GEPRÜFT

PROT. Nr.

O.E.C.D. Report No.: 1522 Full Code

Bundesanstalt für Landtechnik

A-3250 Wieselburg, Austria

Dieseltractor STEYR 9100.25

40 km/h version

Trade name:

STEYR 9170 (4 WD)



Date of approval: 29.8.1994

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	6
Power take-off	10
Power lift	11
Swinging drawbar	14
Trailer hitch	14
Holed drawbar	15
Steering	15
Brakes	16
Wheels	17
Protective structure	17
Driver's seat	17
Miscellaneous	18
Lighting	18
TEST CONDITIONS	19
TEST RESULTS	22
Compulsory test	22
Main power take-off performance - 1000 rev/min	22
Hydraulic power and lifting force	26
Drawbar performance	30
Turning area and turning circle	34
Location of centre of gravity	34
Braking	34
Measurement of external noise level	36
Repairs	37
Remarks	37

Tractor manufacturer's name and address:	Steyr Landmaschinentechnik GmbH. A-4300 St. Valentin, Austria
Location of tractor assembly:	St. Valentin
Submitted for test by:	Manufacturer
Selected for test by:	Manufacturer by agreement with BLT Wieselburg
Place of running-in:	St. Valentin
Duration of running-in:	100 hours
Location of test:	Wieselburg, Austria

SPECIFICATIONS OF TRACTOR

TRACTOR:

Make:	STEYR
Trade name:	STEYR 9170 (4 WD)
Type:	9100.25
Model:	40 km/h version
Number of driving wheels:	4
Serial no.:	9100.25 - 01028
1st serial no.:	9100.25 - 01007

ENGINE:

Make:	Steyr
Model:	WD 620.81
Type:	4 stroke diesel engine with direct injection and exhaust turbo super-charger
Serial no.:	620.81 - C 1600

Cylinder:

Number/disposition:	6, vertical in line
Bore/stroke:	108/120 mm

Capacity:	6596 cm^3
Compression ratio:	16,5 : 1
Arrangement of valves:	Overhead valves
Cylinder liners:	Wet liners

Supercharging:

Make:	SCHWITZER
Model:	S 2 B
Type:	Exhaust turbo supercharger
Pressure:	max. 1,0 bar

Fuel system:

Fuel feed system:	Fuel feed pump integrated in injection pump
Make, model and type of fuel filter:	CAV 2 FASL 5863 B 045
Capacity of fuel tank:	260 l (315 l with auxiliary fuel tank)
Make, model and type of injection pump:	BOSCH in line injection pump BOSCH PES 6 A 95 D 320 RS 2832
Serial no.:	26907 01635 18160 0400 876 402
Manufacturer's production setting of injection pump, flow rate and timing:	83 $\pm^2$ mm^3/stroke at pump speed of 1052 rev/min and full load 21 $\pm^1$ before TDC
Make, model and type of injectors:	STANADYNE HNS 781736 or NBS 770620
Injection pressure:	230 bar

Governor:

Make:	BOSCH (RVS 325-1200 A2C 2218R)
Type:	Variable speed governor, mechanically acting, incorporated in injection pump
Governed range of engine speed:	From 1000 to 2370 rev/min engine speed
Rated engine speed:	2200 rev/min

Air cleaner:

Location of air intake:	Inside the bonnet, above and in front of the radiator
Pre-cleaner:	Incorporated in main-cleaner
Main-cleaner:	
Make:	DONALDSON
Model:	FLB12-0297
Type:	Piclon combined filter, dry type with integrated cyclonic pre-cleaner with automatic dust-drain valve and changeable paper filter insert and additional safety cartridge
Location of air intake:	In front of radiator, inside the bonnet
Service intervals:	
Pre-cleaner:	Visual control, each 250 hours
Main-cleaner paper insert:	Cleaning interval: when control lamp indication is shown Changing interval: 1 year
Maintenance indication:	Electric lamp indication

Lubrication system:

Type of feed pump:	Forced oil circulation, by gear pump
Type of filter:	Cartrige
Type of oilcooler:	Cross flow cooler

Cooling system:

Type of coolant:	Water-frost protection mixture down to -20°C
Type of pump:	Centrifugal pump belt driven
Specification of fan:	Visco fan
Number of fan blades:	9
Fan diameter:	560 mm
Coolant capacity:	27 l

Type of temperature control:	Thermostat control and electrical coolant thermometer
Superpressure system:	0,5 bar

Starting system:

Make:	MAGNETI MARELLI
Model:	M 127
Type:	Solenoid engaged screw push starter motor
Starter motor power rating:	2,8 kW
Cold starting aid:	Electrically, glow plug in inlet manifold
Safety device:	Electrically starting block system by engaged clutch

Electrical system:

Voltage:	12 V, negative earth
Generator:	Make: VALEO Type: three phase type Power: 980 W 70 A 14 V
Battery:	2 with 12 V/100 Ah lead acid type Rating: 100 Ah at 20 hours rating

Exhaust system:

Make:	LUCHAIRE
Model:	111
Type:	Absorption-reflexion type
Location:	170 mm left of the median plane of engine, 2980 mm above ground

TRANSMISSION TO WHEELS:

Clutch: (travel alone)

Make:	VALEO
Type:	Dry double clutch with 2 plates
Number of plates:	2
Diameter of plates:	310 mm
Method of operation:	2 plates incorporated in the same clutch housing

Gear box:

Make:	MASSEY FERGUSON
Type:	Mechanically operated gear shift, power 4
Model:	as tested (40 km/h) 2 forward and 2 reverse group (FORWARD FAST, FORWARD SLOW, REVERSE FAST, REVERSE SLOW) combined with 4 gears and power 4 Total: 32 forward and 32 reverse speeds
Arrangement:	1 main-lever for the 4 speed gear (1 - 4) and FAST, SLOW and 2 switch-button for power 4 1 lever for forward and reverse group
Available options:	None

Rear axle and final drives:

Make:	MASSEY FERGUSON
Type:	Crown wheel and pinion and inboard epicyclic reduction
Differential lock:	Type: mechanical and hydraulically Method of engagement: electrical switch Method of disengagement: when brake pedal is depressed

Front axle and final drives:

