and final drives:

Make:	KLÖCKNER-HUMBOLDT-DEUTZ
Model:	TW 903
Type:	Central axle with spur gear transmission from differential Pinion and bevel gear, bevel gear differential, spur gear to half shafts, acting on the rear wheels

Differential lock:	Type: mechanically acting from half shaft to half shaft Method of engagement: foot lever operated, lockable and preselectabel Method of disengagement: selfdisengaging
Front axle and final drives:	
Make:	SIGE-MAILAND or ZF-PASSAU
Model:	SIGE 002 or ZF-APL 335 Optional: ZF-APL 335 with dry-disc-brakes or SIGE 002 with integrated wet multi-plate brakes
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: electrically - hydraulically engaged, hand switch operated
Differential lock:	Optional Automatically locking differential ZF-PASSAU: multi-plate-clutch-type SIGE-MAILAND: no-spin-type
Switching aid:	
Make:	Own make Own oil circuit with BOSCH gear pump, situated in gearbox, directly driven by engine; oil supply common with gearbox and rear axle. Aid for switching front wheel drive clutch, p.t.o. clutch and optional equipment (i.e. torque amplifier group) Working pressure: $1{,}8^{+0{,}2}_{-0}$ MPa (18^{+2}_{-0} bar) Delivery rate: 22 l/min at 2300 rev/min of engine Common filter with hydraulic power lift circuit
Transmission oils:	
Capacity:	
Gearbox and rear axle:	appr. 40 l, MIL-L-2104 B, SAE 15 W - 40, API CC
Oil changing period:	2000 hours or 2 years
Front axle:	
Front axle differential:	appr. 5,7 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:

Group	Gear no.	Number of engine revolutions for one revolution of driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min *) km/h
forward super crawler K	1 **)	1596,20	0,45
	2 **)	1186,37	0,60
	3 **)	938,31	0,76
	4 **)	647,11	1,10
	5 **)	527,27	1,35
	6 **)	417,49	1,70
forward slow L	1	298,86	2,38
	2	222,13	3,20
	3	175,68	4,05
	4	121,16	5,87
	5	98,72	7,20
	6	78,17	9,10
forward medium M	1	144,54	4,92
	2	107,43	6,62
	3	84,97	8,37
	4	58,60	12,13
	5	47,75	14,89
	6	37,80	18,81
forward fast S	1	71,00	10,01
	2	52,77	13,47
	3	41,74	17,03
	4	28,78	24,70
	5	23,45	30,31
	6	18,57	38,29
reverse R	1	154,81	4,59
	2	115,06	6,18
	3	91,00	7,81
	4	62,76	11,33
	5	51,14	13,90
	6	40,49	17,56

*) Calculated with tyre index radius of 820 mm and test tyre equipment: 18,4 R 38 AS

**) Optional, not on tested tractor

POWER TAKE-OFF:

Main power take-off:

Type:	Independent p.t.o.
Method of engagement:	Wet multi-plate clutch, hydraulically engaged
Number of shafts:	1
Method of changing power take-off speeds:	Speed selection by hand lever and spur gear

Power take-off proportional to engine speed:

540 and 1000 rev/min

Location:	At rear of tractor
Diameter of power take-off shaft:	34,9 mm
Number of splines:	6, in conformity with ISO R 500, type I
Height above ground:	766,5 mm with tyre dynamic radius index of 820 mm
Distance from the median plane of the tractor:	0 mm
Distance behind rear wheel axle:	525 mm
P.t.o. speeds at rated engine speed:	585 rev/min resp. 1090 rev/min
Engine speeds at standard power take-off speeds:	2122 rev/min resp. 2110 rev/min
Ratio of rotation speeds (engine speed/ p.t.o. speed):	3,93 resp. 2,11
Power restriction and max. torque:	None
Direction of rotation (viewed facing driving end):	Clockwise

Front p.t.o.:

Location:	In front of tractor 676 mm above ground, 659 mm before front axle, in median plane of tractor Driven in direct line by the crankshaft of the engine
Dimension of p.t.o. shaft end:	ISO R 500, type I (35 mm, 6 splines)
P.t.o. speed at rated engine speed:	1110 rev/min at 2300 rev/min rated engine speed

Power restriction and max. torque:	None
Direction of rotation (viewed facing driving end):	Anticlockwise
Ratio of rotation speed (engine speed/ p.t.o. speed):	2,07

POWER LIFT:

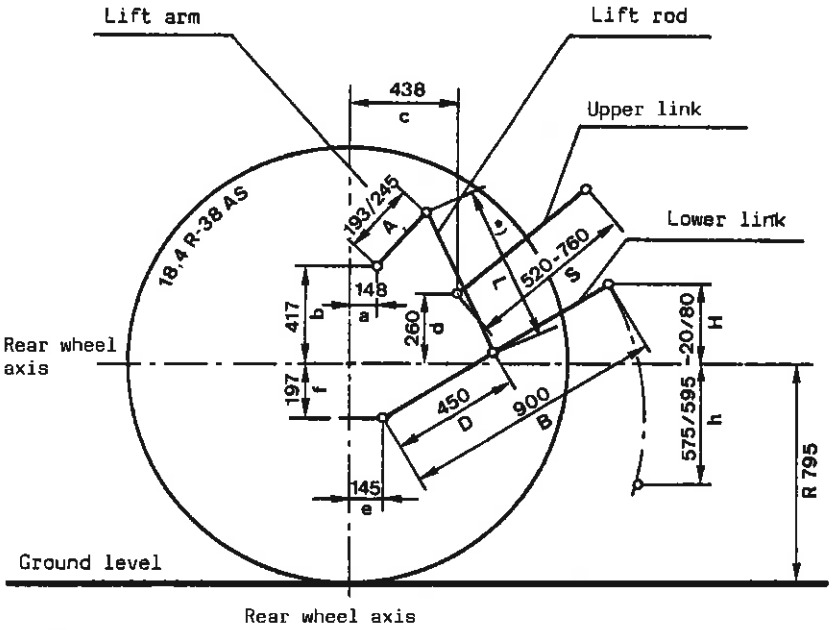
In the rear:	
Make:	Own make
Type:	Open center type, draught control with two-stage pull adjustment and upper link sensing, position control, floating position
Type and number of cylinders:	Single acting hydraulic cylinder, stroke and diameter: 160/105 mm and two additional single acting working cylinders, 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:	41 l/min at 2300 rev/min engine speed Optional: 48 l/min at 2300 rev/min engine speed
Transmission between pump and engine:	Pump directly driven by engine by gear transmissions
Type and number of filter:	One filter cartridge in the suction part
Time between oil and filter changes:	1000 hours
Oil capacity:	16 l; or optional additional 2 x 16 l
Site of oil reservoir:	Hydraulicblock-unit Optional: Additional oil tanks in the mudguards
Type and number of tapping points:	Up to 6 tapping points (3 independent oil circuits for double acting cylinders)
Location of tapping points:	540 mm behind rear axle, 475 - 580 mm about rear axle, 150 mm right of median plane In accordance to ISO/DIS 5675
Maximum volume of oil available to external cylinders:	6 l in stationary and driving mode with optional additional tanks: 38 l

Recommended oil:	ISO VG 46 HLP ISO VG 48 HLP
Electronic power lift control:	Optional, not on tested tractor Electronic position control, draft control or mixed adjustment of power lift. Floating position possible with draft setting. Sensitivity and lowering speed selectable. Quick lifting, reset of the setted dates and accelerated lowering to setpoint of the power lift can be switched.
Optional:	On tested tractor WALTERSCHEID linkage quick coupler, category II
In the front:	
Optional:	Not on tested tractor Three-point-linkage, category II, open center type 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

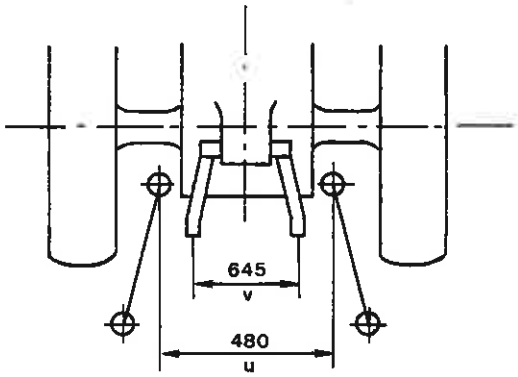
THREE-POINT-LINKAGE:

In the rear:	Category 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:



*) Right lift rod length adjustable from 645 - 800 mm by gear and thread
Left lift rod length adjustable from 660 - 775 mm by a thread



Linkage geometry (projected lengths):

Rear tyres (size 18,4 R 38 AS)		(r)	795 mm
Front tyres (size 14,9 - 24 AS) stat. radius:		(r')	590 mm
Length of lift arms:		(A)	193/245 mm
Length of lower links:		(B)	900 mm
Distance of lift arm pivot point from rear wheel centre line:	horizontally	(a)	148 mm
	vertically	(b)	417 mm
Horizontal distance between the 2 lower link points:		(u)	480 mm
Horizontal distance between the 2 lift arm end points:		(v)	645 mm
Length of upper link:		(S)	from 520 to 760 mm
Distance of upper link pivot point from rear wheel centre line:	horizontally	(c)	438 mm
	vertically	(d)	260 mm
Distance of lower link pivot point from rear wheel centre:	horizontally	(e)	145 mm
	vertically	(f)	197 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 645 to 800 mm
	left:		from 660 to 775 mm
Length of lift rods during test:			max.mech. advantage 775 mm min.mech. advantage 732 mm
Height of lower hitch points during test: *) - in low position; max.mech./min.mech. - in high position; max.mech./min.mech. relative to the rear wheel centre line, situated 795 mm above the ground level		(h) (H)	575/595 mm -20/80 mm
Height of lower hitch points when locked in transport position:			Any height within lift range

*) These data are valid for the unloaded power lift.

