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BLT WIESELBURG

Akt Zl. 162/96

OECD-TEST-REPORT
for approbation according to OECD-Full Code (Code 1)
Standard Code by the OECD-Coordinating Centre at
C.E.M.A.G.R.E.F.
Antony, Cedex

Number and date of approval: 1/1741, 09th March 1998



Dieseltractor CASE IH 9087.75 (40 km/h version)

Trade name: CASE IH CS 150 (4 WD)

This report has been approved by the O.E.C.D. Coordinating Centre (CEMAGREF, France) as being in accordance with the O.E.D.C. 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
Trailer hitch	15
Holed drawbar	15
Steering	16
Brakes	16
Wheels	17
Protective structure	17
Driver's seat	18
Miscellaneous	18
Lighting	19
TEST CONDITIONS	20
TEST RESULTS	23
Compulsory test	23
Main power take-off performance - 1000 rev/min	23
Hydraulic power and lifting force	27
Drawbar performance	31
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:	CASE STEYR Landmaschinentechnik AG 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:	CASE IH
Trade name:	CS 150
Type:	9087.75
Model:	40 km/h version
Number of driving wheels:	4
Serial no.:	DBD0012501
1st serial no.:	DBD0012501

ENGINE:

Make:	STEYR
Model:	620.83
Type:	4 stroke diesel engine with direct injection and exhaust turbo super-charger
Serial no.:	620.83F3642

Cylinder:

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

Capacity:	6596 cm^3
Compression ratio:	16,5 ± 0,5 : 1
Arrangement of valves:	Overhead valves
Cylinder liners:	Wet liners

Supercharging:

Make:	SCHWITZER
Model:	S 2 B
Type:	Exhaust turbo supercharger
Pressure:	max. 0,81 kPa

Fuel system:

Fuel feed system:	Fuel feed pump integrated in injection pump
Make, model and type of fuel filter:	CAV filter 2 FASL with water trap
Capacity of fuel tank:	220 l (optional 2nd tank with 80 l)
Make, model and type of injection pump:	BOSCH in line pump PES 6A 2806/EM
Serial no.:	0 400 76 386
Manufacturer's production setting of injection pump, flow rate and timing:	73 mm^3 ±2 mm^3 per stroke at pump speed of 1150 rev/min and full load $21^{\pm1°}$ before TDC
Make, model and type of injectors:	STANADYNE NBS 770620
Opening pressure:	$23,0^{+2}$ MPa (230^{+20} bar)

Governor:

Make:	BOSCH RSV
Type:	Variable speed governor, mechanically acting, incorporated in injection pump
Governed range of engine speed:	From $750^{\pm50}$ to 2500^{-50} 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 6120 S/10
Type:	Piclon combined filter, dry type with integrated cyclonic pre-cleaner with automatic dust-drain valve and change-able 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 620 00 07 0700
Type of oilcooler:	BEHR or MODINE

Cooling system:

Type of coolant:	Water-anti-freeze mixture down to -20°C
Type of pump:	Centrifugal pump belt driven
Specification of fan:	Puller, 2 driving belts
Number of fan blades:	7, visco-fan
Fan diameter:	510 mm

Coolant capacity:	~ 24 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:	MAGNETI MARELLI
Model:	M 127 (2.8)
Type:	Solenoid engaged screw push starter motor
Starter motor power rating:	2,8 kW
Cold starting aid:	Thermostart 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 type Power: 1330 W/95 A - 14 V Optional: 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
Model:	47.05.9512.0.00 (pot) and 47.00.9512.0.00 (tube)
Type:	Absorption-reflexion type
Location:	176 mm right of the median plane of engine, 1745 mm above centre of crankshaft (end of bended exhaust tube)

TRANSMISSION TO WHEELS:

Clutch:

Make:	ZF
Model:	T 7200
Type:	Integrated "WET multi-disk clutch" actuated by pedal, additionally assisted by low pressure hydraulic circuit
Number of plates:	8
Diameter of plates:	213 mm
Method of operation:	8 plates incorporated in the same clutch housing are operated independent for gear box, for travel alone

Gear box:

Make:	STEYR/ZF
Model:	T 7200
Type:	Mechanically acting gear box with 4 step power shift
Model:	as tested (40 km/h)
Number of gears:	4 step power shift, forward/reverse group, main transmission 6 gears (synchronized) Total: 24 forward and 24 reverse speeds

Power shift transmission:

Forward reversing gear: 4 steps I/II/III/IV:	Powershift, electro-hydraulically actuated V/R, preselection of travel direction by toggle switch at gear shifting lever knob, change of direction happens after actuating the clutch pedal
Version:	1 gear selector
Available options:	a) 40 km/h version with Synchronized creeper range 40 forward/ 40 reverse speeds b) Max. speed 30 km/h Total 20 forward and 20 reverse speeds c) 30 km version with creeper range 36 forward/36 reverse speeds d) Max. speed 50 km/h Total 24 forward and 24 reverse speeds

e) 50 km version with creeper range 40 forward/40 reverse speeds
f) Power shuttle version to all versions electrohydr. actuated with controlls on the gear lever (multicontroller) and parallel on the steering column (left hand side).

Rear axle and final drives:

Make:	STEYR
Model:	HA 150
Type:	Central axle, pinion and bevel gear, wet multi plate differential, reduction by planetary gear in final drives
Differential lock:	Type: electro-hydraulically acting common with front axle differential lock, 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 than 14 km/h and disengages when speed is more than 14 km/h (no repeated automatically locking when speed drops under 14 km/h, renowed activation necessary).