Make:	GKN
Type:	Steering and driving axle, central type, integrated steering cylinder. Crown wheel and pinion and outboard epicyclic gear reduction
Differential lock:	Electro-hydraulically differential lock
Front wheel drive:	Electro-hydraulically engaged multi-plate clutch in oil bath, automatically activated when differential lock is engaged or when brakes are used

Total ratios and travelling speeds:

Gear no.	Group	Power 4	Number of engine revolutions for one revolution of driving wheel	Nominal travelling speed at rated engine speed to 2200 rev/min *) km/h
1	forward slow L	1	300,734	2,538
1		2	256,946	2,971
1		3	217,681	3,507
1		4	185,980	4,105
2		1	198,158	3,852
2		2	169,306	4,509
2		3	143,433	5,322
2		4	122,545	6,229
3		1	138,711	5,503
3		2	118,514	6,441
3		3	100,403	7,603
3		4	85,782	8,899
4		1	101,910	7,491
4		2	87,071	8,767
4		3	73,766	10,348
4		4	63,023	12,112
1	reverse R slow	1	306,999	2,487
1		2	262,299	2,910
1		3	222,216	3,435
1		4	189,855	4,021
2		1	202,286	3,774
2		2	172,833	4,417
2		3	146,422	5,213
2		4	125,098	6,102
3		1	141,600	5,391
3		2	120,983	6,310
3		3	102,495	7,448
3		4	87,569	8,717
4		1	104,033	7,338
4		2	88,885	8,588
4		3	75,303	10,137
4		4	64,336	11,865

will be continued

*) Calculated with rear tyre dynamic radius index of 905 mm (ISO 4251/1 - 1984)
test tyre equipment: rear 20.8 R42
front 480/70R30

Gear no.	Group	Power 4	Number of engine revolutions for one revolution of driving wheel	Nominal travelling speed at rated engine speed to 2200 rev/min *) km/h
1	forward fast S	1	91,294	8,363
1		2	78,002	9,787
1		3	66,082	11,552
1		4	56,458	13,521
2		1	60,155	12,690
2		2	51,396	14,852
2		3	43,542	17,532
2		4	37,201	20,520
3		1	42,109	18,128
3		2	35,977	21,218
3		3	30,480	25,045
3		4	26,041	29,314
4		1	30,937	24,675
4		2	26,432	23,880
4		3	22,393	34,089
4		4	19,132	39,900
1	reverse R fast	1	93,196	8,191
1		2	79,627	9,587
1		3	67,459	11,316
1		4	57,634	13,245
2		1	61,408	12,431
2		2	52,467	14,549
2		3	44,449	17,174
2		4	37,976	20,101
3		1	42,986	17,758
3		2	36,727	20,786
3		3	31,115	24,534
3		4	26,583	28,716
4		1	31,581	24,171
4		2	26,983	23,290
4		3	22,860	33,393
4		4	19,531	39,085

*) Calculated with rear tyre dynamic radius index of 905 mm (ISO 4251/1 - 1984)
test tyre equipment: rear 20.8 R42
front 480/70R30

Number of revolutions of front wheels for one revolution of rear wheels: 1,336

POWER TAKE-OFF:

Main power take-off:

Type:	Independent and (optional) proportional to ground speed p.t.o.
Method of engagement:	Electrical switch operated, hydraulically engaged with wet multi plate clutch
Number of shafts:	1
Method of changing power take-off shaft speeds:	By changing of shaft ends

Power take-off proportional to engine speed:

540 and 1000 rev/min

Location:	At rear of tractor
Diameter of power take-off shaft end:	34,9 mm
Number of splines:	6, in conformity with ISO R 500 - 1979, type I and 21, in conformity with ISO R 500 - 1979, type III
Height above ground:	830 mm with tyre dynamic radius index of 905 mm
Distance from the median plane of the tractor:	0 mm
Distance behind rear wheel axis:	550 mm/500 mm
P.t.o. speed at rated engine speed:	596 rev/min resp. 1052 rev/min
Engine speed at standard power take-off speeds:	1993 rev/min resp. 2090 rev/min
Ratio of rotation speeds (engine speed/ p.t.o.speed):	3,69 resp. 2,09
Power restriction and max. torque:	None
Direction of rotation (viewed from behind tractor):	Clockwise

Power take-off proportional to ground speed:	None

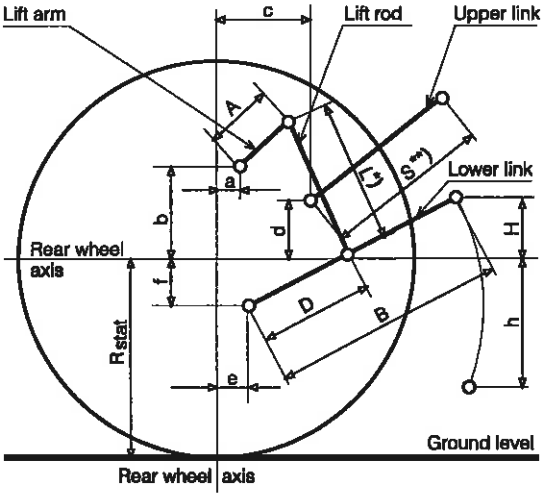
POWER LIFT:

In the rear:

Make:	MASSEY FERGUSON
Type:	Electronic power lift adjustment, draught adjustment (with lower link) or position control responsible variable mixed adjustment of position and draught with sensor
Type of hydraulic system:	Open center type
Type and number of cylinder:	2 single acting type, 89 mm diameter
Type of linkage lock for transport:	Hydraulically by throttle valve
Relief valve pressure setting:	18,8 MPa (188 bar)
Opening pressure of cylinder safety valve:	20,0 MPa (200 bar)
Lift pump type:	Gear type pump
Transmission between pump and engine:	Mechanical
Type and number of filter:	One filter cartridge
Site of oil reservoir:	Transmission housing
Type, number and location of tapping points:	2 on power lift housing
Maximum volume of oil available to external cylinders:	34 l

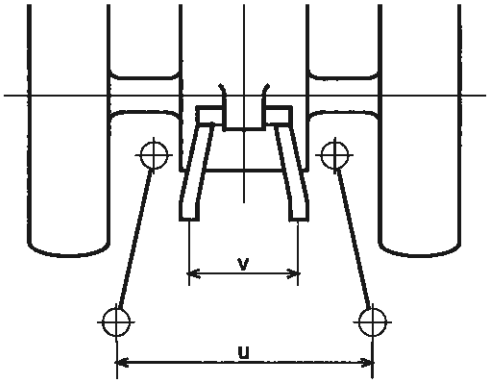
Three-point-linkage:

Category adapter: ~~I/II~~ II/III; in conformity with ISO 730/1-1977



*) Left lift rod adjustable from 685 mm to 840 mm length by thread; right lift rod adjustable from 685 mm to 840 mm by thread.