TRAILER HITCH:	Heights with tyre 18,4 R 38 AS (820 mm dyn. radius index)
	ROCKINGER, model 274 RA
	and
	ROCKINGER, model 248 RB
Type:	Fork type
Height above ground:	970/920/870/820/770/645/549/472 mm
Distance of hitch point from rear axle axis horizontally:	702 mm
Distance of hitch point from power take-off shaft end:	
vertically:	308/293 mm
horizontally:	rearwards 176 mm
Diameter of coupling pin:	31 mm
Maximum vertical permissible load:	15 kN
or	
	Own make
Type:	Fork type
Height above ground:	944/914/874/854 mm
Distance of hitch point from rear axle axis horizontally:	668 mm
Distance of hitch point from power take-off shaft end:	
vertically:	282/267 mm
horizontally:	rearwards 142 mm
Diameter of coupling pin:	31 mm
Maximum vertical permissible load:	15 kN
or	
	ROCKINGER, model 248 U 140 BA (~~~ M 4141)
Type:	Fork type
Height above ground:	944/914/874/844 mm
Distance of hitch point from rear axle axis horizontally:	663 mm

Distance of hitch point from power take-off shaft end:	
vertically:	282/267 mm
horizontally:	rearwards 138 mm
Diameter of coupling pin:	30 mm
Maximum vertical permissible load:	15 kN

or

	ROCKINGER, model 248 JB (~~ M 4121)
Type:	Fork type
Height above ground:	987/919/885/835/803/735/701/651 mm
Distance of hitch point from rear axle axis horizontally:	672 mm
Distance of hitch point from power take-off shaft end:	
vertically:	325/310 mm
horizontally:	rearwards 147 mm
Diameter of coupling pin:	30 mm
Maximum vertical permissible load:	15 kN

or

	ROCKINGER, model 273 JB (~~ M 4097)
Type:	Fork type
Height above ground:	982/924/880/840/798/740/696/656 mm
Distance of hitch point from rear axle axis horizontally:	672 mm
Distance of hitch point from power take-off shaft end:	
vertically:	320/305 mm
horizontally:	rearwards 147 mm
Diameter of coupling pin:	30 mm
Maximum vertical permissible load:	15 kN

or

	Own make
Type:	Fork type
Height above ground:	939/919/869/849/506/486/471/451 mm
Distance of hitch point from rear axle axis horizontally:	603 mm
Distance of hitch point from power take-off shaft end:	
vertically:	277/262 mm
horizontally:	rearwards 78 mm
Diameter of coupling pin:	28 mm
Maximum vertical permissible load:	15 kN

TOWING HITCH:

Type:	Fork type
Height above ground:	866 mm
Distance from front axle:	frontwards from 424 mm to 1054 mm (dependent from number of front ballast)
Diameter of coupling pin:	32 mm

HOLED DRAWBAR: Category II, fitted in the clevis of the lower links of the three-point linkage

Number of holes (with central hole):	7
Distance between holes:	115 mm
Hole diameter:	33 mm
Thickness/width of drawbar:	30/80 mm
Height above ground	
min.:	125 mm (lift rod length 775 mm, min.mech.)
max.:	1019 mm (lift rod length 660 mm, min.mech.)
Horizontal distance to p.t.o. shaft end (rear):	520 mm

STEERING:

Make:	ZF-SCHWÄBISCH GMÜND or DANFOSS
Model:	ZF 8492 or DANFOSS OSPC 125 OR
Type:	Hydrostatic steering
Method of operation:	Steering wheel acting on front wheels
Pump:	Gear pump, direct driven by engine
Ram:	One double acting cylinder, integrated in block of front axle, formed as a part of the steering connection rod
Working pressure:	10,0 MPa (100 bar)
Oil capacity:	3,6 l
Capacity of oil case:	1,2 l and 0,5 l for distress
Oil change period:	-
Filter:	STEYR 295 47 07 02 ZF 76 33 141 101
Filter change period:	1000 hours
Recommended oil:	ATF Dexron D
Number of revolutions of steering wheel for the whole steering lock:	3,75

BRAKES:

Service brake:

Make:	TEVES and own make
Type:	Dry disc brake, acting on differential shafts, 275 mm diameter of brake disc, acting diameter of brake disc 210 mm, 2 brake calipers each, combined with "STEYR-Optistop"
Optistop:	Electrically-hydraulically activated four-wheel drive clutch when service brake is operated. Front axle is connected with the rear axle (brakes) when there is a failure in the hydraulic or (resp. and) electric circuit
Method of operation:	Pedal operated, hydraulically transmission
Trailer braking take-off:	Optional, on tested tractor In conformity with national regulations Pressure air system: High pressure air system, one or one and two (three) line system, air compressor V-belt driven Storage pressure: $1{,}8^{+0{,}2}$ MPa (18^{+2} bar) Storage volume: 20 l Working pressure: 0,72 MPa (7,2 bar) one line system 0,53 MPa (5,3 bar) two line system

Parking brake:

Make:	TEVES
Type:	Mechanically acting on separate drum brakes 180 mm diameter, 60 mm width
Method of operation:	Hand lever with ratchet, mechanically transmission
Steering assistance brake:	Operated by divided pedal of service brake, pedals disconnectable by a flap

WHEELS:

Number:	Front: 2, steering and driving function Rear: 2, driving function

WHEELBASE: 2597 mm

PROTECTIVE STRUCTURE:

OECD-approval number:	CSD 0935/2-a(C), 17.1.1985, Wieselburg, dynamic test
Trade name:	Model STEYR 110.11
Manufacturer's name and address:	STEYR-DAIMLER-PUCH AG., Steyr, Austria
Protective device:	On tested tractor: full closed cab Frame, completeable to full closed cab, not tilting Strength tested to national legislation (identical to OECD-Code)

Materials used in the construction and dimensions:

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 no. E-00070

DRIVER'S SEAT:

Make and type:	Grammer DS 85 H/3; tested on tractor according to national regulation (Prot.Nr. 134/78)
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:	Grammer LS 95 H 1/90; tested on tractor according to national regulation (Prot.Nr. 112/86)
Type of suspension:	X-lever with air springs suspension, with battery driven air compressor, adjustable to driver's weight and three positions of seat. The seat is swingable 10° to right with additional lever, a horizontal suspension with 22,5 mm oscillation can be activated.
Type of damping:	Hydraulically damping
Range of adjustment,	
longitudinal:	150 mm
vertical:	60 mm
or	
Make and type:	Bostrom XH 2 TS; tested on tractor according to national regulation (Prot.Nr. 130/78)
Type of suspension:	X-lever with torsion springs, adjustable to driver's weight
Type of damping:	Hydraulically damping
Range of adjustment,	
longitudinal:	140 mm
vertical:	70 mm
or	
Make and type:	As on tested tractor Klepp Elastomat 1050; according to national regulation (Prot.Nr. 058/82)
Type of suspension:	2 parallel levers with a column-guiding and 2 tension springs
Type of damping:	Hydraulically damping
Range of adjustment,	
longitudinal:	85 mm
vertical:	60 mm

MISCELLANEOUS:

Additional seat:	Optional, not on tested tractor
Location:	On the left mudguard
Number of places:	1

LIGHTING: In accordance with Austrian legislation

	*) Height above ground of centre mm	Size mm	**) Distance from outside edge of tractor to centre mm
Head lights	1120	135 x 115	975
Side lights	1620	65 x 70	310
Rear lights	1680	65 x 70	310
Brake lights			
Direction indicators front	1610	65 x 70	220
Direction indicators rear	1680	65 x 70	220
Reflectors	1680 760	35 x 60 80 dia	265 710

*) Measured with tyre dyn. radius index at rear 820 mm and 590 mm at front

**) With overall width of 2245 mm (measured on the outside edge of the rear wheels)

TEST CONDITIONS

Overall dimensions:

	Length	Width *)	Height at top of	
			exhaust silencer	protective structure
	mm	mm	mm	
With ballast	4685	2298	2635	2680
Without ballast	4330	2240	2680	2680

*) Measured on the outside edges of the rear wheels

Ground clearance:
(unballasted)

Clearance limiting part:
385 mm under the trailer hitch mounting console
470 mm below the gearbox
470 mm below the front axle differential

Tractor mass: With tanks full

		Without driver	With driver
		kg	kg
Unballasted	Front	1458	1473
	Rear	2882	2942
	Total	4340	4415
Ballasted	Front	2385	2400
	Rear	4096	4156
	Total	6481	6556

Ballast:

	Number of weights	Mass total kg	Water kg
Front	15	491	330
Rear	2 x (4 + 1)	498	822
Additional	-	-	-

Tyres, axles load and track specifications:

Tyres:

	Front wheels	Rear wheels
Dimensions	14,9 - 24 AS rim: W 11 x 24	18,4 R 38 AS rim: W 16 L x 38
Ply rating	6	8
Type	diagonal carcass	radial carcass
Max. load (tyre manufacturer's)	14,8 kN (1510 kp) or 20,7 kN (2115 kp) with speed limit of 8 km/h	26,6 kN (2715 kp) or 37,28 kN (3800 kp) with speed limit of 8 km/h
Max. load (tractor manufacturer's)	-	-
Inflation pressure (tyre manufacturer's)	1,4 bar or 1,75 bar inflation pressure with overload	1,4 bar or 1,75 bar inflation pressure with overload
Dynamic radius index	590 mm	820 mm
Track width	1700 mm	1765 mm