Front axle and final drives:

Make:	CARRARO
Model:	LTA C 319 KH
Type:	Steering and driving axle, central type, integrated steering cylinder Driving shaft, pinion and bevel gear differential with electro-hydraulically operated multi-plate differential lock, half shafts, universal joints, planetary gears in wheel hubs
Differential lock:	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 driving shaft to front axle

Available option: Axle with independent front wheel suspension, 90 mm suspension stroke low position with stop, top position for maximum ground clearance, centred position sensor controller, selfcentering above 14 km/h

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
-	forward		
1	I L	266,32	2,78
1	II M	222,13	3,34
1	III H	185,27	4,00
1	IV S	154,56	4,80
2	I L	147,90	5,01
2	II M	123,36	6,01
2	III H	102,89	7,21
2	IV S	85,84	8,64
3	I L	92,24	8,04
3	II M	76,93	9,64
3	III H	64,17	11,55
3	IV S	53,53	13,85
4	I L	61,20	12,11
4	II M	51,04	14,52
4	III H	42,57	17,41
4	IV S	35,52	20,87
5	I L	44,46	16,67
5	II M	37,09	19,99
5	III H	30,93	23,97
5	IV S	25,81	28,73
6	I L	32,52	22,80
6	II M	27,13	27,33
6	III H	22,62	32,77
6	IV S	18,87	39,28

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
-	reverse		
1	I L	248,88	2,98
1	II M	207,66	3,57
1	III H	181,11	4,09
1	IV S	151,19	4,90
2	I L	138,22	5,36
2	II M	115,33	6,43
2	III H	100,58	7,37
2	IV S	83,96	8,83
3	I L	86,20	8,60
3	II M	71,92	10,31
3	III H	62,73	11,82
3	IV S	52,36	14,16
4	I L	57,19	12,96
4	II M	47,72	15,54
4	III H	41,62	17,81
4	IV S	34,74	21,34
5	I L	41,55	17,84
5	II M	34,67	21,38
5	III H	30,24	24,52
5	IV S	25,24	29,37
6	I L	30,39	24,39
6	II M	25,36	29,23
6	III H	22,12	33,52
6	IV S	18,46	40,15

L = step I, M = step II, H = step III, S = step IV

*) Calculated with rear tyre dynamic radius index of 855 mm (ISO 4251/1 - 1992)

test tyre equipment: rear 650/65 R 38 (28,8 R 38)
front 540/65 R 28 (16,9 R 28)

Number of revolutions of front wheels for one revolution of rear wheels: 1,318

POWER TAKE-OFF:

Main power take-off:

Type:	Independent p.t.o.
Method of engagement:	Wet multiplate clutch, electro-hydraulically operated by push-buttons; engaging-speed controlled depending on actuating-time of push-button; additional remote control of p.t.o. clutch at rear mudguards
Number of shafts:	1
Method of changing power take-off shaft speeds:	Speed selection by two hand levers and spur gears 1 flanged shaft at rear of tractor, 35 mm dia, 6 splines, ISO 500-1991 type 1, exchangeable for flanged shafts 35 mm dia, 21 splines, ISO 500-1991 type 2 or 45 mm dia, 20 splines, ISO 500-1991 type 3
Diameter of power take-off shaft end:	35 mm
Number of splines:	6, in conformity with ISO R 500 - 1991, type 1
Height above ground:	749 mm with tyre index redius of 855 mm
Distance from the median plane of the tractor:	0 mm
Distance behind rear wheel axis:	533 mm

	engine speed at standard p.t.o.	rated engine speed at p.t.o. rev.	Ratio
540	2208	562	4,089
540 E	1608	772	2,977
1000	2196	1046	2,197
1000E	1600	1437	1,600

Power restriction and max. torque:	None
Direction of rotation (viewed from behind tractor):	Clockwise

Front p.t.o.:	Optional
Location:	In front of tractor, direction forward, 877 mm above ground, 663 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 (35 mm, 6 splines)
P.t.o. speed at rated engine speed:	1190 rev/min
Ratio of rotation speed:	1,93
Power restriction and max. torque:	None
Direction of rotation (viewed from front of tractor):	Anticlockwise
Power take-off proportional to ground speed:	Not available

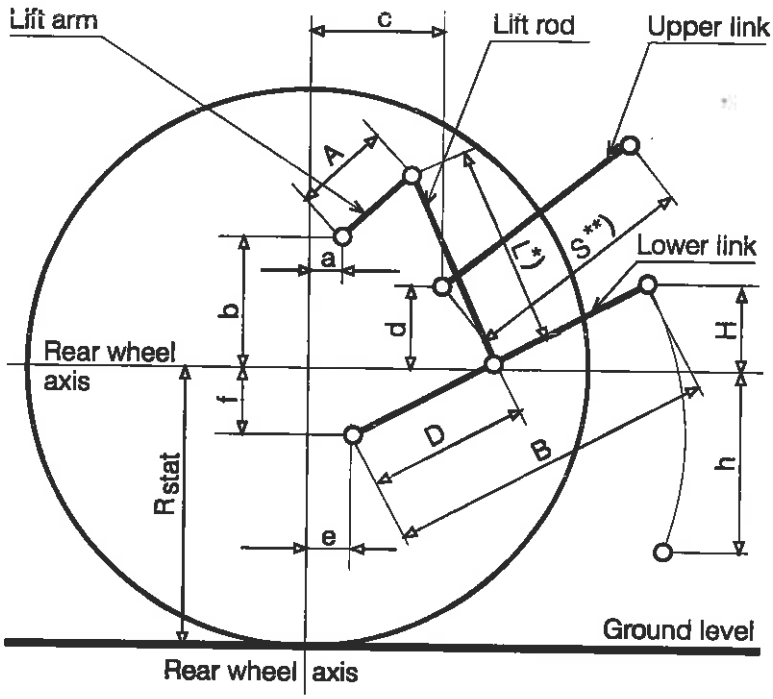
POWER LIFT:

In the rear:	
Make:	Own make
Type:	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 222 mm stroke, 100 mm bore
Type of linkage lock for transport:	Hydraulically by throttle valve
Relief valve pressure setting:	17,5 MPa (175 bar) + 1,2 MPa (12 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 right
Site of oil reservoir:	Gear box
Type, number and location of tapping points:	Up to 8 tapping points (4 oil circuits for single or double acting cylinders), 260 mm behind rear axle, 548/620 mm above rear axle, max. 144 mm left to 145 mm right of median plane In accordance to ISO/DIS 5675 - 1979
Available options:	a) Block of 3 or 4 auxiliary valves with one priority valve + flow control b) Load sensing valves; block of 2, 3 or 4 auxiliary valves with priority and flow control of all mechanical valves
Maximum volume of oil available to external cylinders:	30 l
<u>In the front:</u>	Not on tested tractor, hydraulic linkage actuated by auxiliary valve of the power lift
Make:	Own make
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 222 mm stroke, 100 mm Ø bore
Type of linkage lock for transport:	Hydraulically by throttle valve

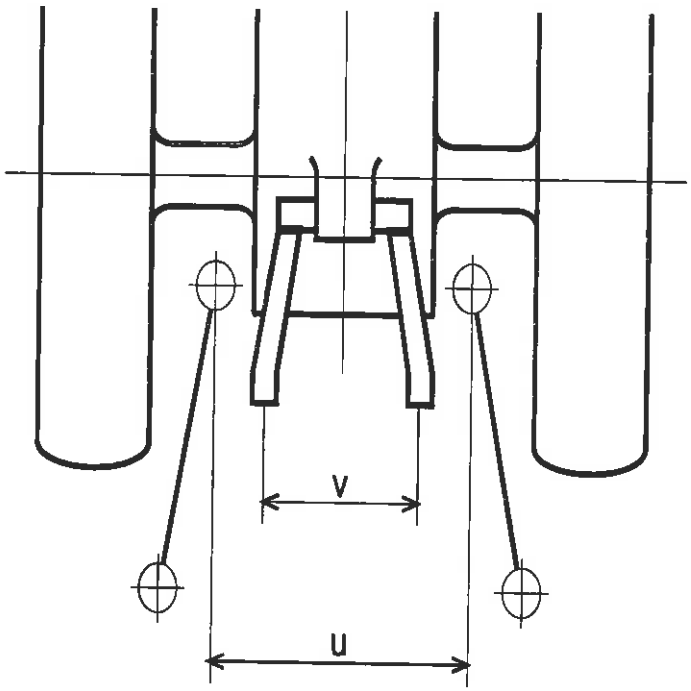
Three-point-linkage:

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



*) Left lift rod adjustable from 740 mm to 890 mm length by thread; right lift rod adjustable from 740 mm to 890 mm by thread.

**) Upper link length adjustable from 660 mm to 890 mm.



Dimensions of linkage geometry:

			Dimension of range mm	Settings used in test mm
Length of lift arms:		(A)	328	328
Length of lower links:		(B)	990	990
Distance of lift arm pivot points from rear wheel axis:	horizontally	(a)	210	210
	vertically	(b)	445	445
Horizontal distance between the lower link points:		(u)	470	470
Horizontal distance between the 2 lift arm end points:		(v)	578	578
Length of upper link:		(S)	655 - 892	790
Distance of upper link pivot point from rear wheel axis:	horizontally	(c)	380	380
	vertically	(d)	275 - 335	335
Distance of lower link pivot point from rear wheel axis:	horizontally	(e)	200	200
	vertically	(f)	230	230

Height of lower link hitch points relative to the rear wheel axis (625 mm above ground)*):

	Min. lift rod length	During test	Max. lift rod length
Length of lift arms (A) mm	328		
Linkage distance of lift rod (D) mm	495		
Length of lift rods (L) mm	740	835	890
Lowest position (h) mm	460	655	785
Highest position (H) mm	280	110	0

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

*) With dynamic radius index 855 mm (ISO 4251/1 - 1992)

TRAILER HITCH:	European	Italian
On tested tractor:		
Type:	2142 + 2145	23
Optional:	2142 + 2146/1	24
	2142 + 2146/2	25
Hole diameter/ bolt diameter:	32,5/31,5 mm	28,5/28 mm (Cat. C)
Optional:	-/30 mm	43,5/43 mm (Cat. D2)
	-/38 mm	50,5/50 mm (Cat. D3)
Height above ground:	516/562/608/654/ 723/792/838/884/ 930/967 mm	574/620/666/712/781/ 850/896/942 mm 988 mm (D2)
Distance of hitch point from rear wheel axis, horizontally:	705 mm	690 mm (D2)
Distance of hitch point from power take-off shaft end, vertically:	233/187/141/95/ 26/-43/-89/-135/ -181/-218 mm	175/129/83/37/-32/ -101/-147/-193/ -239 mm (D2)
horizontally:	155 mm	140 mm (D2)
Maximum vertical permissible load:	20 kN	15 kN (Cat. C)
Optional:		20 kN (Cat. D2)
		25 kN (Cat. D3)

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:	30/80 mm
Height above gound:	70 - 1135 mm
Horizontal distance to power take-off shaft end (rear):	657 mm

STEERING:

Make:	Zahnradfabrik Friedrichshafen (ZF) or DANFOSS, Nordborg
Model:	LAUCSDR 160/50-15-9 OR OSPQ 80/160 LS dyn
Type:	Hydrostatic steering
Method of operation:	Steering wheel acting on front wheels
Pump:	80 l/min at nominal revolution of engine
Rams:	Incorporated in front axle, acting piston area 25,1 cm^2, stroke 238 mm dia 65 mm, cylinderrod 32 mm
Working pressure:	15,0 MPa (150 bar)

BRAKES:

Service brake:

Make:	Rear axle: SIRMAC or KNOTT Optional on front axle: CARRARO
Model:	Rear axle: 9,5" x 7" or 8,75" x 6" Optional on front axle: 707-S4 HD
Type:	Rear axle: Servo brake in oil bath, 10 acting faces with 211,14 mm or 190 mm effective diameter each with automatic connection to front wheel drive Optional on front axle: 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 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:	2806 mm

Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1800	2000	Fix wheels or adjustment rims
Rear	1800	2000	

PROTECTIVE STRUCTURE:

Make:	Own make
Model:	STEYR 130.02
Type:	Cab
Manufacturer's name and address:	Case Steyr Landmaschinen AG A-4300 St. Valentin
Protective device:	Welded and screwed profile steel tube construction
OECD-approval no.:	4/0 520

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:	GRAMMER
Model:	MSG 95 G/20
Type of suspension:	Pneumatical, with a rubber bladder
Type of damping:	Hydraulically damping
Range of adjustment;	
longitudinal:	150 mm
vertical:	160 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:	Own make
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	1260	138 x 100	215
Side lights	1770	110 x 40	855
Rear lights	1820	140 x 90	875
Brake lights	1850		
Direction indicators front	1810	110 x 40	850
Direction indicators rear	1915	140 x 40	875
Reflectors	1800 760	126 x 32 80 Ø	865 520

*) Measured with tyre dynamic radius index at rear 855 mm and 670 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	5335	2515	2750	2910
Unballasted	4930	2515	2750	2910

*) Measured on the outside edges of the rear wheels

Ground clearance:
(unballasted tractor)

Clearance limiting part: 540 mm under the front axle
440 mm under the trailer hitch mounting plate

Tractor mass: With tanks full and cab

		Without driver	With driver
		kg	kg
Unballasted	Front	2505	2520
	Rear	3505	3565
	Total	6010	6085
Ballasted	Front	3280	3295
	Rear	5115	5175
	Total	8395	8470

Ballast:

	Number of weights	Mass total kg	Water kg
Front	20	615	-
Rear	2 x (3 + 1 + 1)	530	1240
Optional	-	-	-

Tyres and track width specifications:

Tyres:

	Front	Rear
Dimensions	540/5 R 28 (16.9R28)	650/65 R 38 (20.8R38)
Ply rating	137 A8	154 A8
Type	AS	AS
Max. load (tyre manufacturer's)	4600 kg	7500 kg
Max. load (tractor manufacturer's)	4400 kg	7200 kg
Inflation pressure (tyre manufacturer's)	1,2 bar	1,2 bar
Dynamic radius index	670 mm	855 mm
Chosen track width	1920 mm	1900 mm

Oil and lubrication:

Capacity and change interval:

	Capacity (dm3)	Oil change (h)	Filter change (h)
Engine	20	250	250
Gear box and rear axle	90	1000	1000
Front axle	6	1000	-
Rear axle	20	1000	-
Final drive front	0,8 x 2	500	-
Final drive rear	-	1000	-
Hydraulic system	90	1000	1000
Steering	90	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 C	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	
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:	9	
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: 25.3.1997, 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					
95,00	1800	819	22,94 27,24	241,5	3,49
Power at rated engine speed					
91,50	2300	1047	25,87 30,72	282,5	2,98
Standard power take-off speed					
94,00	2197	1000	25,42 30,19	270,5	3,11
PART LOADS					
(i) The torque corresponding to maximum power at rated engine speed					
91,50	2300	1047	25,87 30,72	282,5	2,98
(ii) 85 % of torque obtained in i)					
78,70	2327	1059	23,59 28,02	300,0	2,81
(iii) 75 % of torque defined in (ii)					
60,00	2367	1077	20,06 23,82	334,5	2,52
(iv) 50 % of torque defined in (ii)					
40,50	2395	1090	16,51 19,61	407,5	2,07
(v) 25 % of torque defined in (ii)					
20,60	2434	1108	12,22 14,52	593,5	1,42
(vi) unloaded					
0	2456	1119	8,66 10,28	-	-

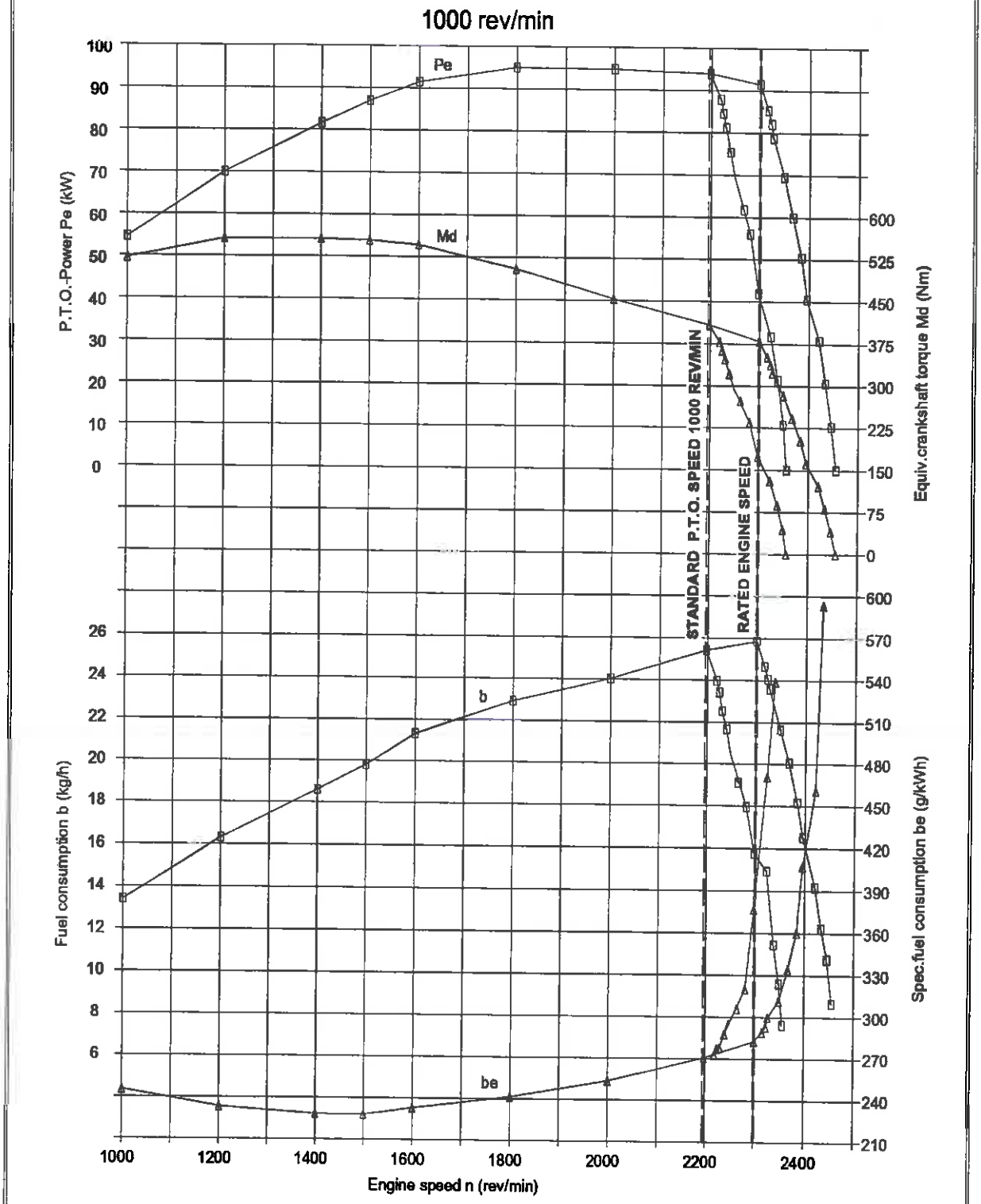
Power	Speed		Fuel consumption		Specific energy
	engine	p.t.o.	hourly	specific	
kW	rev/min	rev/min	kg/h l/h	g/kWh	kWh/l
PART LOADS AT STANDARD POWER TAKE-OFF SPEED					
(i) The torque corresponding to maximum power available					
94,00	2197	1000	25,42 30,19	270,5	3,11
(ii) 85 % of torque obtained at maximum power					
81,10	2230	1015	22,53 26,76	278,0	3,03
(iii) 75 % of torque defined in (ii)					
61,30	2260	1029	19,05 22,62	310,5	2,71
(iv) 50 % of torque defined in (ii)					
41,80	2298	1046	15,76 18,72	377,0	2,23
(v) 25 % of torque defined in (ii)					
21,30	2338	1064	11,47 13,62	538,5	1,56
(vi) unloaded					
0	2356	1072	7,63 9,06	-	-