**) Upper link length adjustable from 740 mm to 830 mm.



Dimensions of linkage geometry:

			Dimension of range mm	Settings used in test mm
Length of lift arms:		(A)	362	362
Length of lower links:		(B)	975	975
Distance of lift arm pivot points from rear wheel axis:	horizontally	(a)	185,8	185,8
	vertically	(b)	431,8	431,8
Horizontal distance between the lower link points:		(u)	511	511
Horizontal distance between the 2 lift arm end points:		(v)	610	610
Length of upper link:		(S)	740 - 830	800
Distance of upper link pivot point from rear wheel axis:	horizontally	(c)	428	428
	vertically	(d)	121/179/237	237
Distance of lower link pivot point from rear wheel axis:	horizontally	(e)	70	70
	vertically	(f)	300	300

Height of lower link hitch points relative to the rear wheel axis (515 mm above ground)**):

		Min. lift rod length		During test		Max. lift rod length	
Length of lift arms	(A) mm	362		362		362	
Linkage distance of lift rod *)	(D) mm	600	548	600	548	600	548
Length of lift rods	(L) mm	685		840	840	840	
Lowest position *)	(h) mm	280	325	580	640	580	640
Highest position *)	(H) mm	250	265	10	5	10	5

*) Max.Mech/min.mech. advantage

Height above ground of lower hitch points when locked in transport position*): Any height within lift range

**) With dynamic radius index 905 mm (ISO 4251/1 - 1984)

SWINGING DRAWBAR:

Type:	Fork type
Height above ground:	574 mm with 905 mm dynamic radius index
Type of adjustment:	2 positions (with bolts)
Distance of hitch point from rear wheel axis, horizontally:	775 mm
Distance of hitch point from power take-off shaft end, vertically:	256 mm
horizontally:	350 mm (540 rev/min) - 400 mm (1000 rev/min)
Lateral adjustment, right and left hand:	173 mm
Distance of pivot point from rear wheel axis, horizontally:	90 mm
Diameter of drawbar pin hole:	30 mm
Maximum vertical permissible load:	11,7 kN

TRAILER HITCH:

Type:	Fork type
Hole diameter:	30,0 mm
Height above ground:	630/680/750/805/855/900/950/1000/1045 mm
Distance of hitch point from rear wheel axis, horizontally:	693 mm
Distance of hitch point from power take-off shaft end, vertically:	-200/-150/-80/-25/25/70/120/170/215 mm
horizontally:	195 mm
Maximum vertical permissible load:	24,5 kN

Towing hitch:

Type:	Fork type
Hole diameter:	33 mm
Height above ground:	990 mm
Distance from front axle:	900 mm

HOLED DRAWBAR:	Category II - III
Length:	825 mm
Number of holes (with central hole):	7
Distance between holes:	115 mm
Hole diameter:	33 mm
Thickness/width of the drawbar:	30/80 mm
Height above gound min.:	265 mm
max.:	1170 mm
Horizontal distance to power take-off shaft end (rear):	660 mm (540 rev/min) 710 mm (1000 rev/min)

STEERING:

Make:	DANFOSS
Model:	DANFOSS OSPC 200 LS
Type:	Hydrostatic steering
Method of operation:	Steering wheel acting on front wheels
Pump:	88 l/min at rated engine speed
Rams:	Incorporated in front axle, acting piston area 31,6 cm^2, stroke 2 x 139 mm
Working pressure:	15,7 - 16,2 MPa (157 - 162 bar)

BRAKES:

Service brake:

Make:	Rear axle: MASSEY FERGUSON and GIRLING
Model:	Rear axle: oil-immersed
Type:	Rear axle: single disc brake hydraulically actuated
Method of operation:	Pedal operated, hydraulically transmission
Trailer braking take-off:	Optional: Pressure air system Storage pressure: 0,74 MPa (7,4 bar) Storage volume: 20 l Working pressure: 0,74 MPa (7,4 bar) two line system 0,56 MPa (5,6 bar) one line system Optional: Hydraulic trailer brake; BOSCH Hydraulically actuated valve to regulate oil flow and pressure to the trailer brakes proportional and progressive trailer/tractor braking effort is achieved by linking their services together via a sensive valve. Operated automatically with pedals Maximum pressure: 130 - 150 bar Maximum flow: 32 l/min

Parking brake:

Type:	Mechanically acting multi disc brake in oil bath
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: 2925 mm

Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1857	1957	wheels turned around
Rear	1900	2006	

PROTECTIVE STRUCTURE:

Make: MASSEY FERGUSON

Model: 3000 D

Type: Cab

Manufacturer's name and address: Massey Ferguson

Protective device: Welded and screwed profile steel tube construction

OECD-approval no.: CSS 077/12

DRIVER'S SEAT:

Make: GRAMMER

Model: LS 95 H 1/90

Type of suspension: Air spring suspension, with battery driven air compressor, automatically adjusting to driver's weight, horizontal suspension

Type of damping: Hydraulically damping

Range of adjustment,
longitudinal: 150 mm
vertical: 60 mm

MISCELLANEOUS:

Additional seat:

Location: On left side of driver's seat

Number of places: 1

LIGHTING:

	*) Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Head lights	1290	150 x 90	255
Side lights	1955	108 x 33	860
Rear lights Brake lights	1880	100 x 45	890
Direction indicators front	1985	108 x 33	860
Direction indicators rear	1880	170 x 45	1065
Reflectors	1615 800	140 x 30 100 x 50	975 660

*) Measured with tyre dynamic radius index at rear 905 mm and 670 mm at front (ISO 4251/1 - 1984)

TEST CONDITIONS

Overall dimensions:

	Length	Width *)	Height at top of	
			exhaust silencer	protective structure
	mm	mm	mm	
Ballasted	5460	2465	2980	2980
Unballasted	5115	2395	2980	2980