Possible combinations of tyres:

Track width front / rear	Front wheels	Rear wheels
1680 / 1524 mm by reversed wheels: 1860 / 1780 mm	12,4 - 24	16,9 - 34
1679 / 1654 mm by reversed wheels: 1859 mm	13,6 - 24	18,4 - 34
1677 / 1654 mm by reversed wheels: 1857 mm	14,9 - 24	16,9 - 38
1774 / 1654 mm	18,4/70 R - 38	
1677 / 1654 mm	12,4 - 28	16,9 - 38 18,4/70 R - 38
1694 / 1774 mm by reversed wheels: 1840 mm	14,9 - 26	18,4 - 38

Oil and lubrication:

Capacity and change interval:

	Capacity (dm^3)	Oil change (h)	Filter change (h)
Engine	13,8	250	250
Gear box and rear axle	40	2000 or 2 years	1000
Front axle	5,7 differential drive 2 x 0,8 final drive	1000	-
Hydraulic system	16	1000	500
Steering	3,6	250 control	1000
Brake	0,6	2000 or 2 years	-
Number of lubrication points	16	to lubricate each 60	-

Specifications:

	Recommended:	Used during test:
Engine oil:	One range viscosity oil	
Type:	API CC, MIL-L-2104 B or API CD, MIL-L-2104 C	SHELL RIMULA X 10 W
Viscosity:	SAE 30 summer SAE 20 W/20 winter	
Transmission oils:		
Type:	API CC, MIL-L-2104 B	SHELL ROTELLA X-oil
Viscosity:	SAE 30	
Hydraulic fluid:		
Type:	ISO VG 46 HLP ISO VG 68 HLP	SHELL TELLUS 46
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/C	SHELL SPIRAX EP 90
Viscosity:	SAE 90 W	
Brake fluid:		
Type:	SAE J 1703e FMVSS 116 DOT 3	ATE DOT 3
Recommended grease:	Lithium soap basis NLGI2 (multigrade grease)	
Number of lubrication points:	16	
Fuel:	Diesel fuel	
Type:	ELAN according to DIN 51601	
Specific gravity at 15°C:	0,844 kg/l	

TEST RESULTS

COMPULSORY TEST:

Main power take-off performance

Date and location of tests: 13.11.1986, Wieselburg, Austria
Type of dynamometer: SCHENCK eddy current brake W 780

Main test on: ISO R 500, type 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					
61,69	2300	1090	16,33 19,35	264,6	3,182
Power at rated engine speed					
61,69	2300	1090	16,33 19,35	264,6	3,182
Standard power take-off speed - 1000 rev/min					
60,20	2110	1000	15,62 18,51	259,5	3,252
PART LOADS					
(i) the torque corresponding to maximum power at rated engine speed					
61,69	2300	1090	16,33 19,35	264,6	3,182
(ii) 85 % of torque obtained in (i)					
53,63	2353	1115	14,42 17,09	268,9	3,138
(iii) 75 % of torque defined in (ii)					
40,73	2382	1129	11,76 13,93	288,6	2,924
(iv) 50 % of torque defined in (ii)					
27,44	2408	1141	9,20 10,90	335,5	2,517
(v) 25 % of torque defined in (ii)					
14,03	2452	1162	7,03 8,33	501	1,684
(vi) unloaded					
0	2502	1186	4,70 5,57	-	-

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 - 1000 rev/min					
(i) The torque corresponding to maximum power available					
60,20	2110	1000	15,62 18,51	259,5	3,252
(ii) 85 % of torque obtained at maximum power					
53,98	2226	1055	14,30 16,94	265,0	3,187
(iii) 75 % of torque defined in (ii)					
41,43	2277	1079	11,45 13,57	276,5	3,053
(iv) 50 % of torque defined in (ii)					
28,06	2313	1096	9,08 10,76	323,5	2,608
(v) 25 % of torque defined in (ii)					
14,32	2361	1119	6,82 8,08	476,0	1,772
(vi) unloaded					
0	2403	1139	4,70 5,57	-	-

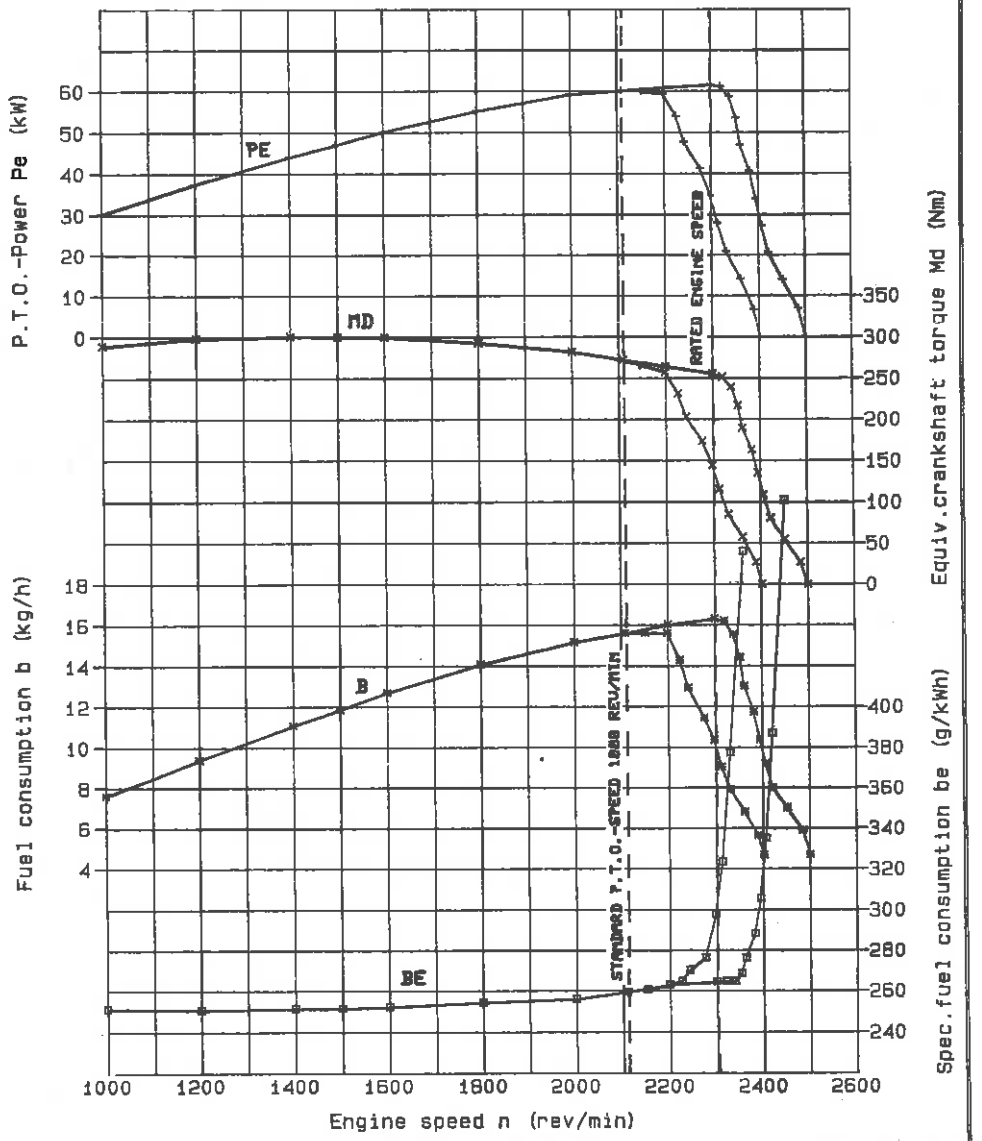
STANDARD SPECIFIC FUEL CONSUMPTION: 268,9/335,5 - 265,0/323,5 g/kWh

No load maximum engine speed: 2502 rev/min
Equivalent crankshaft torque
at maximum power: 256,14 Nm
Maximum equivalent crankshaft torque: 300,96 Nm at 1400 rev/min of engine

Mean atmospheric conditions	temperature:	15°C
	pressure:	996 mbar
	rel. humidity:	88 %
Maximum temperatures.	coolant:	91°C
	engine oil:	105°C
	fuel:	25°C
	engine air intake:	32°C

BUNDESANSTALT FÜR LANDTECHNIK Wieselburg/Erlauf, Austria Prot.Nr.: 010/86	P.T.O.-test	STEYR-DIESELTRACTOR TYP 377.05 (8110A) MOT.TYP STEYR WD611.43