No load maximum engine speed: 2456 rev/min
Equivalent crankshaft torque
at maximum power: 379,9 Nm at rated engine speed
Maximum equivalent crankshaft torque: 556,3 Nm at 1200 rev/min of engine

Mean atmospheric conditions
temperature: 16°C
pressure: 1004 mbar
rel. humidity: 60 %

Maximum temperatures
coolant: 89°C
engine oil: 112°C
fuel: 47°C
engine air intake: 26°C

Bundesanstalt für Landtechnik Wieselburg/Erlauf, Austria	P.T.O.-test	CASE IH Typ CS150 (9087.75) Mot.Typ STEYR 620.83

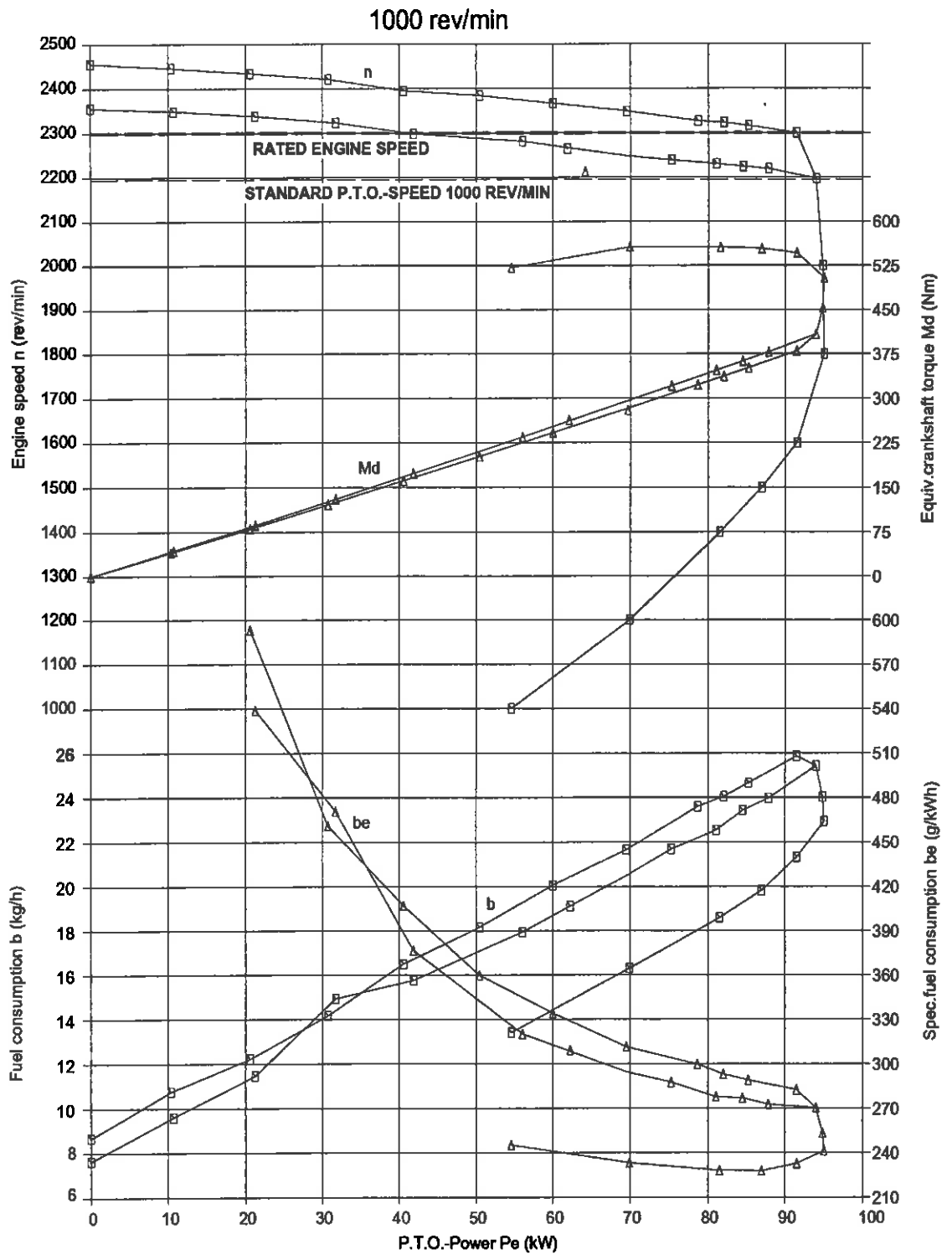


engine ser.nr. : 620.83F3642	atm pressure: 1004 mbar	fuel temp. : 47 C	signature
tractor ser.nr.: DBD0012501	air temper. : 16 C	d. of tests : 1997-03-05	
fuel : 0.842/15 C	coolant temp.: 89 C	test no	
engine oil : SAE 30	oil temp. : 112 C	curves no. : 1	Haider

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Bundesanstalt für Landtechnik Wieselburg/Erlauf, Austria	P.T.O.-test	CASE IH Typ CS150 (9087.75) Mot.Typ STEYR 620.83



