O.E.C.D. Report No.: 1581 Full Code

Bundesanstalt für Landtechnik

A-3250 Wieselburg, Austria

Dieseltractor STEYR 9055.45

40 km/h version

Trade name:

STEYR M 9094a (4 WD)



Date of approval: 14.II.1995

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 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 M 9094 a
Type:	9055.45
Model:	40 km/h version
Number of driving wheels:	4
Serial no.:	9055.45-01001
1st serial no.:	9055.45-01447

ENGINE:

Make:	STEYR
Model:	WD 401.85
Type:	4 stroke diesel engine with direct injection and exhaust turbo super-charger
Serial no.:	401.85-001594

Cylinder:

Number/disposition:	4, vertical in line
Bore/stroke:	105/120 mm

Capacity:	4156 cm^3
Compression ratio:	16,0 ± 0,5 : 1
Arrangement of valves:	Overhead valves
Cylinder liners:	Wet liners

Supercharging:

Make:	KKK
Model:	K 24 134AB 2277
Type:	Exhaust turbo supercharger
Pressure:	max. 110 kPa

Fuel system:

Fuel feed system:	Fuel feed pump in combination with the injection pump
Make, model and type of fuel filter:	KNECHT filter 7394471 with water trap
Capacity of fuel tank:	100 l (optional 2^{nd} tank with 50 l)
Make, model and type of injection pump:	BOSCH in line injection pump PES 4 A90D320/3RS 2743
Serial no.:	BOSCH 0 400 864 071 STEYR 27 10 30 77 46 11 706
Manufacturer's production setting of injection pump, flow rate and timing:	67 mm^3 ±3% per stroke at pump speed of 1150 rev/min and full load $21^{\pm 1°}$ before TDC
Make, model and type of injectors:	BOSCH DLLA 152 S 1180
Opening pressure:	$22,0^{+0,6}$ MPa (220^{+8} bar)

Governor:

Make:	BOSCH
Type:	Variable speed governor, mechanically acting, incorporated in injection pump
Governed range of engine speed:	From $760^{\pm 30}$ to 2470^{-30} rev/min engine speed
Rated engine speed:	2300 rev/min

Air cleaner:

Location of air intake:	Inside the bonnet, in front of the radiator
Pre-cleaner:	Incorporated in main-cleaner
Main-cleaner:	
Make:	KNECHT
Model:	LVPO 6080 S/5
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:	Inside the bonnet, in front of the radiator
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, -65 mbar for indication

Lubrication system:

Type of feed pump:	Forced oil circulation, by gear pump
Type of filter:	STEYR 409 07 0036
Type of oilcooler:	BEHR or MODINE

Cooling system:

Type of coolant:	Water-frost protection mixture down to -20°C
Type of pump:	Centrifugal pump belt driven
Specification of fan:	Puller, 1 driving belt
Number of fan blades:	4 (optional 7, visco-fan)
Fan diameter:	460 mm

Coolant capacity:	12,0 l
Type of temperature control:	Thermostat control and electrical coolant thermometer Optional: in combination with automatic engine stop when temperature is more than 113°C
Superpressure system:	0,7 bar

Starting system:

Make:	BOSCH
Model:	JF-12 V 2,7 kW
Type:	Solenoid engaged screw push starter motor
Starter motor power rating:	2,7 kW
Cold starting aid:	Electrically, glow plug in inlet manifold
Safety device:	Electrically starting block system by engaged clutch and engaged p.t.o.

Electrical system:

Voltage:	12 V, negative earth
Generator:	Make: BOSCH Type: three phase alternator type Power: 910 W/65 A - 14 V Optional: 1330 W / 96 A - 14 V or 1680 W /120 A - 14 V
Battery:	1 with 12 V/100 Ah lead acid type Rating: 100 Ah at 20 hours rating

Exhaust system:

Make:	ROTH Technik Austria
Model:	47.05.9417.0.00
Type:	Absorption-reflexion type
Location:	170 mm left of the median plane of engine, 1640 mm above centre of crankshaft (end of bended exhaust tube)

TRANSMISSION TO WHEELS:

Clutch:

Make:	FICHTEL & SACHS
Model:	DUT 310-310/295
Type:	Dry double clutch (travel and p.t.o.)
Number of plates:	2
Diameter of plates:	330/295 mm
Method of operation:	2 plates incorporated in the same clutch housing are operated independent for p.t.o. and gear box

Gear box:

Make:	STEYR
Model:	TW 557
Type:	Mechanically acting gear box
Model:	as tested (40 km/h) 2 forward and 1 reverse group (FORWARD FAST, FORWARD NORMAL, REVERSE) synchronized, combined with 4 speed change gear (synchronized) and reduction gear (ROAD, NEUTRAL, FIELD) Total: 16 forward and 8 reverse speeds
Arrangement:	1 lever for group gear (S, L, R) 1 lever for the 4 speed gear (1 - 4) 1 lever for the reduction gear (ROAD, NEUTRAL, FIELD)
Available options:	a) Synchronized 4 speed change gear with group gear (2 forward and 1 reverse), crawler group (rabbit, tortoise) and reduction gear (ROAD, NEUTRAL, FIELD), 30 or 40 km/h Total: 32 forward and 16 reverse speeds b) Synchronized 4 speed change gear with group gear (1 forward and 1 reverse), torque amplifier group and reduction gear (ROAD, NEUTRAL, FIELD), 30 or 40 km/h Total: 16 forward and 16 reverse speeds

Rear axle and final drives:

Make:	STEYR
Model:	TW 557
Type:	Central axle, pinion and bevel gear, reduction by planetary gear in final drives
Differential lock:	Type: electro-hydraulically acting from half axle to differential housing, operated by a tumbler-switch, self-disengaging when not locked Available option: differential-lock-management, differential-lock closes automatically when option is selected and speed is lower then 14 km/h and disengages when speed is more than 14 km/h (no repeated automatically locking when speed drops unter 14 km/h, renewed activation necessary)