*) Measured on the outside edges of the rear wheels

Ground clearance:
(unballasted tractor)

Clearance limiting part: 515 mm under the front axle
525 mm under the trailer hitch mounting console

Tractor mass: With tanks full and cab

		Without driver	With driver
		kg	kg
Unballasted	Front	2755	2770
	Rear	3830	3890
	Total	6585	6660
Ballasted	Front	3420	3435
	Rear	5200	5260
	Total	8620	8695

Ballast:

	Number of weights	Mass total kg	Water kg
Front	13	495	-
Rear	2 x (3 + 1)	510	1030
Optional	-	-	-

Tyres and track width specifications:

Tyres:

	Front	Rear
Dimensions	480/70 R 30	20,8 R 42
Ply rating	141 A8	155 A8
Type	radial carcass	radial carcass
Max. load (tyre manufacturer's)	25,75 kN resp. 38,60 kN with 10 km/h speed limit	38,75 kN resp. 58,10 kN with 10 km/h speed limit
Max. load (tractor manufacturer's)	45 kN	70 kN
Inflation pressure (tyre manufacturer's)	1,6 bar	1,6 bar
Dynamic radius index	670 mm	905 mm
Chosen track width	1855 mm	1900 mm

Oil and lubrication:

Capacity and change interval:

	Capacity (dm^3)	Oil change (h)	Filter change (h)
Engine	21,0	250	250
Gear box and rear axle	82,5	1000	500
Front axle	11,0	1000	-
Rear axle	-	-	-
Final drive front	2 x 1,8	1000	-
Final drive rear	2 x 3,6	1000	-
Hydraulic system	common with gear box	-	-
Steering	common with gear box	-	-

Specifications:

	Recommended:	Used during test:
Engine oil:		
Type:	One range viscosity oil or multigrade viscosity oil	as recommended
Viscosity:	SAE 30 summer SAE 20 W-20 winter	
Classification:	API CD/MIL-L-2104 C	
Transmission oils:		
Type:	STUO or UTTO	as recommended
Viscosity:	10 W 30	
Classification:	CD GL4/GL4	
Hydraulic fluid:	Same as transmission oil	
Steering oil:	Same as transmission oil	
Brake fluid:	Same as transmission oil	
Grease:		
Type:	Lithium soap basis	
Classification:	NLG I2	
Number of lubrication points:	12	
Fuel:		
Type:	ELAN diesel fuel In conformity with national standard according to DIN 51601	
Density at 15°C:	0,840 g/cm³	

TEST RESULTS

COMPULSORY TEST:

Main power take-off performance:
Date and location of tests: 2.2.1994, Wieselburg, Austria
Type of dynamometer: SCHENCK eddy-current brake W 780

Main test on: ISO R 500 - 1979, type I (DIN 9611) - **1000 rev/min**

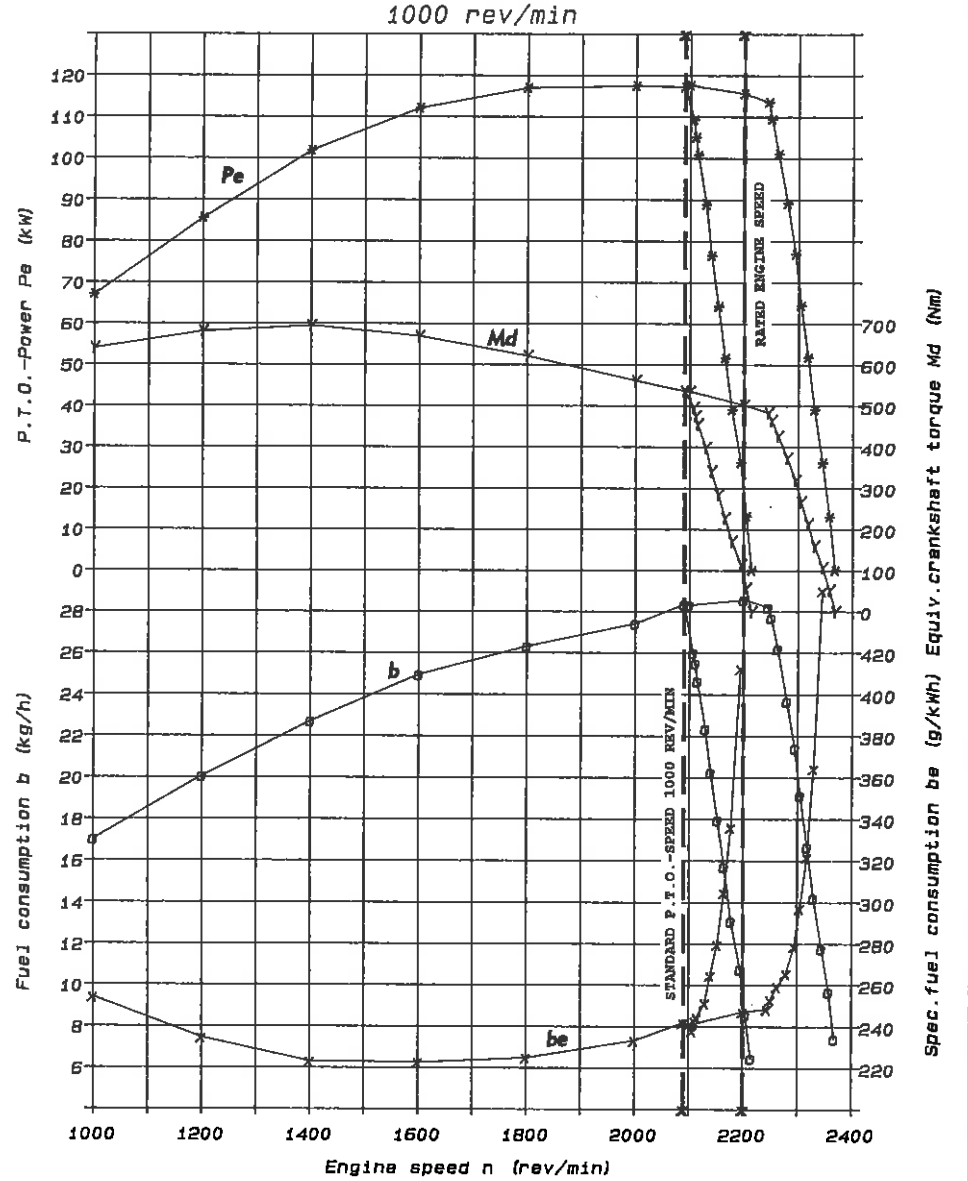
Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
MAXIMUM POWER					
Maximum power - 2 hours test					
117,6	2100	1005	28,32 33,72	241,0	3,49
Power at rated engine speed					
115,5	2200	1052	28,58 34,02	247,5	3,40
Standard power take-off speed					
117,2	2090	1000	28,36 33,76	242,0	3,47
PART LOADS					
(i) The torque corresponding to maximum power at rated engine speed					
115,5	2200	1052	28,58 34,02	247,5	3,40
(ii) 85 % of torque obtained in (i)					
101,0	2263	1083	26,21 31,20	259,5	3,24
(iii) 75 % of torque defined in (ii)					
76,9	2295	1098	21,44 25,32	279,0	3,04
(iv) 50 % of torque defined in (ii)					
51,8	2318	1109	16,67 19,85	322,0	2,61
(v) 25 % of torque defined in (ii)					
26,1	2345	1122	11,77 14,02	450,5	1,86
(vi) unloaded					
0	2368	1133	7,43 8,84	-	-