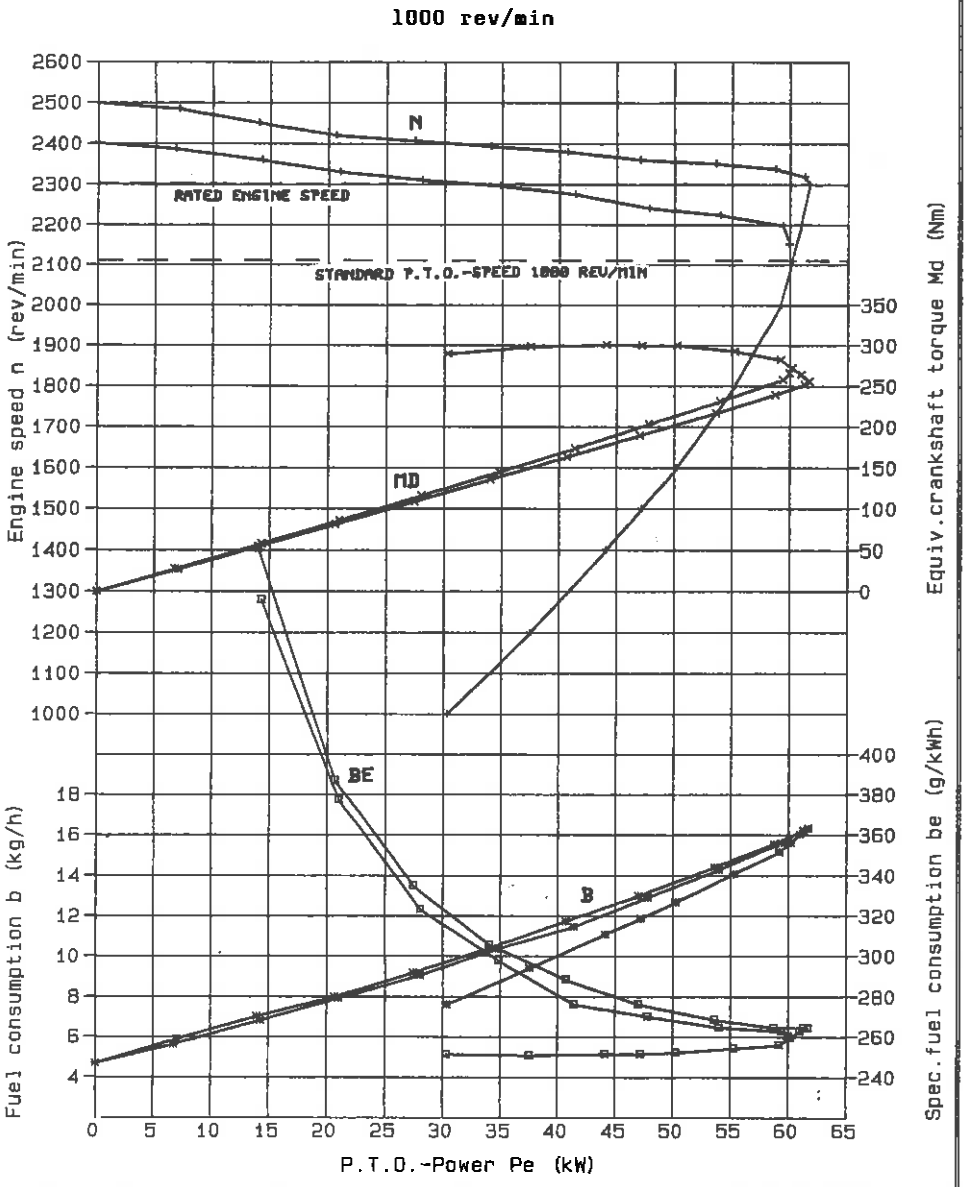
1000 rev/min



engine ser.nr. : 611.43-5894	atm. pressure: 996 MBAR	fuel temp. : 25 C	signature
tractor ser.nr.: 377.05-05815	air temper. : 15 C	d.of tests : 1986-11-13	
fuel : 0.844/15 C	coolant temp.. 91 C	test no. :	
engine oil : RIMULA X 10W	oil temp. : 105 C	curves no. : 1	LUGER

20-FEB-87 EDV-PRO5: MKL - DATEI: MKU174 Z1000

BUNDESANSTALT FÜR LANDTECHNIK Wieselburg/Erlauf, Austria Prot.Nr.: 010/86	P.T.O.-test	STEYR-DIESELTRACTOR TYP 377.05 (8110A) MOT.TYP STEYR WD611.43



engine ser.nr. : 611.43-5894	atm. pressure: 996 MBAR	fuel temp. : 25 C	signature
tractor ser.nr.. 377.05-05815	air temper. : 15 C	d.of tests : 1986-11-13	
fuel : 0.844/15 C	coolant temp.. 91 C	test no. :	
engine oil : RIMULA X 10W	oil temp. : 105 C	curves no. : 2	LUGER

HYDRAULIC POWER AND LIFTING FORCE:

Date and location of tests:	25.11.1985, Wieselburg, Austria

Hydraulic power test:

Type of hydraulic system:	Open center type
Sustained pressure with relief valve open:	18,0 MPa (180 bar)
Pump delivery rate at minimum pressure:	41 l/min at 2300 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:	39,5 l/min at 2300 rev/min
Pressure:	16,7 MPa (167 bar)
Power:	11,0 kW
Flow rate and hydraulic pressure corresponding to maximum hydraulic power:	
Flow rate:	40 l/min at 2300 rev/min
Pressure:	17,5 MPa (175 bar)
Power:	11,6 kW
Tapping point used for test:	At rear of tractor
Temperature of hydraulic fluid, if different from 65° ± 5°C:	-
Opening pressure of the unloading valve:	18,5 MPa (185 bar)
Closing pressure of the unloading valve:	18,0 MPa (180 bar)

Power lift test: Height above ground with tyre stat. radius of 795 mm

	**) Height of lower hitch points above ground in down position mm	**) Vertical movement (on the force measuring 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	220/200	555/675	32,8/26,0 53,6/42,2*	16,7 (167 bar)	34,3/27,2 56,0/44,1*	-
On the frame 510 mm mast height	220/200	570/715	27,7/22,1 43,4/32,4*	16,7 (167 bar)	28,9/23,1 45,4/33,9*	from +2° to 0° and to +4°

*) With additional working cylinder

**) Max./min.mechanical advantage
Lift rod length max.mech.advantage: 775 mm
Lift rod length min. mech.advantage: 732 mm

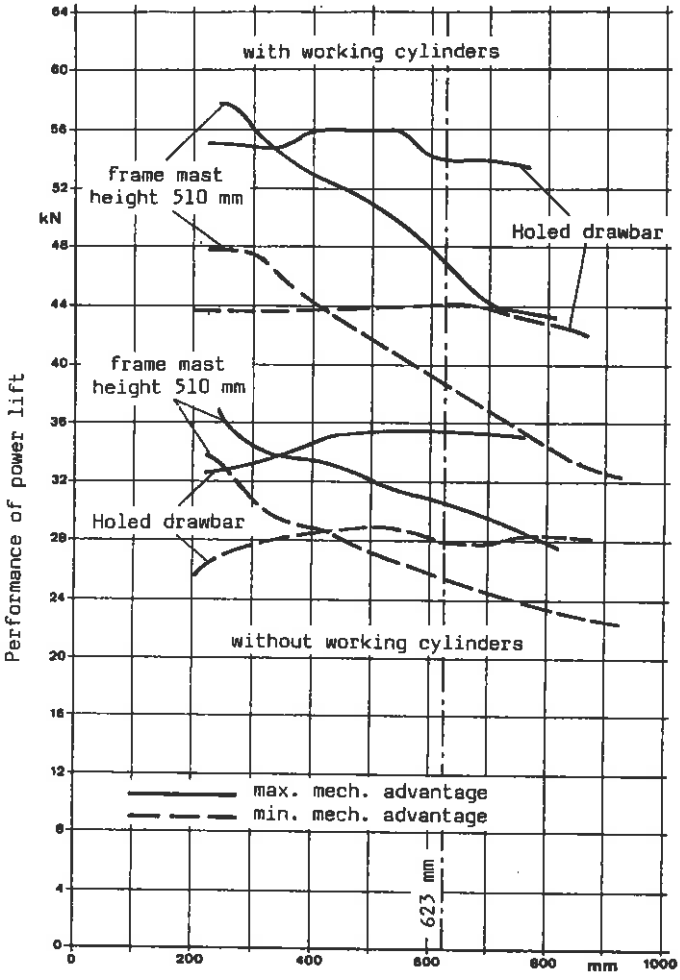
Linkage settings for test: See table and figure in specifications

Performance of power lift

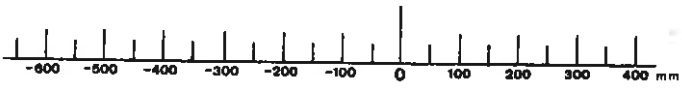
Lifting heights relative to the horizontale plane including the lower link pivot points mm		-415	-390	-375	-315	-285	-195	-135	-75	0	+75	+140	+185	+240	+300
Lifting force at the hitch-points kN (Values for the pressure, calculated with 90 % of sustained oil pressure)	max.mech. advantage		32,8 55,0*	32,9 55,0*	33,4 54,8*	34,2 55,4*	35,1 55,9*	35,3 56,0*	35,4 55,8*	35,4 54,1*	35,3 53,9*	35,10 53,6*			
	min.mech. advantage	26,0 43,8*	26,8 43,8*	27,0 43,8*	27,8 43,8*	28,3 43,8*	28,8 43,9*	29,0 43,9*	28,8 44,0*	27,9 44,2*	27,8 43,8*	28,3 43,3*	28,2 42,7*	28,2 42,2*	
	Maximum force exerted through whole range: 32,8/26,0 kN (3345/2650 kp) 53,6*/42,2* kN (5465*/4302* kp)														
	Calculated oil pressure: 16,7 MPa (167 bar)														
Lifting force at the standard frame 510 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			36,40 57,8*	34,3 55,8*	33,7 53,8*	33,4 52,4*	32,4 51,3*	31,3 49,7*	30,6 47,0*	29,6 44,4*	28,5 43,6*	27,7 43,4*		
	min.mech. advantage		33,7 47,8*	33,2 47,4*	30,4 45,0*	29,2 43,8*	28,6 42,1*	27,4 40,6*	26,5 38,8*	25,5 38,8*	24,6 37,0*	23,7 35,4*	23,2 34,2*	22,7 33,1*	22,1 32,4*
	Maximum force exerted through whole range: 27,7/22,1 kN (2824/2253 kp) 43,3*/32,4* kN (4424*/3303* kp)														
	Calculated oil pressure: 16,7 MPa (167 bar)														