Front axle and final drives:

Make:	CARRARO
Model:	20.16
Type:	Steering and driving axle, central type, integrated steering cylinder Driving shaft, pinion and bevel gear differential, half shafts, universal joints, planetary gears in wheel hubs
Differential lock:	Automatically locking differential (multi-plate-clutch-type) Optional: switchable differential lock (clutch coupling) with lock-management (function as on rear axle)
Front wheel drive:	Electro-hydraulically engaged, multi-plate-clutch in oil bath, operated by a tumbler-switch, direct central joint-less driving shaft to front axle

Total ratios and travelling speeds:

Gear no.	Group	Number of engine revolutions for one revolution of driving wheels		Nominal travelling speed at rated engine speed to 2300 rev/min *) km/h	
-	-	field L	road S	field L	road S
1	forward	305,19	93,53	2,18	7,14
2	normal	172,02	52,71	3,88	12,67
3	L	114,68	35,14	5,82	19,00
4		71,14	21,80	9,39	30,63
1	forward	250,43	76,75	2,67	8,70
2	fast	141,15	43,26	4,73	15,43
3	S	94,10	28,84	7,09	23,15
4		58,38	17,89	11,44	37,32
1		309,26	94,77	2,16	7,04
2	reverse	174,31	53,42	3,83	12,50
3	R	116,21	35,61	5,75	18,75
4		72,09	22,09	9,26	30,22

*) Calculated with rear tyre dynamic radius index of 770 mm (ISO 4251/1 - 1992)
test tyre equipment: rear 18.4 R 34
front 14.9 R 24

Number of revolutions of front wheels for one revolution of rear wheels: 1,408/1,337 **)

**) Remark: Different ratio in view of tyre equipment

POWER TAKE-OFF:

Main power take-off:

Type: Independent and (optional) proportional to ground speed p.t.o.

Method of engagement: Hand lever operated, mechanically engaged dry disc clutch driven by the 2nd plate of main clutch

Optional: elektrohydr. operated by switch with outside additional switch on the rear mudguards

Number of shafts:	1
Method of changing power take-off shaft speeds:	Speed selection by hand lever and spur gears, no 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 - 1991, type I
Height above ground:	660 mm with tyre dynamic radius index of 770 mm
Distance from the median plane of the tractor:	0 mm
Distance behind rear wheel axis:	355,5 mm
P.t.o. speed at rated engine speed:	607 rev/min resp. 1080 rev/min
Engine speed at standard power take-off speeds:	2045 rev/min resp. 2130 rev/min
Ratio of rotation speeds (engine speed/ p.t.o.speed):	3,79 resp. 2,13
Power restriction and max. torque:	None
Direction of rotation (viewed from behind tractor):	Clockwise

Optional additional - 540E and 1000E rev/min:

P.t.o. speed at rated engine speed:	464 rev/min resp. 825 rev/min
Engine speed at economic standard p.t.o. speeds:	None resp. 1506 rev/min

Ratio of rotation speeds (engine speed/p.t.o. speed):	4,96 resp. 2,79
Front p.t.o.:	Optional, not on tested tractor
Location:	In front of tractor, direction forward, 825 mm above ground, 306 mm before front axle, in median plane, driven directly from the engine by a propellershaft, mechanical multi plate clutch and spur gear transmission.
Dimension of p.t.o. shaft end:	ISO R 500 - 1991, type I (34,9 mm, 6 splines)
P.t.o. speed at rated engine speed:	1073 rev/min
Ratio of rotation speed:	2,143
Power restriction and max. torque:	None
Direction of rotation (viewed from front of tractor):	Anticlockwise
Power take-off proportional to ground speed:	Optional
Speed of shaft:	The shifting position "540 - 1000" of the engine p.t.o.-shaft has no influence on the p.t.o.-shaft speed
Travelling distance for one revolution of p.t.o. shaft:	0,069 m (with tyre dynamic radius index of 770 mm)
Location:	At rear of tractor, same shaft end as p.t.o. proportional to engine speed
Number of p.t.o. shaft revolutions for one revolution of rear wheels:	70,29 rev
Direction of rotation with forward gear engaged (viewed from behind tractor):	Clockwise

Stationary mode (reduction gear in neutral position, tractor not driving):

Number of p.t.o. shaft revolutions at 2300 rev/min rated engine speed

Normal model, 40 km/h:

Group gear		L	S	R
rabbit	Gear no.: 1	530	646	523
	2	940	1145	927
	3	1410	1718	1391
	4	2272	2769	2243
tortoise	1	103	126	102
	2	183	223	180
	3	274	334	271
	4	442	539	436
Direction of rotation		clockwise	clockwise	anticlockwise
		viewed from behind tractor		

POWER LIFT:

In the rear:

Make: STEYR

Type:

Standard: Draught control with two-stage pull, adjustment and upper link sensing position control, floating position

Optional: Electronic power lift, adjustment - digital, draught adjustment (with lower link) or position control resp. variable mixed adjustment of position and draught with sensor, vibration-extinction, floating position, stroke limitation, sink-speed control

Type of hydraulic system: Open center type

Type and number of cylinder: Two single acting cylinder
210 mm stroke, 80 mm diameter

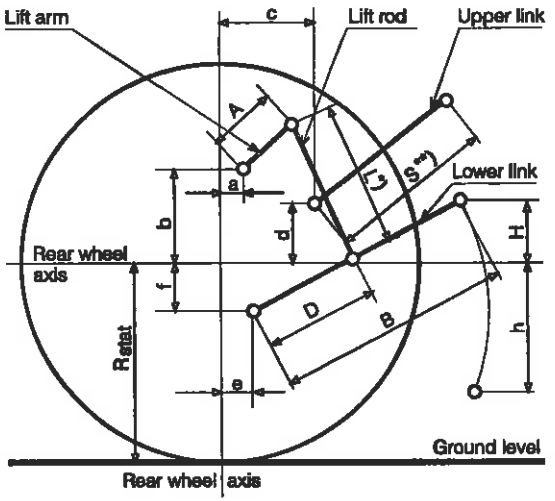
Type of linkage lock for transport: Hydraulically by throttle valve