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
PART LOADS AT STANDARD POWER TAKE-OFF SPEED					
(i) The torque corresponding to maximum power available					
117,2	2090	1000	28,36 33,76	242,0	3,47
(ii) 85 % of torque obtained at maximum power					
100,8	2115	1012	24,65 29,34	244,5	3,44
(iii) 75 % of torque defined in (ii)					
76,5	2140	1024	20,26 24,12	265,0	3,17
(iv) 50 % of torque defined in (ii)					
51,6	2165	1036	15,72 18,72	305,0	2,76
(v) 25 % of torque defined in (ii)					
26,1	2195	1050	10,79 12,84	412,5	2,03
(vi) unloaded					
0	2215	1060	2,48 7,72	-	-

No load maximum engine speed: 2368 rev/min
Equivalent crankshaft torque
at maximum power: 501,4 Nm at rated engine speed
Maximum equivalent crankshaft torque: 694,4 Nm at 1400 rev/min of engine

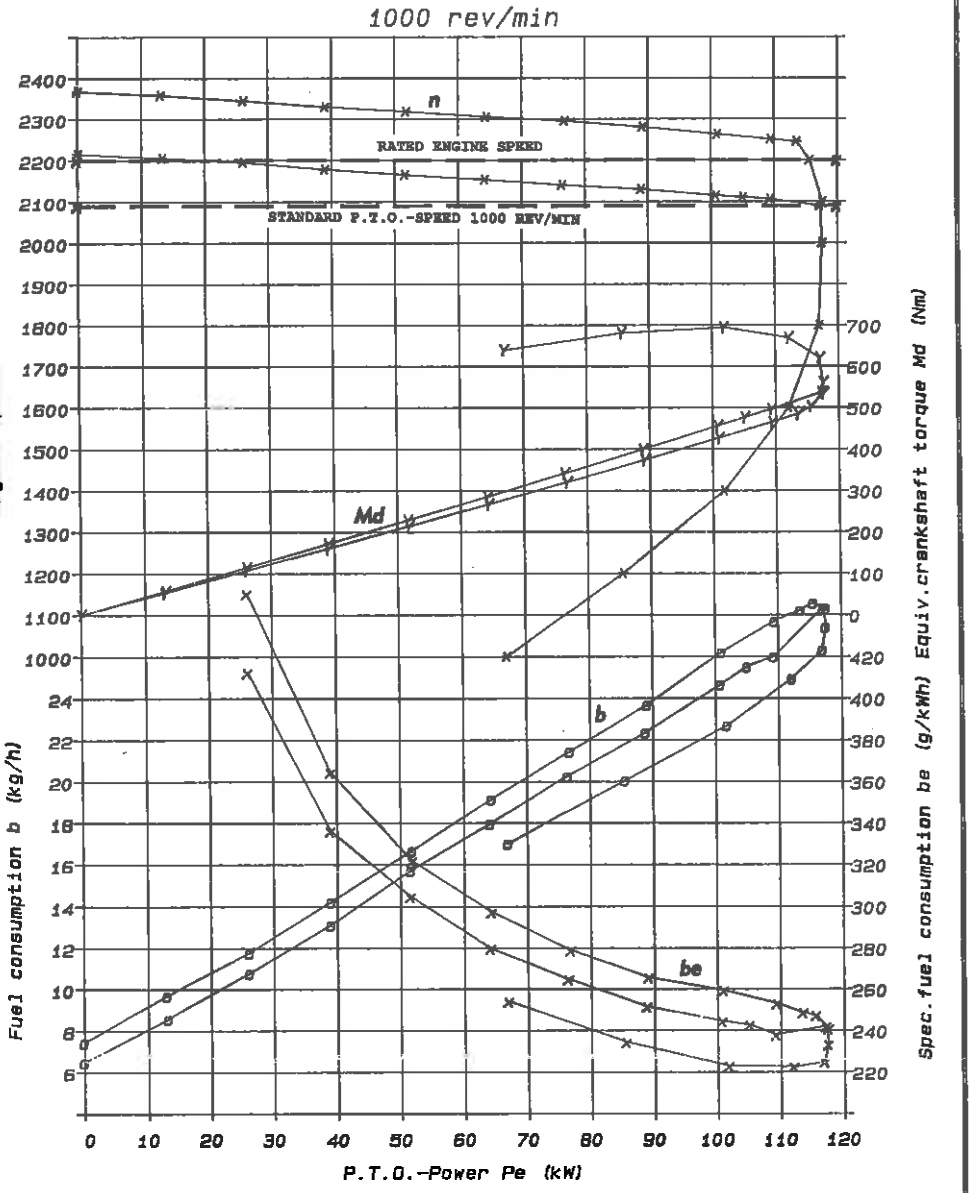
Mean atmospheric conditions	temperature:	17°C
	pressure:	993 mbar
	rel. humidity:	60 %
Maximum temperatures	coolant:	95°C
	engine oil:	114°C
	fuel:	34°C
	engine air intake:	20°C