*) with working cylinders

Performance of power lift:



Lifting height above ground



Height relative to the horizontal plane including the lower link pivot points (dyn. radius index 820 mm)

Drawbar performance

Date of tests: 12.5.1987
Type of track: Concrete
Height of drawbar above ground: 460 mm ballasted and unballasted

Tyres sizes: front 14,9 - 24 AS, rear 18,4 R 38

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 and in the rear 1,1 bar													
L 1	2,142	27,19	45700	2395	15,0	325,8	2,590	26	82	98	8	72	981
L 2	2,819	35,79	45702	2358	15,0	352,8	2,392	28	84	100	9	70	981
L 3	3,607	45,79	45698	2347	15,0	340,2	2,480	29	86	101	10	70	981
M 1	4,702	51,87	39713	2300	6,4	311,1	2,713	33	83	100	10	68	981
L 4	5,713	54,02	34037	2300	4,7	298,7	2,825	33	83	100	10	68	981
M 2	6,494	53,38	29590	2300	4,0	302,3	2,792	33	85	100	10	68	981
L 5	7,106	52,53	26610	2300	3,5	307,2	2,747	34	85	101	11	67	981
M 3	8,291	53,08	23049	2300	3,0	304,0	2,776	34	86	101	11	67	981
L 6	9,036	52,23	20813	2300	2,8	308,9	2,732	35	86	101	11	67	981
S 1	9,976	52,68	19011	2300	2,5	306,3	2,755	36	86	100	11	68	981
M 4	12,150	52,76	15632	2300	2,0	305,8	2,759	36	86	100	11	68	981
S 2	13,504	51,17	13642	2300	2,0	315,3	2,676	36	85	101	11	68	981

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 and in the rear 1,1 bar													
L 1	2,117	36,96	62867	2357	15,0	386,7	2,183	27	84	100	10	72	986
L 2	2,945	50,09	61241	2300	9,7	322,1	2,620	29	86	100	8	72	986
L 3	3,916	52,50	48261	2300	4,7	307,4	2,746	30	84	101	8	72	986
M 1	4,824	53,00	39567	2300	3,8	304,5	2,772	30	84	101	8	72	986
L 4	5,796	53,75	33386	2300	3,2	300,2	2,811	31	85	101	8	72	986
M 2	6,556	52,56	28858	2300	2,9	307,0	2,749	32	86	101	10	72	986
L 5	7,150	52,30	26337	2300	2,5	308,5	2,735	32	85	101	10	72	986
M 3	8,330	52,53	22703	2300	2,3	307,2	2,747	32	83	101	8	72	986
L 6	9,090	50,51	20000	2300	2,0	319,5	2,642	33	86	102	10	72	986
S 1	10,012	51,13	18384	2300	1,9	315,6	2,674	34	85	105	10	72	986
M 4	12,136	50,75	15056	2300	1,8	318,0	2,654	34	84	102	10	72	986
S 2	13,514	48,90	13027	2300	1,6	330,0	2,558	35	85	102	10	72	986
(iii) Five-hour-test at 75 % of pull at maximum power													
L 4	5,994	41,93	25184	2362	2,4	301,1	2,803	27	84	99	2	84	988
(iv) Five-hour-test at pull corresponding to 15 % wheelslip in test (ii)													
L 1	2,114	36,93	62880	2355	15,0	387,0	2,181	33	84	100	5	88	991

Total oil consumption during 10 hours duration of tests (iii) and (iv): 84 g/h

TURNING AREA AND TURNING CIRCLE:

Wheel equipment: front: 14,9 - 24 AS, 6 PR; rim: W 11 x 24
rear: 18,4 R 38 AS, 8 PR; rim: DW 16 L x 34

Track of wheel: front: 1700 mm
rear: 1765 mm

Results *)	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning area	4,44/4,38	4,43/4,38	5,88/5,18	5,75/5,09
Radius of turning circle	4,09/4,03	4,08/4,03	5,53/4,83	5,40/4,74

*) Four wheel drive switched: ON/OFF

LOCATION OF CENTRE OF GRAVITY:

	mm
Height above ground	1183
Distance forward from the vertical plane containing the axis of the rear wheels	863
Distance from the median plane of the tractor, right-side	3

BRAKING:

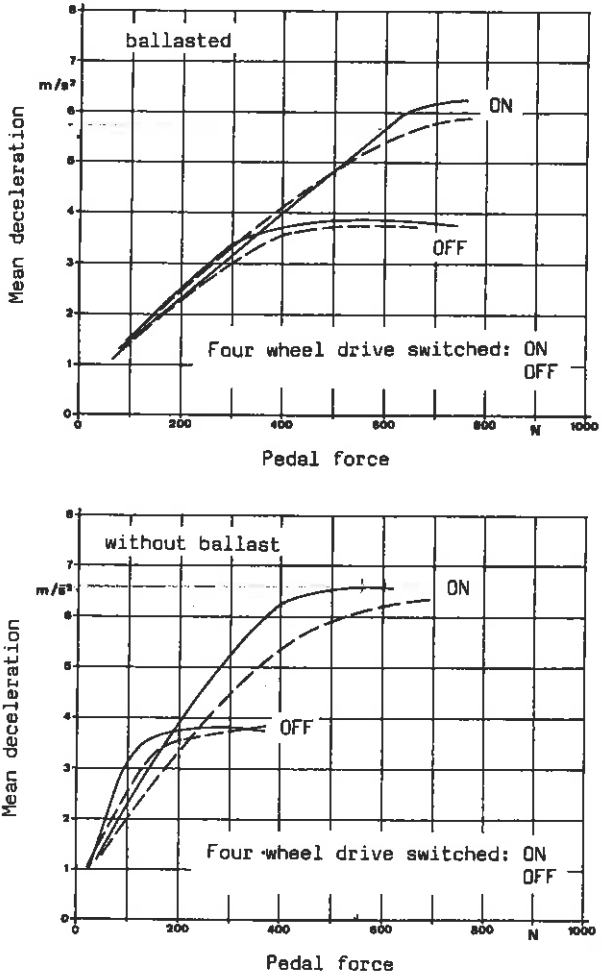
Date of tests: 29.5.1987
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)

Tractor mass during brake tests (with driver):

	Front kg	Rear kg	Total kg
Ballasted	2400	4156	6556
Unballasted	1473	2942	4415

Service brake:

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



Speed before application of brakes: 40 km/h
The tractor brakes were heated by towing of the tractor for 1 km.

Maximum deviation 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	90/80* N	60/60* N	70/65*N	50/50* N

* four-wheel-drive switched ON

MEASUREMENT OF EXTERNAL NOISE LEVEL:

Date of tests: 22.5.1987

Type of sound level meter: BRÜEL & KJAER 2209 and 2308

Type of track: Concrete

Gear number: S 6

Travelling speed before acceleration: 30 km/h

Sound level: 86,5 dB(A)

NOISE MEASUREMENT AT DRIVER'S EAR:

Date of tests: 22.5.1987

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)
With cab closed			
L 1	37,4	2,36	86,0
L 2	38,4	3,03	87,0
L 3	34,9	4,00	87,0
M 1	36,8	4,75	86,5
L 4	33,1	5,79	86,0
M 2	29,5	6,58	87,0
L 5	26,8	7,15	86,5
L 5 *)	light load (1,2)	7,52	83,5
M 3	23,5	8,37	86,5
L 6	20,7	9,15	86,5
S 1	19,2	10,06	87,5
M 4	12,5	12,50	86,0
S 2	13,7	14,44	86,0
M 5	12,1	15,09	87,0
S 3	10,1	17,43	87,0
M 6	6,2	19,48	86,5
S 4	5,7	25,46	87,0
S 5	3,5	31,37	87,0
S 6	2,1	39,70	86,5

*) The L 5 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: 14.11.1986
Type of dynamometer: SCHENCK eddy current brake W 780

Main test on: ISO R 500, type I (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 l/h	g/kWh	kWh/l
MAXIMUM POWER					
Maximum power - 2 hours test					
61,72	2300	585	16,29 19,30	264	3,198
Power at rated engine speed					
61,72	2300	585	16,29 19,30	264	3,198
Standard power take-off speed					
60,75	2122	540	15,66 18,56	258	3,273
PART LOADS					
(i) the torque corresponding to maximum power at rated engine speed					
61,72	2300	585	16,29 19,30	264	3,198
(ii) 85 % of torque obtained in (i)					
53,71	2354	599	14,47 17,15	269,5	3,132
(iii) 75 % of torque defined in (ii)					
40,82	2385	607	11,73 13,90	287,5	2,937
(iv) 50 % of torque defined in (ii)					
27,48	2408	613	9,26 10,97	337	2,505
(v) 25 % of torque defined in (ii)					
13,99	2452	624	7,02 8,32	502	1,681
(vi) unloaded					
0	2503	637	4,96 5,88	-	-