Relief valve pressure setting: 17,5 MPa (175 bar)

Opening pressure of cylinder safety valve:	24,0 MPa (240 bar)
Lift pump type:	Gear type pump
Transmission between pump and engine:	Pump directly driven by engine by gear transmission
Type and number of filter:	One filter cartridge in suction line, connection at the flywheel housing left
Site of oil reservoir:	Hydraulic housing
Type, number and location of tapping points:	Up to 8 tapping points (4 oil circuits for single or double acting cylinders), 338 mm behind rear axle, 596/668 mm above rear axle, max. 144 mm left to 145 mm right of median plane In accordance to ISO/DIS 5675 - 1979
Maximum volume of oil available to external cylinders:	30 l
In the front:	Not on tested tractor
Make:	STEYR
Type:	GR I
Type of hydraulic system:	Open center type, independent lower links with quick coupling ends cat. II fastened to a lifting frame
Type and number of cylinder:	2 single acting cylinder 185 mm stroke, 70/30 mm bore
Type of linkage lock for transport:	Hydraulically by throttle valve

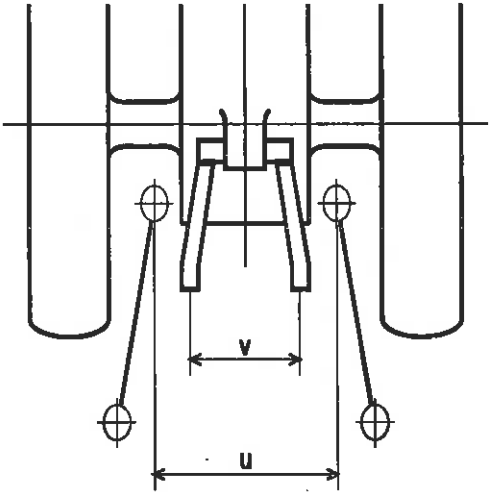
Three-point-linkage:

Category adapter: I/II; in conformity with ISO 730/1-1990



*) Left lift rod adjustable from 630 mm to 690 mm length by thread; right lift rod adjustable from 630 mm to 690 mm by thread.

**) Upper link length adjustable from 610 mm to 840 mm.



Dimensions of linkage geometry:

			Dimension of range mm	Settings used in test mm
Length of lift arms:		(A)	360	360
Length of lower links:		(B)	930	930
Distance of lift arm pivot points from rear wheel axis:	horizontally	(a)	115	115
	vertically	(b)	425	425
Horizontal distance between the lower link points:		(u)	450	450
Horizontal distance between the 2 lift arm end points:		(v)	578	578
Length of upper link:		(S)	610 - 840	755
Distance of upper link pivot point from rear wheel axis:	horizontally	(c)	320	320
	vertically	(d)	275	275
Distance of lower link pivot point from rear wheel axis:	horizontally	(e)	120	120
	vertically	(f)	200	200

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	360		
Linkage distance of lift rod (D) mm	495		
Length of lift rods (L) mm	630	650	690
Lowest position (h) mm	490	570	650
Highest position (H) mm	210	170	130

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

*) With dynamic radius index 770 mm (ISO 4251/1 - 1992)

TRAILER HITCH:

On tested tractor:

Type:	295.93.0003	
Hole diameter:	32,0 mm	
Height above ground:	919/850 mm (891/831 mm)	
Distance of hitch point from rear wheel axis, horizontally:	497 mm	
Distance of hitch point from power take-off shaft end, vertically:	259/199 mm (231/171 mm)	
horizontally:	142 mm	
Maximum vertical permissible load:	15 kN	

Optional:	Standard	Italian
Type:	278 + 1142 or 2145 278 + 1139 or 2146	1 + 23
Hole diameter/ bolt diamter:	32,5/31,5 mm or 31,8/31,5 mm	28,5/28 mm
Height above ground:	930/882/834/786/738/690/637/564/516 mm	
Distance of hitch point from rear wheel axis horizontally:	538 mm	534 mm
Distance of hitch point from power take-off shaft end, vertically:	270/222/174/126/78/30/-23/-96/-144 mm	
horizontally:	183 mm	179 mm
Maximum vertical permissible load:	15 kN	15 kN

HOLED DRAWBAR: Category II

Length:	825 mm
Number of holes (with central hole):	7

Distance between holes:	115 mm
Hole diameter:	33 mm
Thickness/width of the drawbar:	35/80 mm
Height above gound min.: max.:	 120 mm 1000 mm
Horizontal distance to power take-off shaft end (rear):	694,5 mm

STEERING:

Make:	Zahnradfabrik Friedrichshafen (ZF) or DANFOSS, Nordborg
Model:	ZF 8492 or DANFOSS OSPC 125 SR
Type:	Hydrostatic steering load sensing
Method of operation:	Steering wheel acting on front wheels
Pump:	34 l/min at nominal revolution of engine
Rams:	Incorporated in front axle, acting piston area 21 cm^2, stroke 212 mm
Working pressure:	12,0 MPa (120 bar)

BRAKES:

Service brake:

Make:	Rear axle: KNOTT Optional on front axle: KNOTT or CARRARO
Model:	Rear axle: 8,75" X 6" Optional on front axle: 4161 or 707-S4 HD
Type:	Rear axle: Multi disc brake in oil bath, 10 acting faces with 190 mm effective diameter each

Optional on front axle:
Graduated disc brake acting on front axle drive shaft
Piston area 18,1 cm² or full disc brake in oil bath acting on final drive

Method of operation:

Rear axle:
Pedal operated, hydraulically transmission
Optional on front axle: front axle drive shaft or axle shaft brake with hydraulic transmission

Trailer braking take-off:

Optional, hydraulic trailer brake or 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

Parking brake:

Type:

Mechanically acting on the same discs as service brake

Method of operation:

Hand lever with ratchet, mechanically transmission acting on separate linkage with service brake

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:

2477 mm

Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1691	1691	wheels turned around
Rear	1600	1704	

PROTECTIVE STRUCTURE:

Make:	STEYR
Model:	STEYR 130.01
Type:	Cab
Manufacturer's name and address:	Steyr Landmaschinen GmbH., A-4300 St. Valentin
Protective device:	Welded and screwed profile steel tube construction
OECD-approval no.:	CSD 1380/15/MOD 1/A

DRIVER'S SEAT:

Make:	GRAMMER
Model:	DS 85 H1/90
Type of suspension:	Mechanical, 2 coil springs
Type of damping:	Hydraulically damping
Range of adjustment, longitudinal:	150 mm
vertical:	100 mm
Optional:	
Make:	ISRINGHAUSEN
Model:	6800 KM/516
Type of suspension:	Pneumatical, with a rubber bladder
Type of damping:	Hydraulically damping
Range of adjustment; longitudinal:	160 mm
vertical:	145 mm
Optional:	
Make:	GRAMMER
Model:	MSG 95 A/20
Type of suspension:	Pneumatical, with a rubber bladder

Type of damping: Hydraulically damping

Range of adjustment;
longitudinal: 150 mm
vertical: 160 mm

MISCELLANEOUS:

Additional seat: STEYR

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	950	138 x 65	212
Side lights	1535	110 x 40	830
Rear lights	1685	136 x 90	762
Brake lights			
Direction indicators front	1575	110 x 40	830
Direction indicators rear	1750	136 x 38	762
Reflectors	1685 695	126 x 32 80 Ø	757 470

*) Measured with tyre dynamic radius index at rear 770 mm and 590 mm at front (ISO 4251/1 - 1992)

TEST CONDITIONS

Overall dimensions:

	Length	Width *)	Height at top of	
			exhaust silencer	protective structure
	mm	mm	mm	mm
Ballasted	4350	2200	2390	2550
Unballasted	4210	2200	2390	2550

*) Measured on the outside edges of the rear wheels

Ground clearance:
(unballasted tractor)

Clearance limiting part:
440 mm under the front axle
420 mm under four wheel transmission
405 mm under the trailer hitch mounting plate

Tractor mass: With tanks full

		Without driver	With driver
		kg	kg
Unballasted	Front	1490	1500
	Rear	2415	2480
	Total	3905	3980
Ballasted	Front	2090	2100
	Rear	3355	3420
	Total	5445	5520

Ballast:

	Number of weights	Mass total kg	Water kg
Front	13	490	-
Rear	2 x (2 + 1)	330	720
Optional	-	-	-

Tyres and track width specifications:

Tyres:

	Front	Rear
Dimensions	14.9 R 24	18.4 R 34
Ply rating	126 A8	144 A8
Type	radial carcass	radial carcass
Max. load (tyre manufacturer's)	1750 kp resp. 2550 kp with 10 km/h speed limit	2800 kp resp. 4200 kp with 10 km/h speed limit
Max. load (tractor manufacturer's)	3000 kp	4500 kp
Inflation pressure (tyre manufacturer's)	1,6 bar	1,6 bar
Dynamic radius index	590 mm	770 mm
Chosen track width	1691 mm	1700 mm

Oil and lubrication:

Capacity and change interval:

	Capacity (dm^3)	Oil change (h)	Filter change (h)
Engine	8,5	250	250
Gear box and rear axle	34,0	1000	1000
Front axle	5,0	1000	-
Rear axle	-	-	-
Final drive front	0,6 x 2	500	-
Final drive rear	-	1000	-
Hydraulic system	34,0	1000	1000
Steering	2,6	-	1000

Specifications:

	Recommended:	Used during test:
Engine oil:		
Type:	Single range viscosity oil	
Viscosity:	SAE 30 summer SAE 20 W-20 winter	
Classification:	API CD/MIL-L-2104 CD	As recommended
Transmission oils:		
Type:	Transmission oil	
Viscosity:	SAE 80 W	
Classification:	API GL 4, MIL-L-2105	As recommended
Hydraulic fluid:	Hydraulic oil ISO VG 46/ ISO VG 68	
Steering oil:		
Type:	Hydraulic oil or automatic transmission oil	
Classification:	ATF Dexron II D	As recommended
Brake fluid:		
Type:	-	
Classification:	SAE J 170 3e FMVSS 116 DOT 3	
Grease:		
Type:	Lithium soap basis	
Classification:	NLGI 2 (multigrade grease)	
Number of lubrication points:	15 (14)	
Fuel:		
Type:	ELAN diesel fuel In conformity with national standard according to ON EN590	
Density at 15°C:	0,840 g/cm³	

TEST RESULTS

COMPULSORY TEST:

Main power take-off performance:
Date and location of tests: 12.6.1995, Wieselburg, Austria
Type of dynamometer: SCHENCK eddy-current brake W 780

Main test on: ISO R 500 - 1991, 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 1/h	g/kWh	kWh/l
MAXIMUM POWER					
Maximum power - 2 hours test					
64,20	1800	845	15,02 17,84	234,0	3,59
Power at rated engine speed					
60,50	2300	1080	16,25 19,30	268,5	3,13
Standard power take-off speed					
61,40	2130	1000	15,62 18,55	254,5	3,31
PART LOADS					
(i) The torque corresponding to maximum power at rated engine speed					
60,50	2300	1080	16,25 19,30	268,5	3,13
(ii) 85 % of torque obtained in (i)					
52,40	2343	1100	14,38 17,10	274,5	3,06
(iii) 75 % of torque defined in (ii)					
39,70	2371	1113	11,71 13,91	294,5	2,85
(iv) 50 % of torque defined in (ii)					
26,70	2386	1120	9,27 11,00	347,0	2,43
(v) 25 % of torque defined in (ii)					
13,50	2409	1131	6,73 7,99	498,5	1,69
(vi) unloaded					
0	2439	1145	4,17 4,95	-	-