Bundesanstalt für Landtechnik Wieselburg/Erlauf, Austria Prot.Nr.:	P.T.O.-test	Steyr-Dieseltractor Typ 9100.25 (9170) (4WD) Mot.Typ Steyr WD 620.81



engine ser.nr. : 620.81-C 1600	atm. pressure: 993 mbar	fuel temp. :34 C	signature
tractor ser.nr.: 9100.25-01028	air temper. : 17 C	d.of tests :1994-02-02	
fuel : 0.84/15 C	coolant temp.: 95 C	test no. :	
engine oil :	oil temp. : 114 C	curves no. : 1	Haider/Schaufler

Bundesanstalt für Landtechnik eselburg/Erlauf, Austria rot.Nr.:	P.T.O.-test	Steyr-Dieseltractor Typ 9100.25 (9170) (4WD) Mot.Typ Steyr WD 620.81



gine ser.nr. : 620.81-C 1600	atm. pressure: 993 mbar	fuel temp. :34 C	signature
actor ser.nr.: 9100.25-01028	air temper. : 17 C	d.of tests :1994-02-02	
el : 0.84/15 C	coolant temp.: 95 C	test no. :	
gine oil :	oil temp. : 114 C	curves no. : 2	Haider/Scheufler

HYDRAULIC POWER AND LIFTING FORCE:

Date of tests: 17.2.1994

Hydraulic power test:

Sustained pressure with relief valve open: 19,0 MPa (190 bar)

Pump delivery rate at minimum pressure (at rated engine speed): 52,8 l/min

	Flow rate	Pressure	Power
	l/min	MPa	kW
Flow rate corresponding to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting and corresponding hydraulic power	47,2	17,1	13,5
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	45,5	18,0	13,7

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: -

Closing pressure of the unloading valve: -

Remarks:

Flow rate corresponding to a hydraulic pressure equivalent up to 80 % (14,8 MPa) of the actual relief valve pressure setting is equal to pump delivery rate at minimum pressure (at rated engine speed).

By reasons of the characteristic of the hydraulic spool valves about 20 % control flow above 14,8 MPa are normal.

Power lift test:

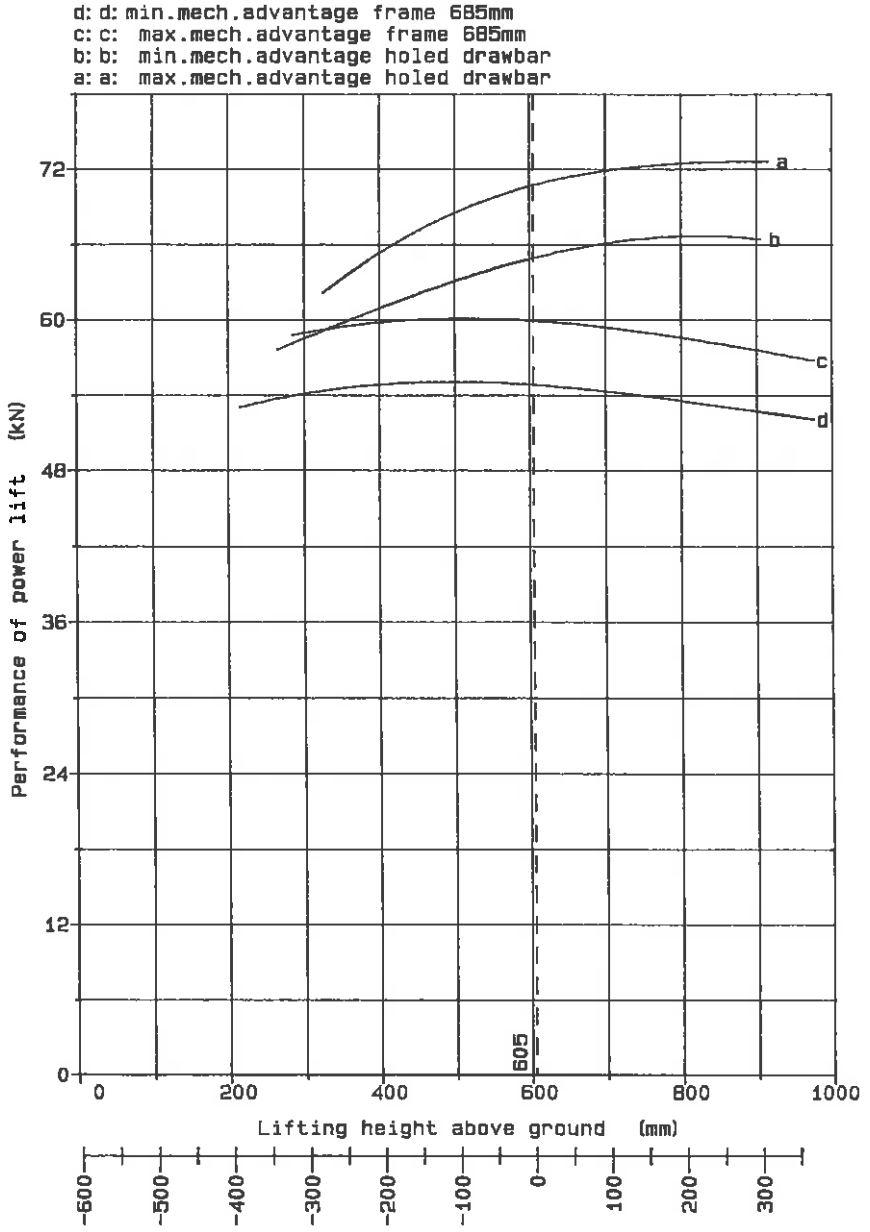
	at the hitch point	on the frame
Height of lower hitch points above ground in down position *)	325/265 mm	325/265 mm
Vertical movement *)	590/645 mm	695/760 mm
Maximum corrected force exerted through full range *)	62,1/57,7 kN	56,8/52,1 kN
Corresponding pressure of hydraulic fluid	16,7 MPa (167 bar)	16,7 MPa (167 bar)
Moment about rear wheel axis *)	74,5/69,2 kNm	102,2/93,8 kNm
Maximum tilt angle of mast from vertical	-	from -4° to 0° and to 8°