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					
60,75	2122	540	15,66 18,56	258	3,273
(ii) 85 % of torque obtained at maximum power					
54,12	2224	566	14,09 16,69	260,5	3,243
(iii) 75 % of torque defined in (ii)					
41,44	2267	577	11,52 13,65	278	3,036
(iv) 50 % of torque defined in (ii)					
28,16	2314	589	9,04 10,71	321	2,629
(v) 25 % of torque defined in (ii)					
14,36	2361	601	6,75 8,00	469,5	1,795
(vi) unloaded					
0	2397	610	4,56 5,40	-	-

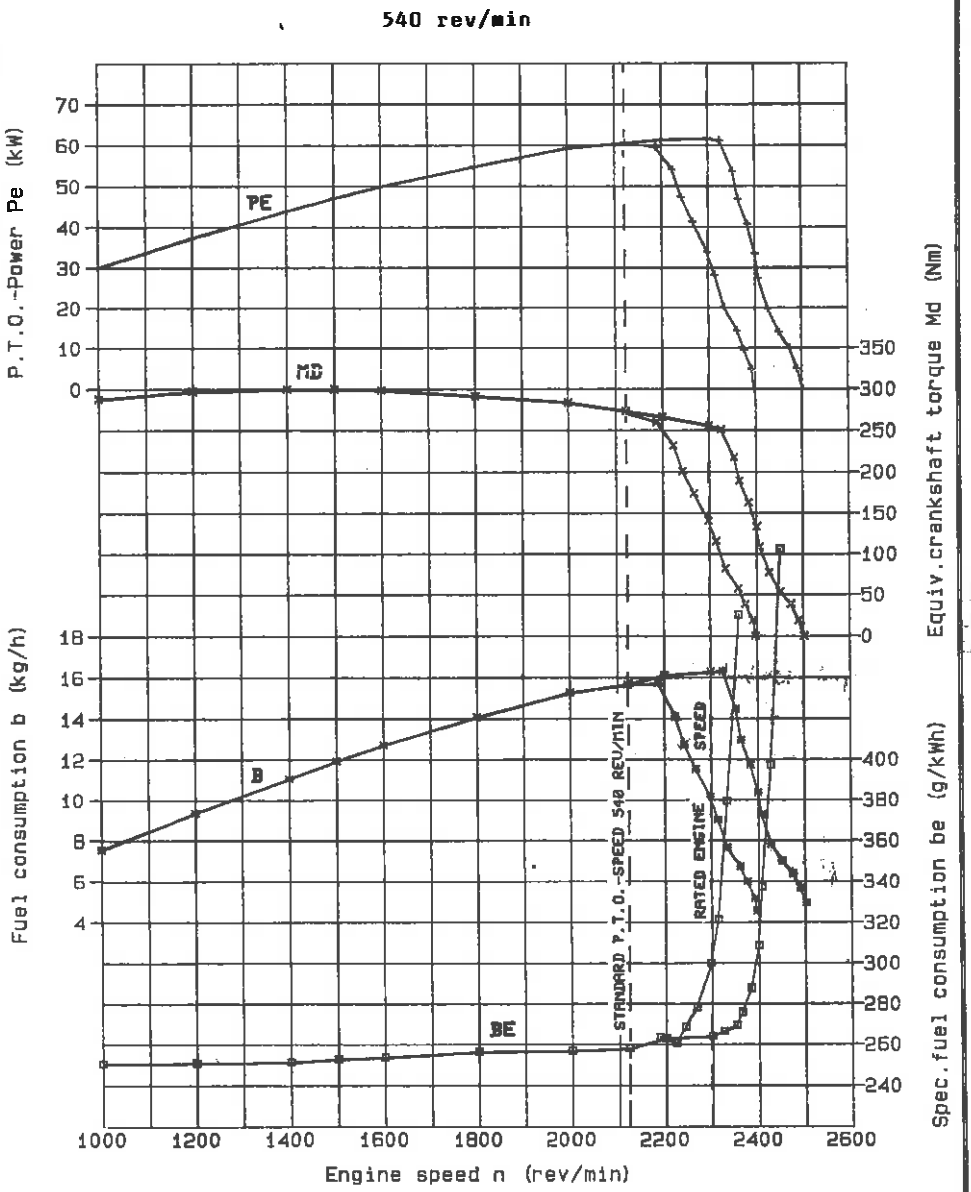
STANDARD SPECIFIC FUEL CONSUMPTION: 269,5/337 - 260,5/321 g/kWh

No load maximum engine speed: 2503 rev/min
Equivalent crankshaft torque
at maximum power: 256,24 Nm
Maximum equivalent crankshaft torque: 300,33 at 1500 rev/min of engine

Mean atmospheric conditions
temperature: 15°C
pressure: 992 mbar
rel. humidity: 86 %

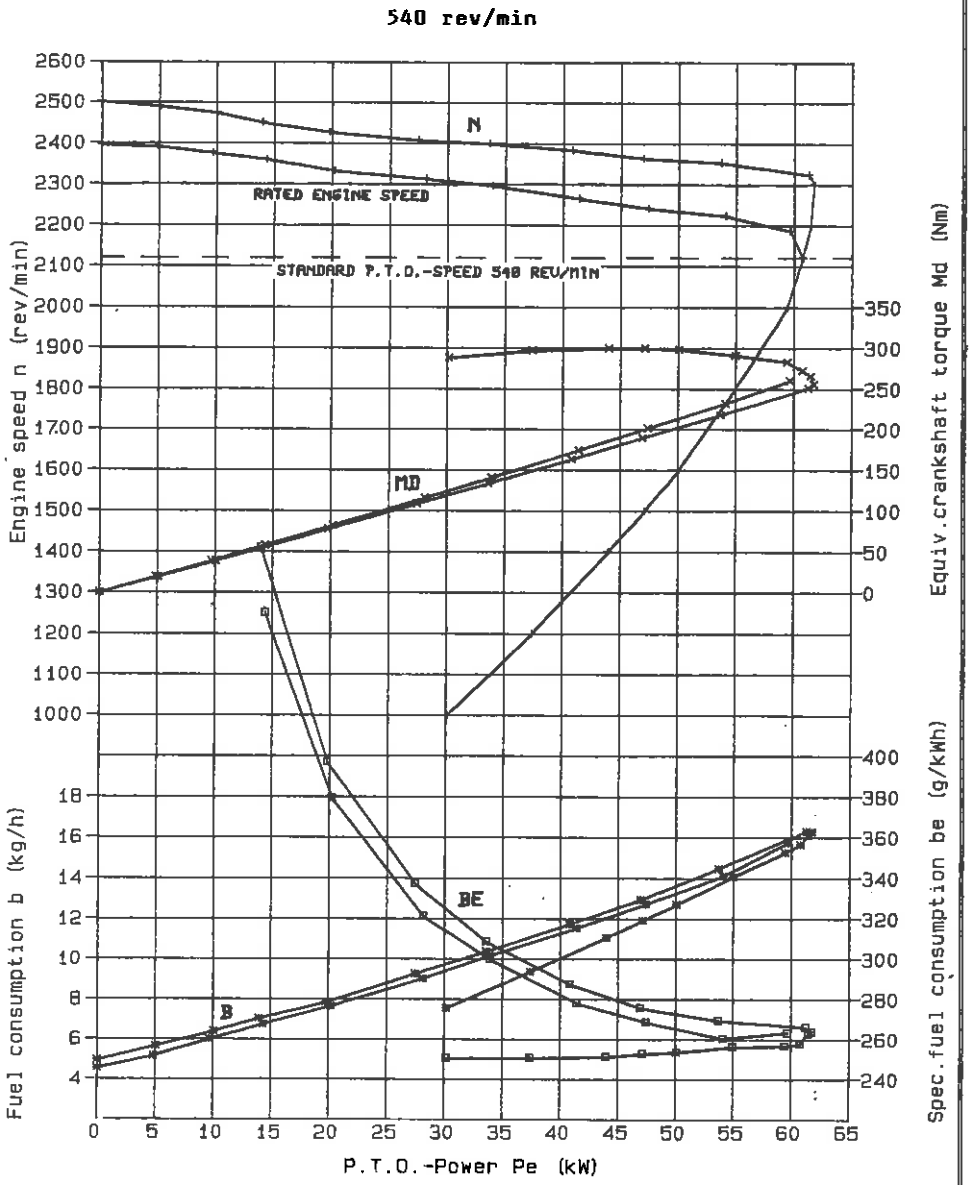
Maximum temperatures.
coolant: 91°C
engine oil: 108°C
fuel: 25°C
engine air intake: 32°C

BUNDESANSTALT FÜR LANDTECHNIK Iesselburg/Erlauf, Austria Prot.Nr.: 010/86	P.T.O.-test	STEYR-DIESELTRACTOR TYP 377.05 (8110A) MOT.TYP STEYR WD611.43



Engine ser.nr. : 611.43-5894	atm. pressure: 992 MBAR	fuel temp. : 25 C	signature
Tractor ser.nr.: 377.05-05816	air temper. . 15 C	d.of tests : 1986-11-14	
Fuel : 0.844/15 C	coolant temp.: 91 C	test no. .	
Engine oil : RIMULA X10W	oil temp. : 108 C	curves no. : 3	LUGER