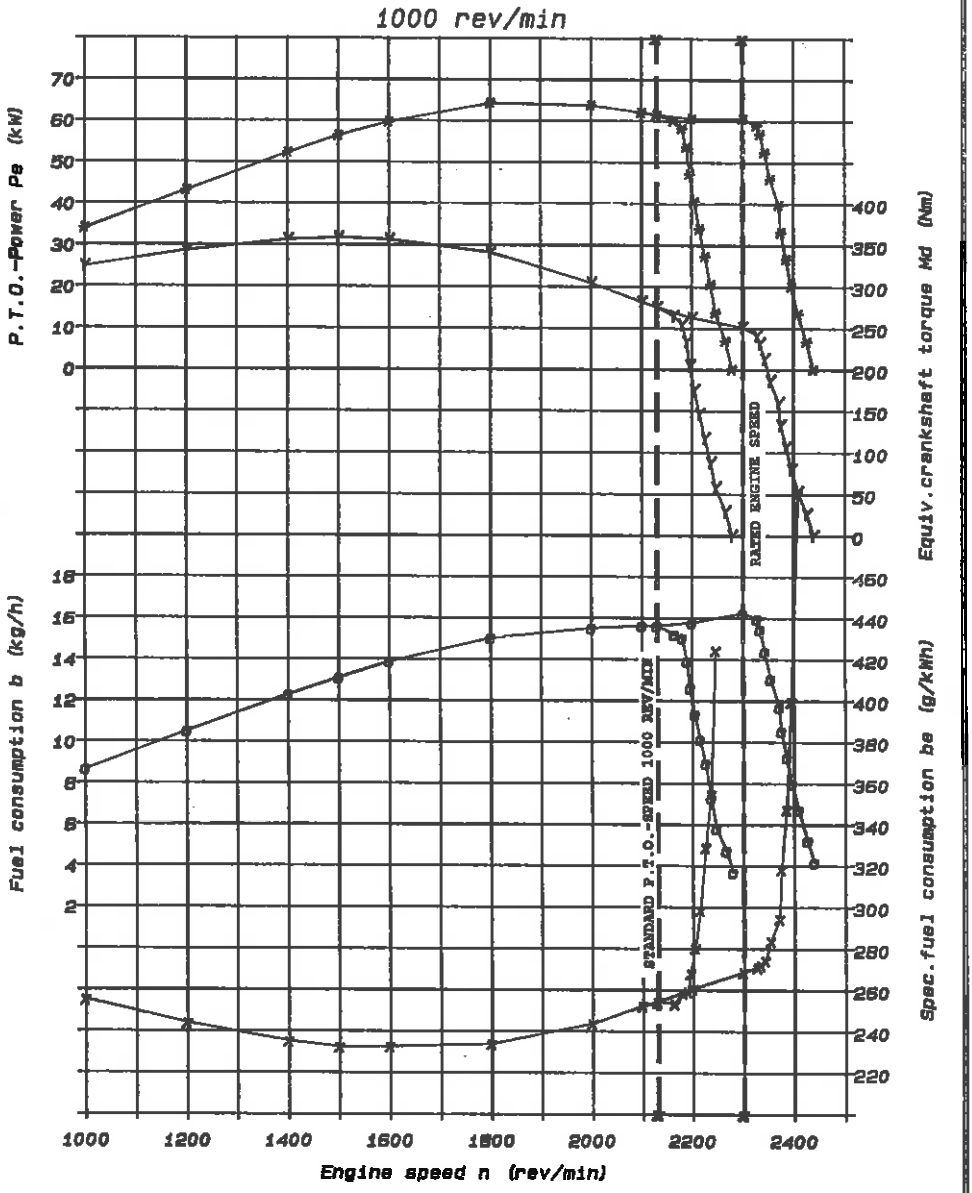
Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h 1/h	g/kWh	kWh/l
PART LOADS AT STANDARD POWER TAKE-OFF SPEED					
(i) The torque corresponding to maximum power available					
61,40	2130	1000	15,62 18,55	254,5	3,31
(ii) 85 % of torque obtained at maximum power					
53,70	2190	1028	13,88 16,48	259,0	3,26
(iii) 75 % of torque defined in (ii)					
40,50	2205	1035	11,32 13,44	280,0	3,01
(iv) 50 % of torque defined in (ii)					
27,30	2226	1045	8,95 10,63	328,5	2,57
(v) 25 % of torque defined in (ii)					
13,70	2247	1055	5,80 6,89	423,5	1,99
(vi) unloaded					
0	2279	1070	3,68 4,37	-	-

No load maximum engine speed: 2439 rev/min
Equivalent crankshaft torque
at maximum power: 251,2 Nm at rated engine speed
Maximum equivalent crankshaft torque: 358,4 Nm at 1500 rev/min of engine

Mean atmospheric conditions
temperature: 16°C
pressure: 983 mbar
rel. humidity: 60 %