*) Max.mech/min.mech. advantage

Linkage settings for test: See table and figure in specifications

Lifting heights relative to the horizontal plane including the lower link pivot points															
mm		-390	-340	-320	-280	-200	-150	-100	0	50	100	150	200	305	365
Lifting forces (the values measured are corrected to correspond to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting or to maximum power delivered by the hydraulic system, which is lower)															
Corresponding pressure: 16,7 MPa (167 bar)															
at the hitch point kN	max.mech. advantage				62,1	65,6	67,3	68,7	70,7	71,4	71,9	72,3	72,5	72,7	
	min.mech. advantage		57,7	58,2	59,1	61,1	62,2	63,2	65,0	65,6	66,2	66,5	66,7	66,4	
at the frame kN (685 mm mast height)	max.mech. advantage			58,8	59,2	59,9	60,1	60,1	59,9	59,7	59,4	59,0	58,6	57,5	56,8
	min.mech. advantage	53,1	53,8	54,0	54,4	54,9	55,1	55,1	54,8	54,6	54,3	53,9	53,5	52,6	52,1

Performance of power lift:



Height relative to the horizontal plane including the lower link pivot points (dyn. radius index 905 mm)

Drawbar performance:

Date of test: 3.3. und 24.3.1994,
21.4. und 25.4.1994

Type of track: Concrete

Height of drawbar above ground: unballasted 630 mm, ballasted 630 mm

Tyre inflation pressure: front: unballasted 90 kPa, ballasted 110 kPa
rear: unballasted 90 kPa, ballasted 110 kPa

Tyre sizes: front: 480/70 R 30, 141 A 8; rear: 20.8 R 42, 155 A 8

Gear	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmosph. conditions		
								Fuel	Coolant	Engine oil	Temperature	Rel.humidity	Pressure
	kW	kN	km/h	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
(i) Maximum power in tested gears (unballasted tractor)													
1 L 1	39,80	64,05	2,23	2264	15,0	-	-	37	81	104	9	57	99,8
1 L 2	48,05	64,30	2,66	2256	15,0	-	-	40	83	104	9	57	99,8
1 L 3	52,77	63,81	2,95	2245	15,0	-	-	36	83	104	9	57	99,8
2 L 1	59,71	64,20	3 35	2242	15,0	472,5	1,78	39	84	101	9	57	99,8
1 L 4	63,32	63,80	3,56	2232	15,0	445,5	1,88	35	83	103	9	57	99,8
2 L 2	68,32	63,63	3,85	2230	15,0	413,0	2,03	32	82	93	9	57	99,8
2 L 3	83,19	62,89	4,75	2200	12,8	343,5	2,45	34	83	102	9	57	99,8
3 L 1	89,12	62,30	5,15	2195	12,2	320,5	2,62	35	82	106	9	60	99,8
2 L 4	94,18	61,96	5,47	2200	11,5	303,5	2,77	35	82	107	9	57	99,8

Gear	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmosph. conditions		
								Fuel	Coolant	Engine oil	Temperature	Rel.humidity	Pressure
	kW	kN	km/h	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
(i) Maximum power in tested gears (unballasted tractor)													
3 L 2	97,83	59,82	5,87	2200	8,8	292,0	2,88	35	85	103	8	60	99,8
3 L 3	100,40	50,31	7,16	2200	5,5	284,5	2,95	29	84	99	8	61	99,8
4 L 1	99,52	50,91	7,02	2200	6,2	287,0	2,93	30	81	100	8	61	99,8
1 S 1	99,98	45,07	8,00	2200	4,8	286,0	2,94	31	84	103	9	61	99,8
4 L 2	99,72	42,92	8,35	2200	4,7	286,5	2,93	30	81	100	8	61	99,8
3 L 4	97,79	41,32	8,50	2200	4,4	292,0	2,87	30	81	100	8	61	99,8
1 S 2	98,64	37,56	9,43	2200	3,6	289,5	2,90	31	85	105	9	60	99,8
4 L 3	98,57	35,57	9,97	2200	3,7	290,0	2,90	31	85	101	12	57	99,8
1 S 3	97,48	31,39	11,20	2200	3,4	293,0	2,87	31	85	101	12	57	99,8
2 S 1	87,23	25,52	12,31	2200	2,8	327,5	2,56	33	83	106	9	60	99,8
1 S 4	84,40	23,05	13,18	2200	2,6	338,5	2,48	35	86	107	10	60	99,8

Gear	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmosph. conditions		
								Fuel	Coolant	Engine oil	Temperature	Rel.humidity	Pressure
	kW	kN	km/h	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
(ii) Maximum power in tested gears (ballasted tractor)													
1 L 1	50,10	79,60	2,23	2296	15,0	-	-	43	88	100	17	50	99,0
1 L 2	57,75	79,04	2,63	2279	15,0	-	-	43	88	105	19	50	99,0
1 L 3	68,07	79,33	3,06	2264	15,0	-	-	43	88	108	19	50	99,0
2 L 1	72,10	78,08	3,31	2252	15,0	384,0	2,19	44	88	110	20	50	99,0
1 L 4	78,40	78,74	3,56	2240	15,0	360,0	2,33	47	86	111	19	50	99,0
2 L 2	82,96	76,74	3,89	2230	15,0	340,0	2,47	43	91	112	20	50	99,0
2 L 3	94,54	69,25	4,90	2200	7,6	302,5	2,78	43	91	112	20	50	99,0
3 L 1	95,57	67,13	5,11	2200	6,9	299,0	2,81	48	92	113	19	50	99,0
2 L 4	94,90	58,00	5,87	2200	5,3	301,0	2,79	48	92	113	19	50	99,0
3 L 2	95,73	56,2	6,08	2200	5,2	298,5	2,81	47	92	113	19	50	99,0
3 L 3	93,97	46,37	7,27	2200	4,1	304,0	2,76	47	92	113	19	50	99,0
4 L 1	95,50	47,87	7,16	2200	4,0	299,5	2,81	47	92	114	20	50	99,0