BUNDESANSTALT FÜR LANDTECHNIK Wieselburg/Erlauf, Austria Prot.Nr.: 4	P.T.O.-test	STEYR-DIESELTRACTOR TYP 377.05 (8110A) MOT.TYP STEYR WD611.43



engine ser.nr. : 611.43-5894	atm. pressure: 992 MBAR	fuel temp. : 25 C	signature
tractor ser.nr.. 377.05-05815	air temper. . 15 C	d.of tests : 1985-11-14	
fuel : 0.844/15 C	coolant temp.. 91 C	test no.	
engine oil : RIMULA X10W	oil temp. : 108 C	curves no. . 4	LUGER

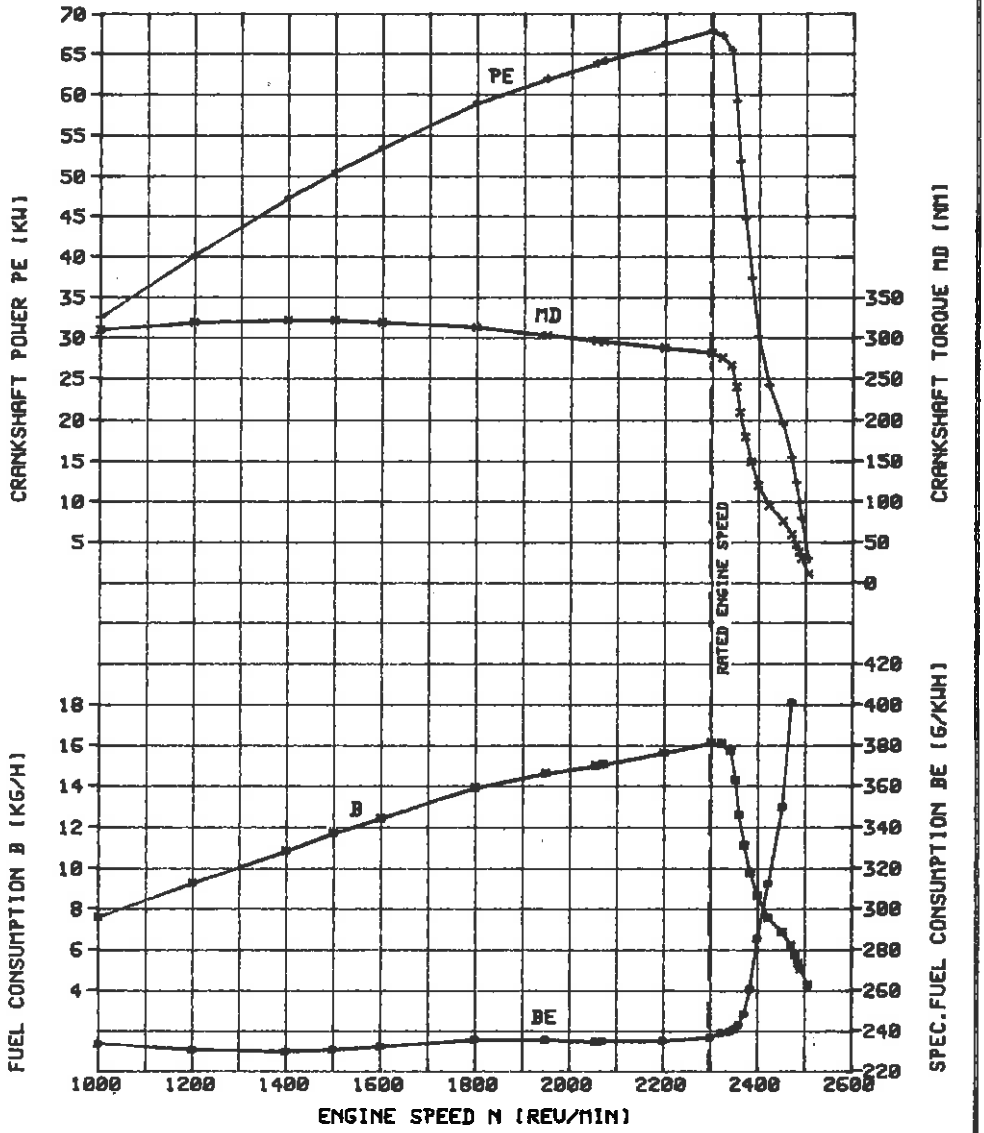
Engine performance

Date and location of test: 5.11.1985, Wieselburg, Austria
Type of dynamometer: SCHENCK-eddy current brake W 780

Power	Engine speed	Fuel consumption		Specific energy
		hourly	specific	
kW	rev/min	kg/h 1/h	g/kWh	kWh/l
Maximum power - 2 hours test				
68,08	2300	16,14 19,12	237	3,56
Power at rated engine speed				
68,08	2300	16,14 19,12	237	3,56
Standard power take-off speed				
64,23	2072	15,10 17,89	235	3,59
63,94	2056	15,02 17,80	235	3,59
Part loads				
(i) the torque corresponding to maximum power at rated engine speed				
68,08	2300	16,14 19,12	237	3,56
(ii) 85 % of torque obtained in (i)				
59,30	2353	14,29 16,93	241	3,50
(iii) 75 % of torque defined in (ii)				
44,85	2373	11,15 13,20	248,5	3,40
(iv) 50 % of torque defined in (ii)				
30,24	2400	8,64 10,24	285,5	2,95
(v) 25 % of torque defined in (ii)				
15,57	2472	6,25 7,40	401	2,10
(vi) unloaded				
0	2515	3,85 4,56	-	-

Optimum fuel consumption: 230 g/kWh at 47,32 kW and 1400 rev/min
No load maximum engine speed: 2515 rev/min
Torque at maximum power: 282,6 Nm
Maximum torque: 322,8 Nm at 1400 - 1500 rev/min of engine
Mean atmospheric conditions: temperature: 15°C
pressure: 973 mbar
relative humidity: 88 %
Maximum temperatures: coolant: 90°C
engine oil: 106°C
fuel: 42°C
engine air intake: 25°C

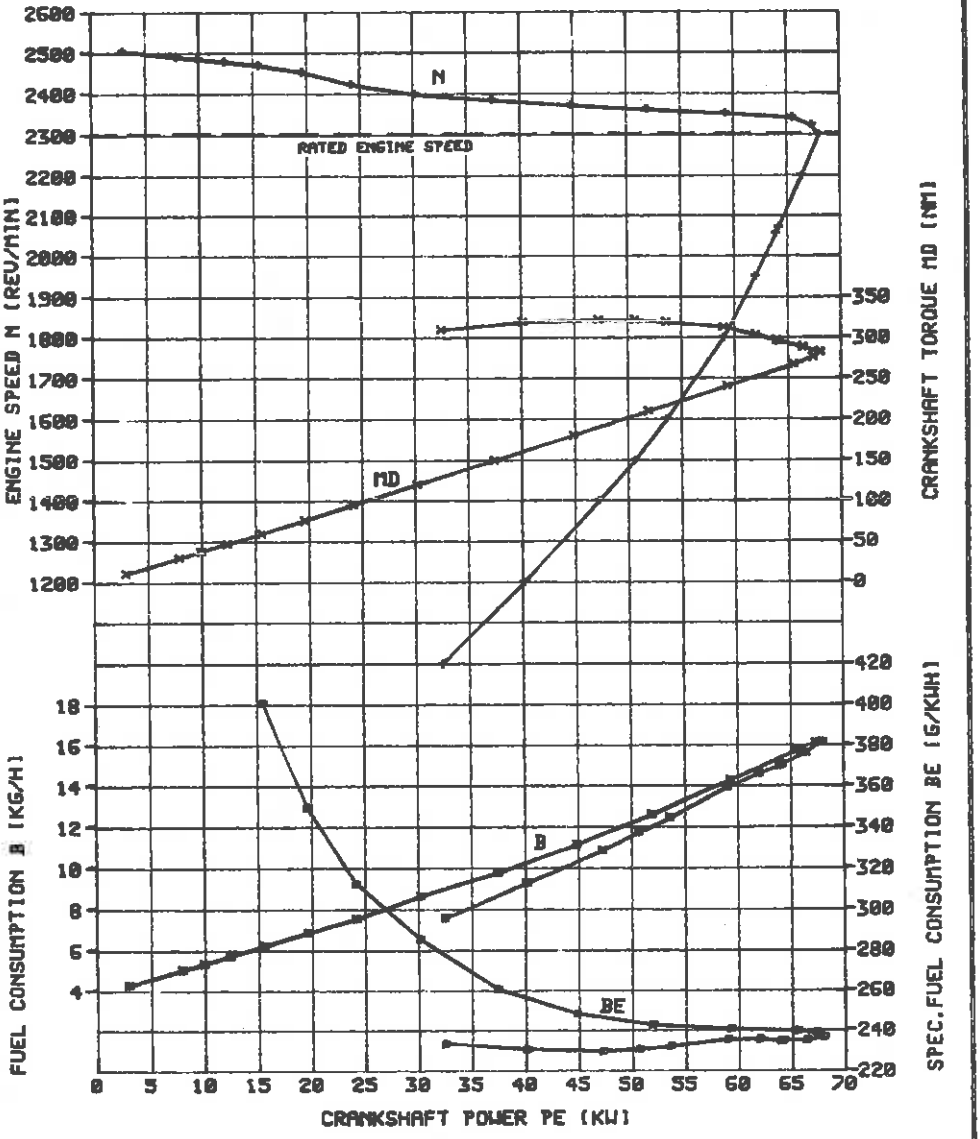
BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.:010/86	ENGINE-TEST	STEYR-DIESELTRACTOR TYP 377.05 (8110A) MOT.TYP STEYR MD 611.43