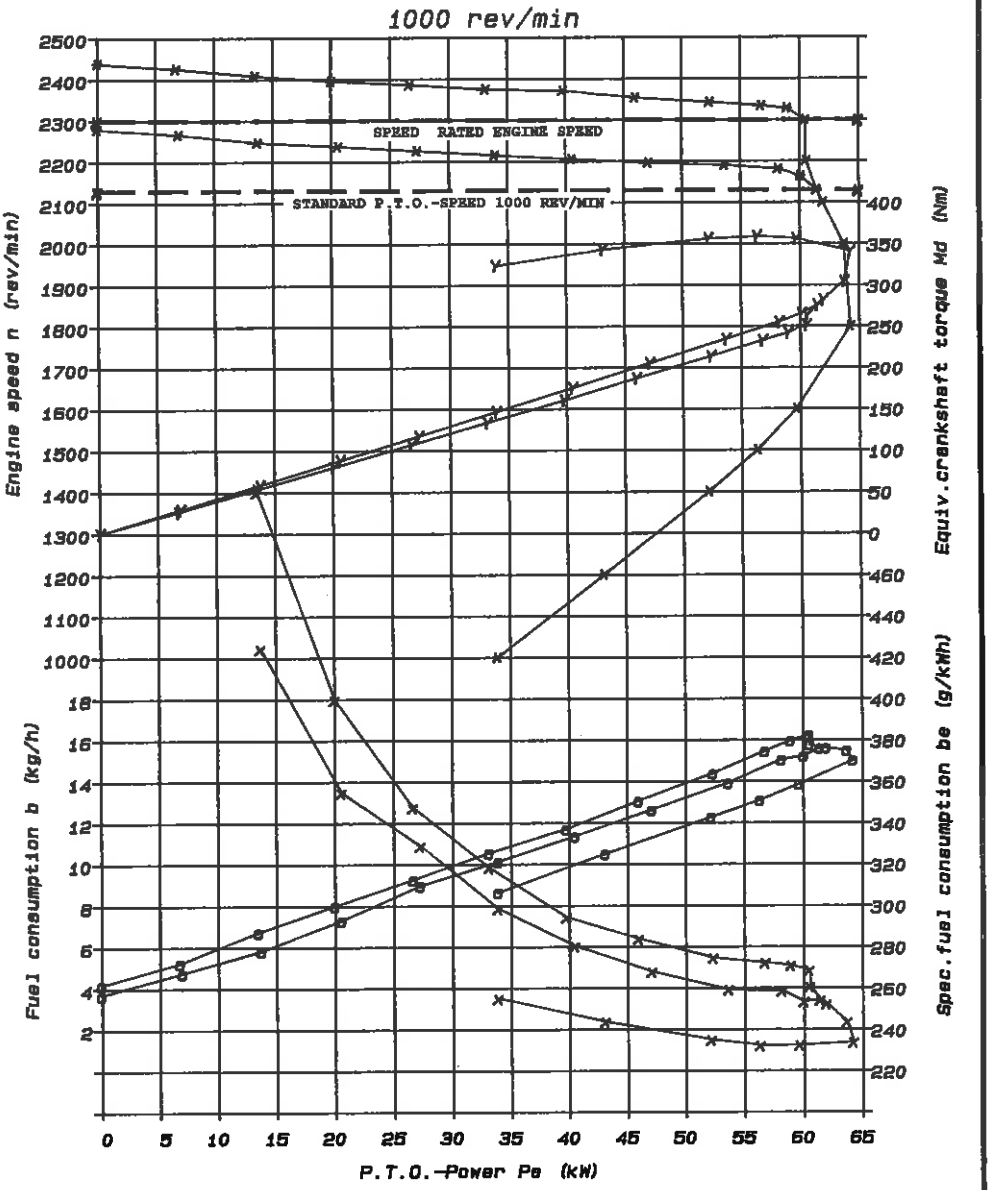
Maximum temperatures
coolant: 97°C
engine oil: 119°C
fuel: 30°C
engine air intake: 18°C

Bundesanstalt für Landtechnik Wieselburg/Erlauf, Austria Prot.Nr.:	P.T.O.-test	Steyr Dieseltractor Typ 9055.45 (M 9094a) Mot.Typ Steyr WD 401.85



Engine ser.nr. : 001594	atm. pressure: 983 mbar	fuel temp. :30 C	signature
Tractor ser.nr.: 9055.45-01001	air temper. : 16 C	d.of tests :1995-06-12	
Fuel : 0.84/15 C	coolant temp.: 97 C	test no. :	
Engine oil : 10W40	oil temp. : 119 C	curves no. : 1	Haider

Bundesanstalt für Landtechnik Wieselburg/Erlauf, Austria Prot.Nr.:	P.T.O.-test	Steyr Dieseltractor Typ 9055.45 (M 9094a) Mot.Typ Steyr WD 401.85



engine ser.nr. : 001594	atm. pressure: 983 mbar	fuel temp. : 30 C	signature
tractor ser.nr.: 9055.45-01001	air temper. : 16 C	d.of tests : 1995-08-12	
fuel : 0.84/15 C	coolant temp.: 97 C	test no. :	
engine oil : 10W40	oil temp. : 119 C	curves no. : 2	Haider

HYDRAULIC POWER AND LIFTING FORCE:

Date of tests: 9.8.1995

Hydraulic power test:

Sustained pressure with relief valve open: 18,0 MPa (180 bar)

Pump delivery rate at minimum pressure (at rated engine speed): 48,1 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	45,4	16,7	12,6
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	45,3	17,0	12,8

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)

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.