engine ser. nr. : 620.83F3642	atm pressure: 1004 mbar	fuel temp. : 47 C	signature
tractor ser. nr.: DBD0012501	air temper. : 16 C	d. of tests : 1997-03-05	
fuel : 0.842/15 C	coolant temp.: 89 C	test no	
engine oil : SAE 30	oil temp. : 112 C	curves no. : 2	Haider

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HYDRAULIC POWER AND LIFTING FORCE:

Date of tests: 27.3.1997

Hydraulic power test:

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

Pump delivery rate at minimum pressure (at rated engine speed): 68,7 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	65,6	16,7	18,3
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	68,7	16,1	18,4

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)

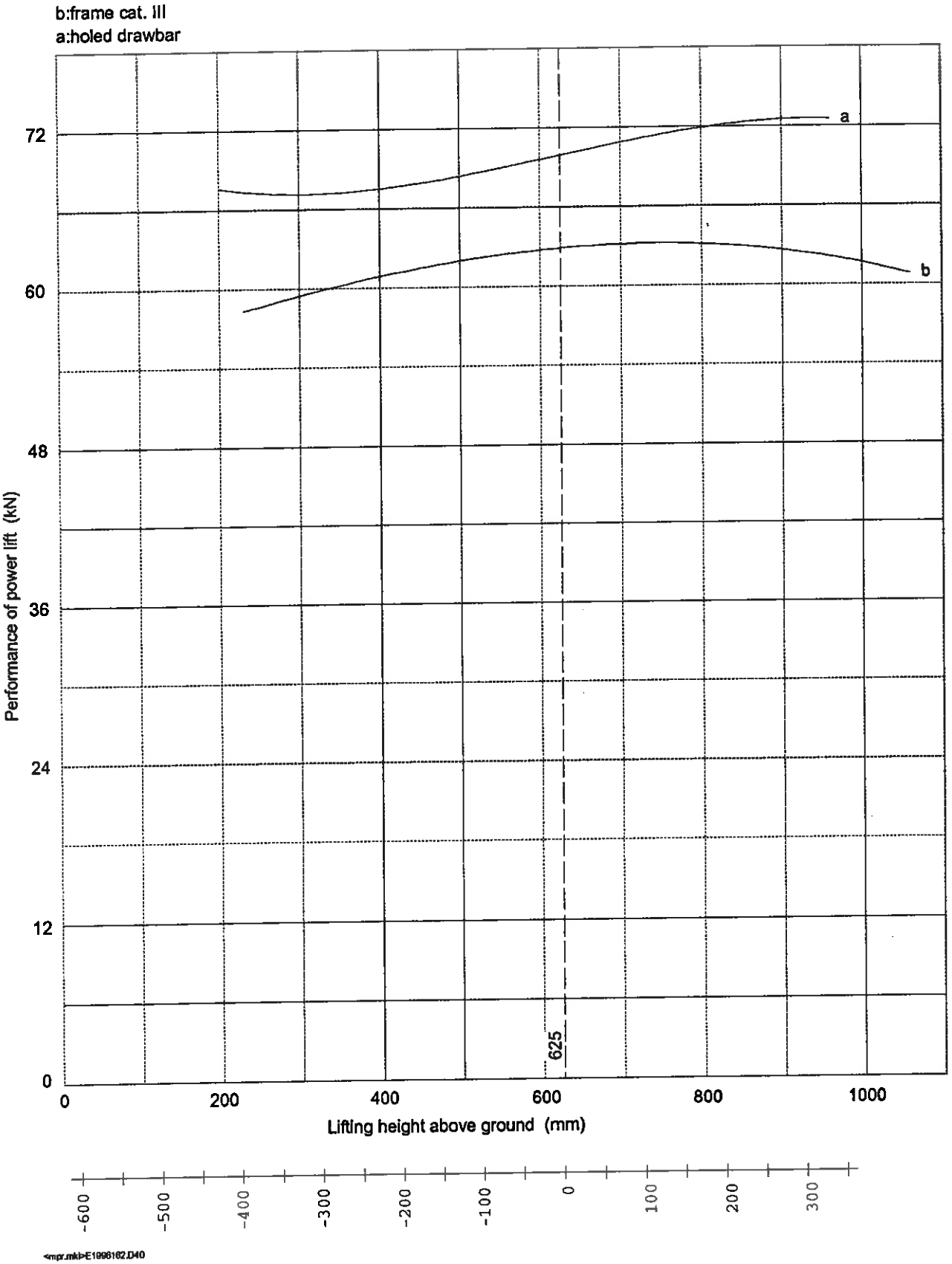
Closing pressure of the unloading valve: 18,0 MPa (180 bar)