Gear	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmosph. conditions		
								Fuel	Coolant	Engine oil	Temperature	Rel.humidity	Pressure
	kW	kN	km/h	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
(ii) Maximum power in tested gears (ballasted tractor)													
1 S 1	96,20	43,05	8,03	2200	3,8	297,0	2,83	44	92	112	20	50	99,0
4 L 2	94,68	40,33	8,42	2200	3,6	302,0	2,78	50	93	115	20	50	99,0
3 L 4	92,34	38,86	8,53	2200	3,9	309,5	2,71	47	92	114	20	50	99,0
1 S 2	93,78	35,61	9,45	2200	3,2	304,5	2,76	51	92	112	20	50	99,0
4 L 3	89,73	32,36	10,00	2200	2,9	318,5	2,64	50	93	115	20	50	99,0
1 S 3	90,06	28,92	11,20	2200	3,0	317,5	2,65	51	92	112	20	50	99,0
2 S 1	89,54	26,19	12,28	2200	2,9	319,0	2,63	52	92	113	21	50	99,0
1 S 4	87,48	23,78	13,21	2200	2,1	326,5	2,57	52	92	113	21	50	99,0
(iii) Five-hour-test at 75 % of pull at maximum power													
1 S 1	74,71	32,24	8,35	2264	3,0	351,0	2,39	46	90	113	21	59	98,3
(iv) Five-hour-test at pull corresponding to 15 % wheelslip in test (ii)													
2 L 2	84,89	78,60	3,89	2240	15,0	332,5	2,53	59	90	115	22	58	98,5

Oil consumption during 10 hours duration of tests (iii) and (iv): 0 g/h

TURNING AREA AND TURNING CIRCLE:

Wheel equipment: front: 480/70 R30; 141 A 8
rear: 20.8 R42; 155 A 8

Track of wheel: front: 1880 mm
rear: 1900 mm

Results *)	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning area	5,41/5,35	5,45/5,42	7,70/7,41	7,85/7,59
Radius of turning circle	5,17/5,11	5,21/5,18	7,46/7,17	7,61/7,35

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

LOCATION OF CENTRE OF GRAVITY:

	mm
Height above ground	1138
Distance forward from the vertical plane containing the axis of the rear wheels	1217
Distance from the median plane of the tractor, left-side	1

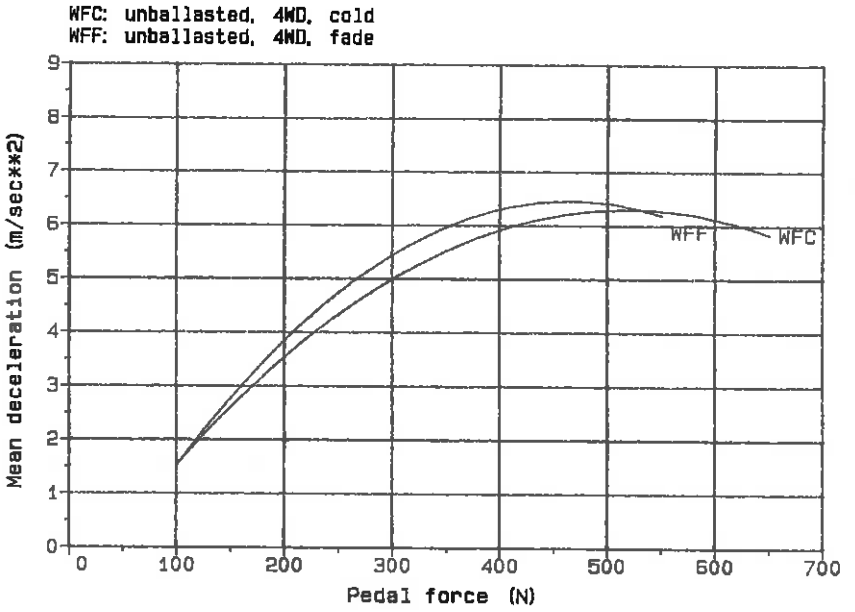
BRAKING:

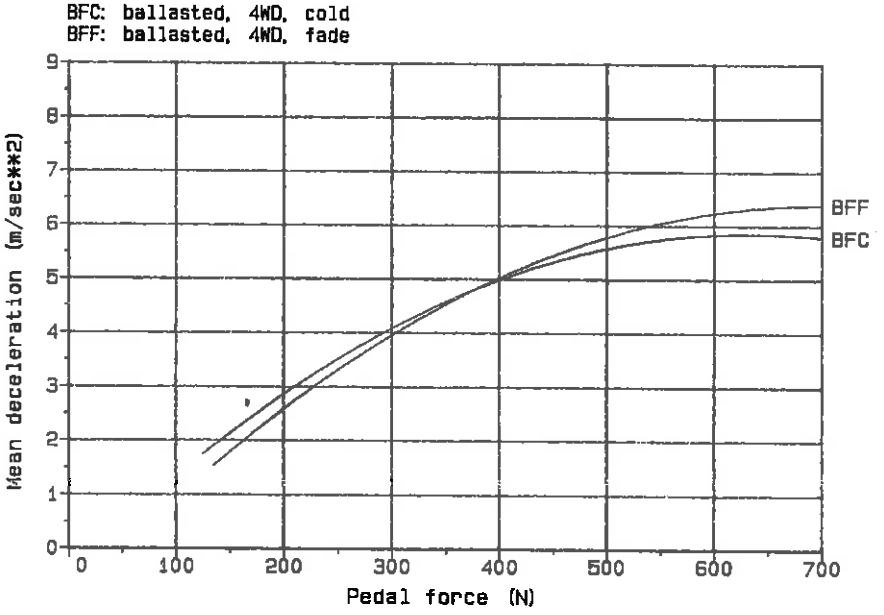
Date of tests: 1.3. und 14.3.1994
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)

Tractor mass during brake tests (with driver):

	Front kg	Rear kg	Total kg
Ballasted	3435	5260	8695
Unballasted	2770	3890	6660

Service brake:





Speed before application of brakes: 41,58 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 % slop	
Braking device control force	up	down
	250/250 N	250/250 N

Four-wheel-drive switched: ON/OFF

MEASUREMENT OF EXTERNAL NOISE LEVEL:

Date of test: 1.3.1994

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

Type of track: Concrete

Gear number: 4 S 4

Travelling speed before acceleration: 31,0 km/h

Sound level: 87,7 dB(A)

REPAIRS: None

REMARKS: None

The head of department:

(Dipl.Ing. H. Lampel)
Oberrat

Test and report carried out by:

(Ing. Hermann Schaufler)

Bundesanstalt für Landtechnik Wieselburg a. d. Erlauf

The director of testing station:

(Dipl.Ing.Dr. J. Schrottmaier)
Hofrat