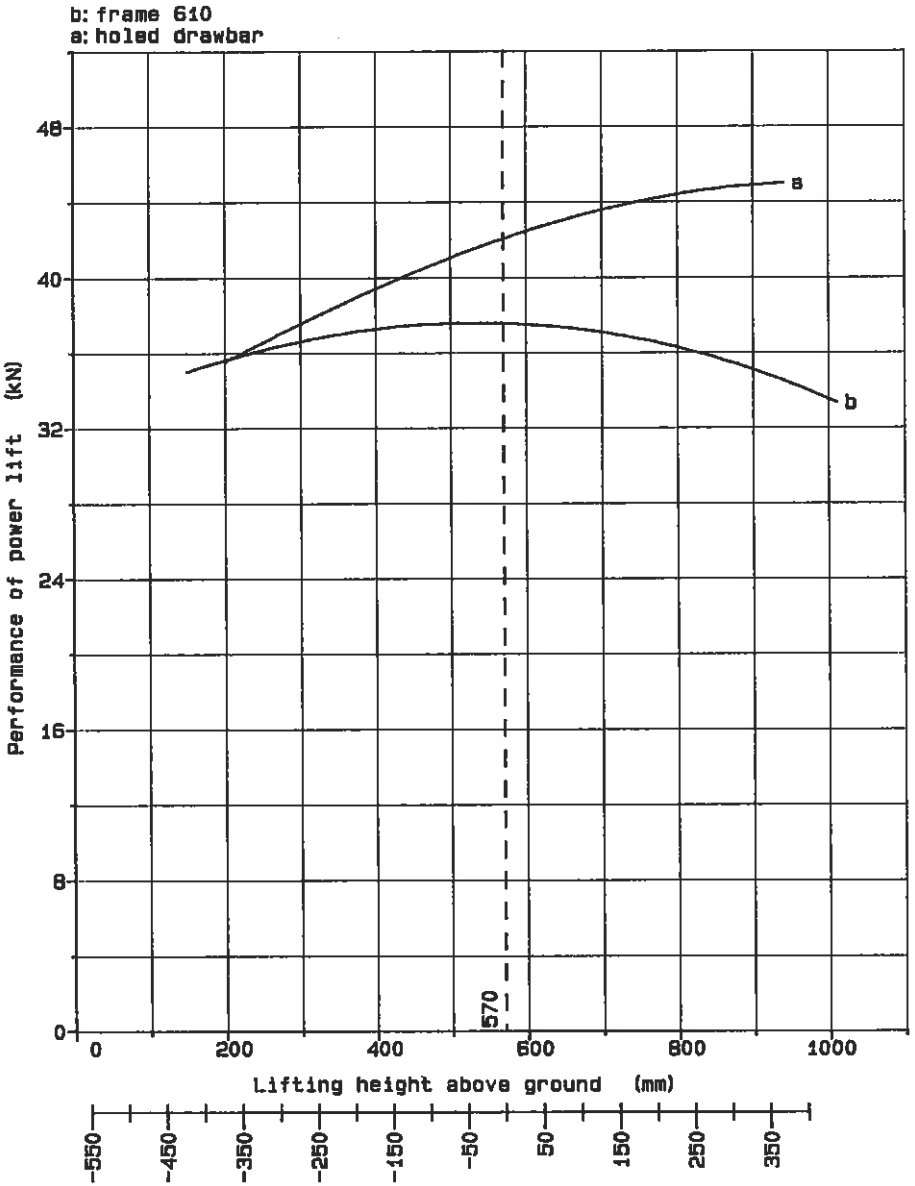
Power lift test:

	at the hitch point	on the frame
		610 mm mast height
Height of lower hitch points above ground in down position	200 mm	200 mm
Vertical movement	740 mm	860 mm
Maximum corrected force exerted through full range	36,0 kN	33,5 kN
Corresponding pressure of hydraulic fluid	16,7 MPa (167 bar)	16,7 MPa (167 bar)
Moment about rear wheel axis	37,8 kNm	55,6 kNm
Maximum tilt angle of mast from vertical	-	from -4° to 0° and to +8°

Linkage settings for test: See table and figure in specifications

Lifting heights relative to the horizontal plane including the lower link pivot points														
mm	-420	-370	-300	-200	-150	-100	0	+50	+100	+150	+200	+300	+370	+440
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		36,0	37,0	38,9	39,8	40,6	42,1	42,7	43,3	43,8	44,2	44,8	45,0	
at the frame kN (610 mm mast height)	35,0	35,6	36,4	37,1	37,4	37,5	37,6	37,5	37,3	37,0	36,6	35,5	34,5	33,3

Performance of power lift:



Height relative to the horizontal plane including the lower link pivot points (dyn. radius index 770 mm)

Drawbar performance:

Date of test: 12.7.1995, 20.7.1995

Type of track: Concrete

Height of drawbar above ground: unballasted 460 mm, ballasted 440 mm

Tyre inflation pressure: front: unballasted 100 kPa, ballasted 120 kPa
rear: unballasted 100 kPa, ballasted 120 kPa

Tyre sizes: front: 18.4 R 34; 144 A8 rear: 14.9 R 24; 126 A8

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)													
LL 1	20,26	35,55	2,05	2398	15,0	-	-	28	84	102	25	56	99,0
LS 1	24,22	36,16	2,41	2377	15,0	435,5	1,93	28	85	104	25	56	99,0
LL 2	33,85	36,40	3,35	2351	15,0	386,0	2,18	30	85	109	25	56	99,0
LS 2	44,47	36,16	4,43	2300	8,9	365,5	2,30	32	89	111	26	58	99,0
LL 3	47,79	31,03	5,54	2300	7,0	340,0	2,48	34	88	111	26	58	99,0
LS 3	50,50	26,58	6,84	2300	6,1	322,0	2,62	34	86	112	26	58	99,0
SL 1	50,75	26,43	6,91	2300	5,8	320,0	2,63	35	88	112	27	56	99,0
SS 1	50,53	21,32	8,53	2300	4,6	321,5	2,62	35	90	113	26	56	99,0
LL 4	49,12	19,34	9,14	2300	4,1	331,0	2,55	35	89	113	26	56	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)													
LL 1	27,63	52,14	1,91	2366	15,0	-	-	30	85	103	28	54	100
LS 1	33,91	52,17	2,34	2353	15,0	385,0	2,19	30	87	105	27	54	100
LL 2	49,72	51,26	3,49	2300	8,0	327,0	2,58	32	90	109	28	58	100
LS 2	50,29	40,23	4,50	2300	5,3	323,0	2,61	34	89	112	30	58	100
LL 3	53,32	33,96	5,65	2300	3,9	305,0	2,76	34	86	111	28	58	100
LS 3	53,01	27,33	6,98	2300	3,4	306,5	2,75	34	86	111	28	58	100
SL 1	53,86	27,48	7,05	2300	3,1	301,5	2,79	35	91	112	28	58	100
SS 1	50,40	21,35	8,50	2300	2,7	322,5	2,61	36	86	113	29	58	100
LL 4	49,85	19,47	9,22	2300	2,4	326,0	2,58	38	89	112	27	58	100
(iii) Five-hour-test at 75 % of pull at maximum power													
SL 1	40,95	20,68	7,12	2345	4,7	351,0	2,39	58	92	117	29	52	99,4
(iv) Five-hour-test at pull corresponding to 15 % wheelslip in test (ii)													
LS 1	34,06	52,18	2,35	2353	15,0	383,5	2,20	56	89	116	27	54	99,1