Power lift test:

	at the hitch point	on the frame
		685 mm mast height
Height of lower hitch points above ground in down position	200 mm	230 mm
Vertical movement	765 mm	835 mm
Maximum corrected force exerted through full range	67,2 kN	58,3 kN
Corresponding pressure of hydraulic fluid	16,7 MPa (167 bar)	16,7 MPa (167 bar)
Moment about rear wheel axis	80,0 kNm	104,9 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	-425	-395	-300	-250	-200	-150	-100	0	+100	+150	+200	+250	+340	+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	67,6	67,4	67,2	67,4	67,7	68,2	68,7	69,9	71,2	71,7	72,1	72,4	72,5	
at the frame kN (610 mm mast height)		58,3	59,8	60,5	61,2	61,7	62,2	62,9	63,2	63,2	63,0	62,8	61,7	60,7



Height relative to the horizontal plane including the lower link pivot points (dyn. radius index 855 mm)

Drawbar performance:

Date of test: 14.3.1997, 12.5.1997
15.5.1997

Type of track: Concrete

Height of drawbar above ground: unballasted 410 mm, ballasted 410 mm

Tyre inflation pressure: front: unballasted 80 kPa, ballasted 100 kPa
rear: unballasted 80 kPa, ballasted 100 kPa

Tyre sizes: front: 540/65 R 28; 137 A 8 rear: 650/65 R 38; 154 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 I L	37,47	53,52	2,52	2363	15,0	-	-	40	77	101	15	67	99,5
1 II M	43,58	52,51	2,99	2347	15,0	-	-	41	79	103	15	67	99,5
1 III H	51,83	52,27	3,56	2335	15,0	436,5	1,93	41	79	103	15	67	99,5
1 IV S	61,95	52,84	4,21	2310	15,0	398,0	2,12	40	80	105	15	67	99,5
2 I L	65,03	53,11	4,39	2306	15,0	379,0	2,22	42	80	103	12	67	99,5
2 II M	70,39	44,71	5,65	2300	8,5	367,5	2,29	44	81	109	12	67	99,5
2 III H	75,72	39,34	6,91	2300	6,7	341,5	2,46	44	81	109	12	67	99,5
2 IV S	73,32	31,20	8,46	2300	5,1	353,0	2,39	44	85	109	13	67	99,5

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
3 I L	74,00	33,94	7,85	2300	5,5	349,5	2,41	44	81	108	13	67	99,5
3 II M	71,94	27,31	9,47	2300	4,4	359,5	2,34	45	84	109	12	67	99,5
3 III H	72,00	22,58	11,48	2300	3,8	359,5	2,34	45	84	109	12	67	99,5
3 IV S	67,49	17,51	13,86	2300	3,0	383,5	2,20	45	84	109	12	67	99,5
4 I L	73,41	21,98	12,02	2300	3,6	352,6	2,39	45	81	109	12	67	99,5
4 II M	68,61	17,02	14,51	2300	3,0	377,0	2,23	46	80	109	14	67	99,5
(ii) Maximum power in tested gears (ballasted tractor)													
1 I L	55,10	79,88	2,48	2325	15,0	436,5	1,93	42	81	109	18	81,0	99,6
1 II M	66,10	79,60	2,99	2300	13,0	391,5	2,15	44	82	110	18	81,0	99,6
1 III H	72,00	67,30	3,85	2300	8,7	359,5	2,34	44	82	110	18	81,0	99,6
1 IV S	71,00	55,49	4,61	2300	7,2	364,5	2,31	45	82	111	18	81,0	99,6
2 I L	71,80	53,60	4,82	2300	6,8	360,5	2,34	45	82	111	18	81,0	99,6
2 II M	72,10	44,80	5,80	2300	6,2	359,0	2,35	45	82	110	18	70,0	99,6
2 III H	73,70	38,00	6,98	2300	5,8	351,0	2,40	45	83	111	18	68,0	99,6
2 IV S	72,20	30,71	8,46	2300	5,2	358,5	2,35	46	83	111	18	69,0	99,6

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
3 I L	72,20	32,97	7,88	2300	4,6	358,5	2,35	46	82	111	18	66	99,6
3 II M	70,30	26,83	9,43	2300	5,0	368,0	2,29	46	82	111	18	66	99,6
3 III H	69,00	21,91	11,34	2300	4,7	375,0	2,25	46	82	111	18	66	99,6
3 IV S	66,40	17,53	13,64	2300	4,4	389,5	2,16	46	80	111	18	68	99,6
4 I L	68,20	20,66	11,88	2300	4,8	379,5	2,22	46	80	111	18	68	99,6
4 II M	65,50	16,49	14,29	2300	4,4	395,0	2,13	46	81	110	18	70	99,6
(iii) Five-hour-test at 75 % of pull at maximum power													
2 III H	56,70	28,59	7,12	2327	5,0	416,0	2,02	57	84	114	26	58	99,6
(iv) Five-hour-test at pull corresponding to 15 % wheelslip in test (ii)													
1 I L	55,10	79,88	2,48	2325	15,0	436,5	1,93	61	82	108	29	60	99,6

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

TURNING AREA AND TURNING CIRCLE:

Wheel equipment: front: 540/65 R 28; 137 A 8
rear: 650/65 R 38; 154 A 8

Track of wheel: front: 1920 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	5,01/5,60	5,28/5,65	6,91/6,48	7,11/6,68
Radius of turning circle	4,76/5,20	4,88/5,31	6,72/6,26	6,89/6,45

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

LOCATION OF CENTRE OF GRAVITY:

	mm
Height above ground	1028
Distance forward from the vertical plane containing the axis of the rear wheels	1162
Distance from the median plane of the tractor, left-side	1

BRAKING:

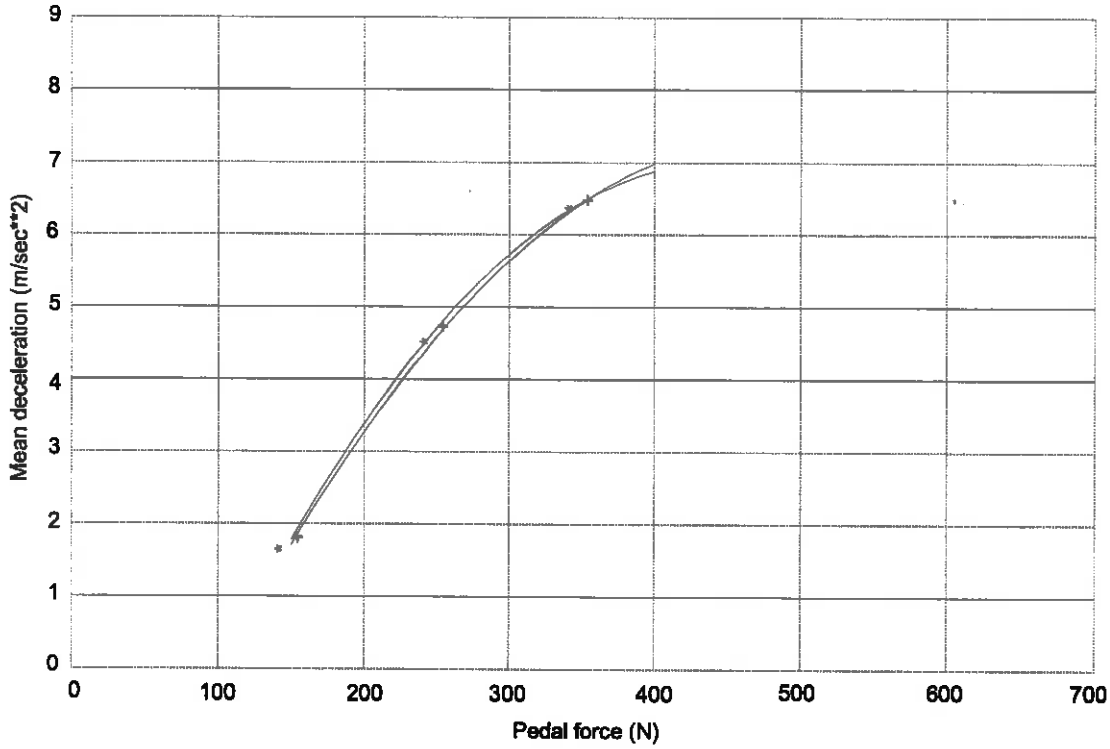
Date of tests: 13.3.1997; 16.5.1997
Type of track: Concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)

Tractor mass during brake tests (with driver):

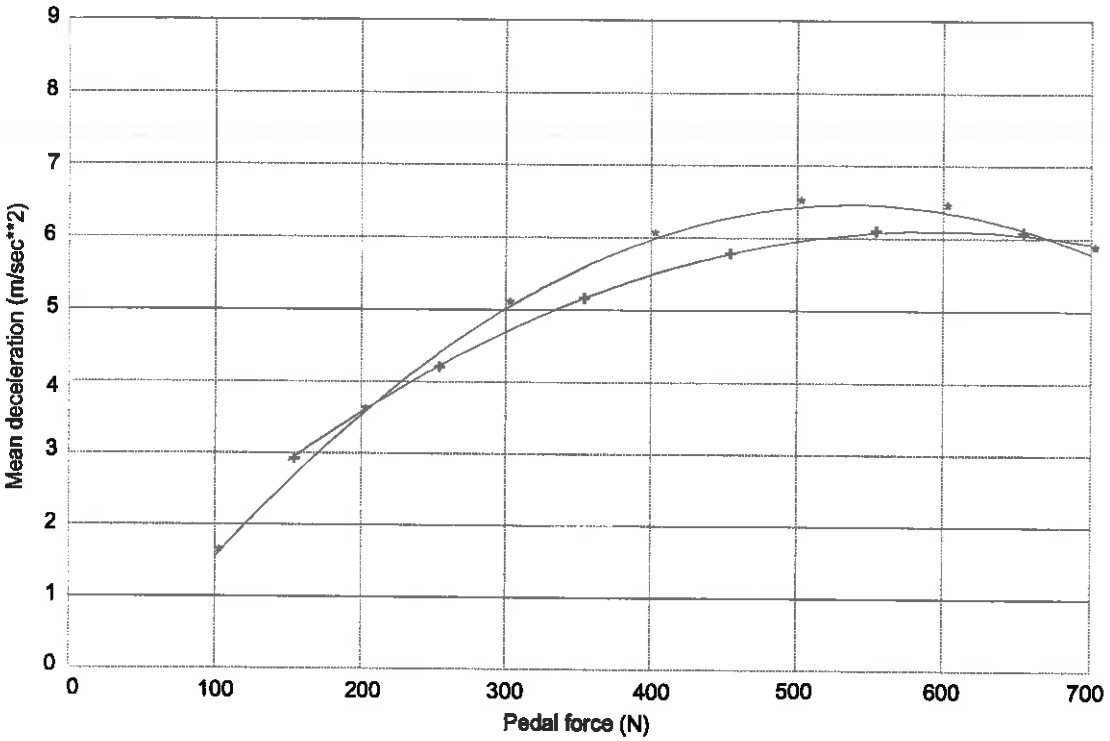
	Front kg	Rear kg	Total kg
Ballasted	3295	5175	8470
Unballasted	2520	3565	6085

Service brake:

*... unballasted, 4WD, cold
+... unballasted, 4WD, fade



*... ballasted, 4WD, cold
+... ballasted, 4WD, fade



Speed before application of brakes: 39.70 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
	80 N	80 N

Four-wheel-drive switched: ON/OFF

MEASUREMENT OF EXTERNAL NOISE LEVEL:

Date of test: 2.4.1997

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

Type of track: Concrete

Gear number: 6 step IV (S)

Travelling speed before acceleration: 30,3 km/h

Sound level: 85,2 dB(A)

REPAIRS: None

REMARKS: None

The head of department:

(Dipl.Ing. H. Lampel)
Hofrat

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