ENGINE SER.NR.: 611.43-5834	ATM.PRESSURE : 973 MBAR	FUEL TEMP.: 42 C	SIGNATURE
TRACTOR SER.NR.: 377.05-05815	AIR TEMPER. : 15 C	D.OF TESTS: 1985-11-05	
FUEL : 0.844/15 C	COOLANT TEMP.: 98 C	TEST NO. : 147/M130	
ENGINE OIL : RIMULA X 10W	OIL TEMP. : 105 C	CURVES NO.: 5	REITHER

13-JAN-86 DOK.:0100846-DL003;PROT33;PRC20-RU

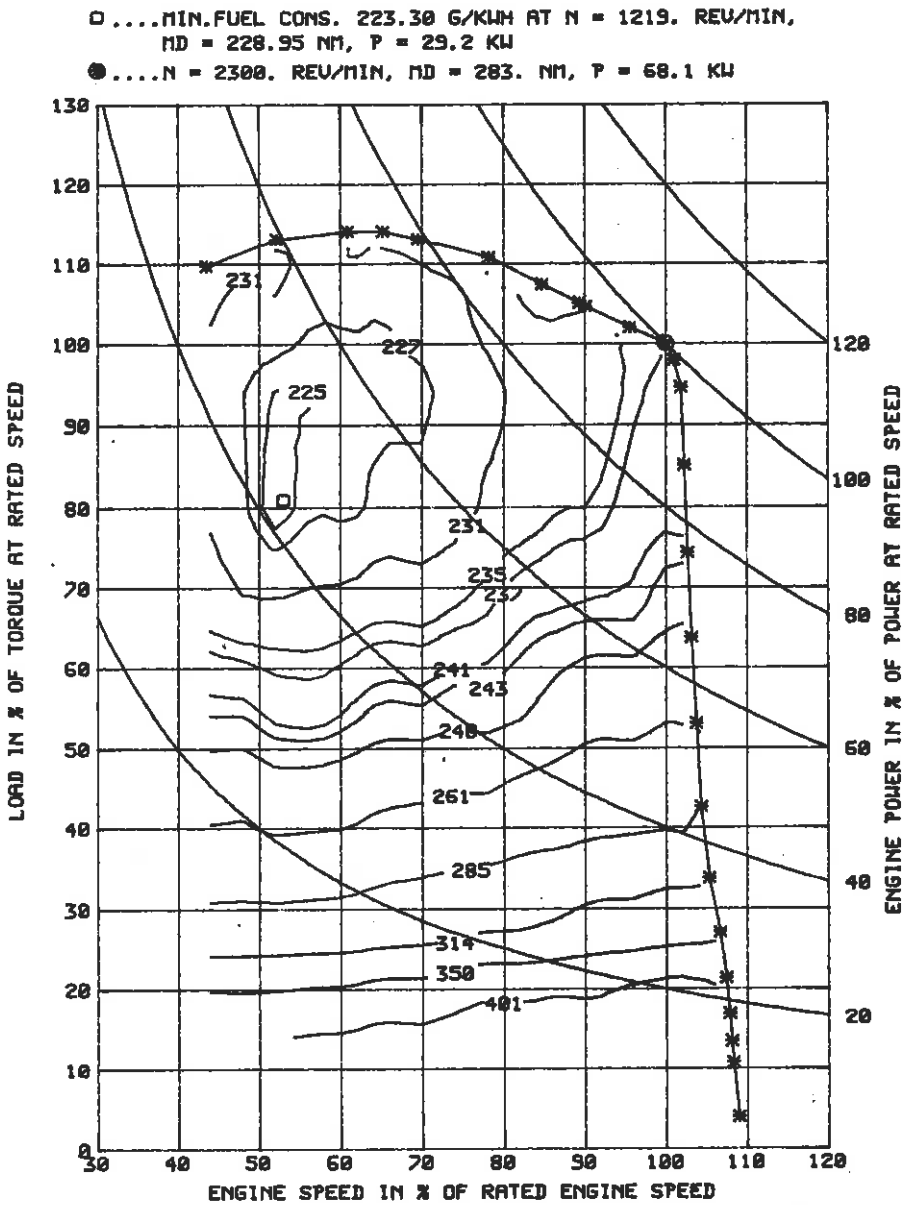
BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.:810/86	ENGINE-TEST	STEYR-DIESELTRACTOR TYP 377.05 (8110A) MOT.TYP STEYR WD 611.43



ENGINE SER.NR.: 611.43-8894	ATM.PRESSURE : 973 MBAR	FUEL TEMP.: 42 C	SIGNATURE
TRACTOR SER.NR.: 377.05-85815	AIR TEMPER. : 15 C	D.OF TESTS: 1985-11-05	
FUEL : B.844/15 C	COOLANT TEMP.: 90 C	TEST NO. : 147/11130	
ENGINE OIL : RINULA X 10W	OIL TEMP. : 106 C	CURVES NO.: 6	REITHER

12-JAN-86

BUNDESANSTALT FUER LANDTECHNIK WIESELBURG/ERLAUF, AUSTRIA PROT.NR.:010/86	ENGINE PERFORMANCE CHARACTERISTICS	STEYR-DIESELTRACTOR TYP 377.05 (B110A) MOT.TYP STEYR MD 611.43



ENGINE SER.NR.: 611.43-3894	ATM.PRESSURE : 973 MBAR	FUEL TEMP.: 42 C	SIGNATURE
TRACTOR SER.NR.: 377.05-05815	AIR TEMPER. : 15 C	D.OF TESTS: 1985-11-05	
FUEL : B.844/15 C	COOLANT TEMP.: 90 C	TEST NO. : 147/7138	
ENGINE OIL : RINULA X 10W	OIL TEMP. : 106 C	CURVES NO.: 7	REITNER

EDV-DIENST:TRAUTZ :PRÜFSTD

REDUCTION OF POWER DATA TO STANDARD CONDITIONS:

According to:

Austrian Standard Ö-Norm V - 5003
German Standard DIN 70020 Teil 6

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

P_{RED} = Reduced power to standard conditions
P_{OECD} = Power according to OECD
k = Reduction coefficient, resulting from the formula above

Main power take-off performance (page 25, 26 and 39, 40)
Engine performance (page 43)

Test conditions:

		540 p.t.o.	1000 p.t.o.	2300 engine
Intake air temperature (°C)	t	15	15	15
Atmospheric pressure	B	992 mbar	996 mbar	973 mbar
Resulting reduction coefficient	k	1,0124	1,0084	1,0322

	P_{OECD}	P_{RED}
Maximum power 540 rev/min p.t.o.	60,75 kW (82,62 mHP)	61,50 kW (83,64 mHP)
Maximum power 1000 rev/min p.t.o.	60,20 kW (81,87 mHP)	60,71 kW (82,56 mHP)
Maximum power 2300 rev/min engine speed	68,08 kW (92,59 mHP)	70,27 kW (95,57 mHP)

REMARKS:

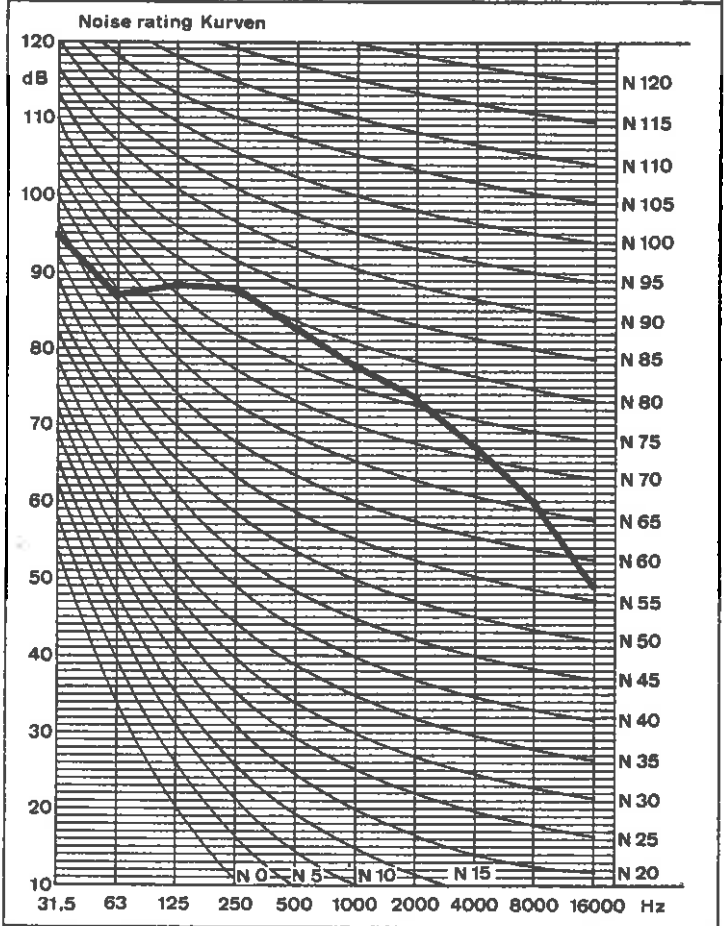
During the test-periode the cabine was restyled, so that there are 2 doors, the fuel tank is in the left side below, 120 l capacity, fuel feed by pump.
OECD-approval number: CSD 01061/1-4, 17.7.1986, Wieselburg, dynamic test
Model: **STEYR 110.01**

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 driver's ear level	STEYR 377.05 (STEYR 8110 a)



Gear: L 5
Travelling speed: 7,15 km/h