Oil consumption during 10 hours duration of tests (iii) and (iv): 75 g/h

TURNING AREA AND TURNING CIRCLE:

Wheel equipment: front: 14.9 R 24; 126 A8
rear: 18.4 R 34; 144 A8

Track of wheel: front: 1691 mm
rear: 1700 mm

Results *)	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning area	4,3/4,3	4,3/4,4	5,7/5,1	5,7/5,1
Radius of turning circle	4,1/4,2	4,1/4,2	5,4/4,8	5,5/4,8

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

LOCATION OF CENTRE OF GRAVITY:

	mm
Height above ground	1112
Distance forward from the vertical plane containing the axis of the rear wheels	933
Distance from the median plane of the tractor, left-side	8,5

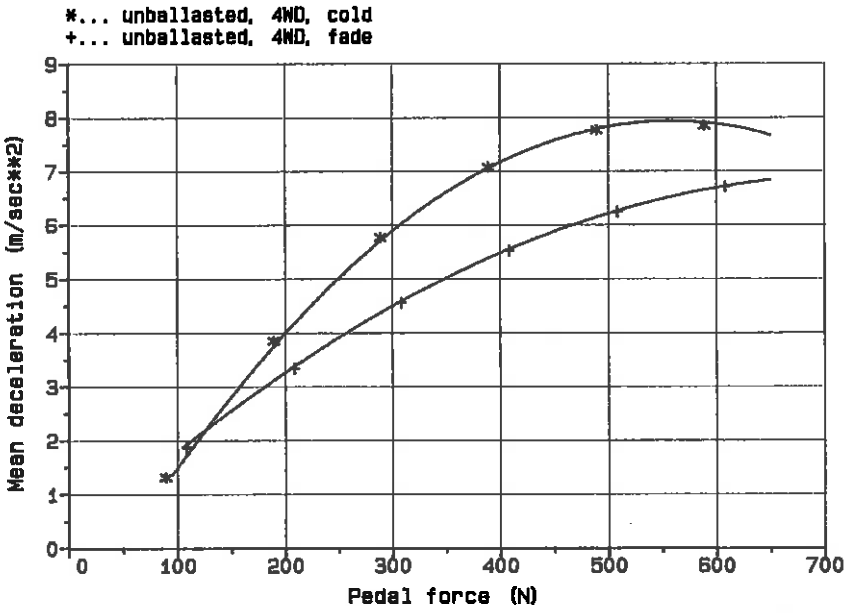
BRAKING:

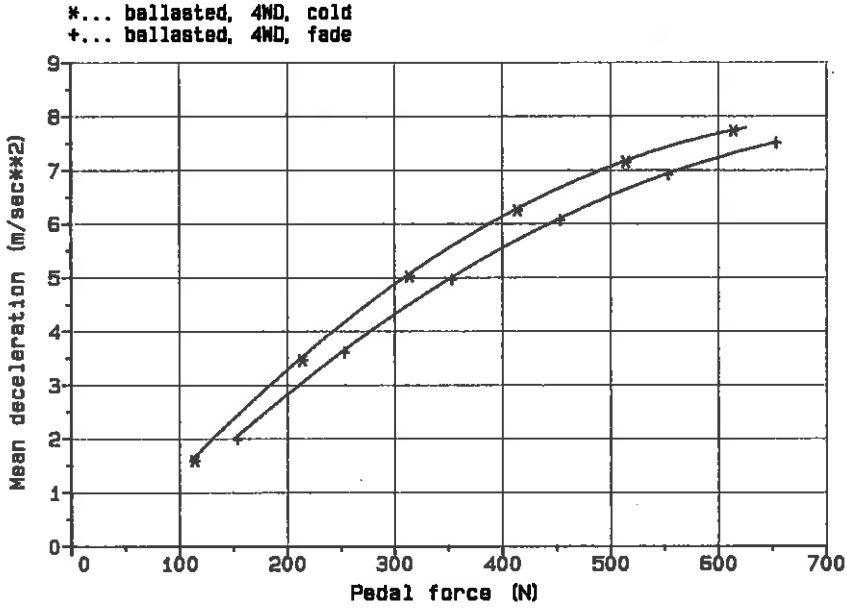
Date of tests: 11.7.1995 and 7.8.1995
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)

Tractor mass during brake tests (with driver):

	Front kg	Rear kg	Total kg
Ballasted	2100	3420	5520
Unballasted	1500	2480	3980

Service brake:





Speed before application of brakes: 38,70 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
	150/150 N	180/180 N

Four-wheel-drive switched: ON/OFF

MEASUREMENT OF EXTERNAL NOISE LEVEL:

Date of test: 6.7.1995

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

Type of track: Concrete

Gear number: SS 4

Travelling speed before acceleration: 29,8 km/h

Sound level: 83,7 dB(A)

REPAIRS: None

REMARKS: None

The head of department:

(Dipl.Ing. H. Lampel)
Oberrat

Bundesanstalt für Landtechnik, Wieselburg a. d. Erlauf

Test and report carried out by:

(Ing. Hermann Schaufler)

The director of testing station:

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