O.E.C.D. Report No.: 522

BUNDESVERSUCHS - UND PRÜFUNGSANSTALT
für landwirtschaftliche Maschinen und Geräte,
Wieselburg

Diesel-Tractor STEYR 1400 a

New official denomination:

Steyr-Diesel Tractor, model 397.35

New trade name:

Diesel-Tractor STEYR 8160 a



Serial Nr.: 522

Test Nr.: 210/75

Date of approval: 1976 07 29

Date of test: 1975 12 05

This report has been approved by the O.E.C.D. Coordinating Centre (C.N.E.E.M.A., France) as being in accordance with the O.E.C.D. Test Code

TABLE OF CONTENTS

Page

Specification of tractor 2
Fuel and lubricants used in tests 8

COMPULSORY TESTS

Main power take-off performance 9
Drawbar performance 12
Turning space and turning circle 14
Location of centre of gravity 14
Braking performance 14
Ambient noise, emitted by the tractor 15
Noise at the driver's ear level 15
Power lift and hydraulic pump performance . 15

OPTIONAL TESTS

Engine performance 19

Tractor manufacturer:	STEYR-Daimler-Puch AG., Steyr, Austria – STEYR-Hellas ABE., Sindos/Saloniki, Greece
Submitted for test by:	Manufacturer
Selected by:	Manufacturer by agreement with BVPA-Wieselburg
Place of running-in:	Steyr, Austria
Duration of running-in:	120 hours

SPECIFICATION OF TRACTOR

Tractor:

Make:	STEYR-Daimler-Puch AG.
Model:	Diesel-Tractor STEYR 1400a
Type:	Four wheel driven, unit construction
Serial No.	397.35 – 1648/01

Engine:

Make:	Own make
Model:	WD 612.85
Type:	4 stroke diesel engine with direct injection and exhaust driven supercharger
Serial No.:	612.85 – 1001/01
Cylinders:	6, vertical in line Bore/stroke: 108/120 mm Capacity: 6592 cm^3 Compression ratio: 16,5 Cast-in cylinder liners
Valves:	Overhead valves

Fuel system:

Fuel feed:	Fuel pump incorporated in injection pump
Fuel filter:	PUROLATOR Dual filter with changeable filter element Duo-filter, No. 00601
Capacity of fuel tank:	appr. 243 l
Injection pump:	FRIEDMANN & MAIER Injection pump in line, model P 26 T 24s – 8.82 B II RVF

	Combined with fuel feed pump, model FP/KE 22 AD 254/2 Manufacturers production setting: $72\ ^{+0}_{-2}$ mm³/stroke at 2200 rev/min
Injectors:	BOSCH multi hole injection nozzles DLLA 150 S 456 Injection pressure: $21,6\ ^{+0,49}_{0}$ MPa ($220\ ^{+5}_{0}$ kp/cm²) Injection timing: $31\ ^{+0}_{-2}$ ° before TDC at 1 mm pump stroke
Governor:	FRIEDMANN & MAIER Mechanically acting variable speed governor incorporated in injection pump, R 8 V 20 - 110/106 D Range of speed: 400 to 2420 rev/min Rated speed: 2200 rev/min
Air cleaner:	Maincleaner: IFE-Gesellschaft für Apparate- u. Filterbau Dry type changeable element and electric indicator Pre-cleaner: MANN & HUMMEL Cyclonic type, model No. 4809667900
Exhaust system:	at front of tractor, upswept, integrated silencer
Lubrication system:	Forced lubrication with gear pump and oil cooler, strainer in sump, paper filter in full flow Oil capacity: appr. 14 l Changing period: 200 hours summer: SAE 30 HD winter: SAE 20 HD
Cooling system:	Double circuit water cooling system with centrifugal pump Tubular radiator with longtime filling, frost protected down to - 20° C Centrifugal pump and 6 blade fan (dia: 510 mm) belt driven Thermostat control Coolant capacity: appr. 27 l Overpressure: 49 kPa (0,50 kp/cm²) Joining for warm water heating
Starting system:	BOSCH, solenoid engaged starter motor 0 001 359 053 JD(R) 12 V, 2,94 kW (4 PS) Cold starting aid: glow plug in intake pipe
Electrical system:	Voltage: 12 Volt, negative earth Generator: LUKAS; three phase generator G 1-14 V-398 W Batteries: 2 in parallel connection with totally 176 Ah capacity at 20 hours rating

Transmission:

Clutches:	Main clutch: FICHTEL & SACHS AG., BRD Single plate dry clutch with torsion antivibrator 350 mm dia, pedal operated P.t.o. clutch: own make Wet multi plate clutch, 155 mm dia hydraulically engaged, hand switch operated

Gearbox: Own make
Group gear with 3 forward and 1 reverse group combined with a 4 speed change gear
Totally 12 forward and 4 reverse speeds

Rear axle and final drive:
Central axle; pinion and bevel gear, lockable bevel gear differential, acting by planetary gears on rear wheels
Differential lock: hydraulically engaged, hand switch operated

Front axle and final drive:
Central steering axle; propeller shaft, pinion and bevel gear, lockable bevel gear differential, acting by universal joints to planetary gears and to front wheels
Front wheel drive: hydraulically engaged, hand switch operated
Differential lock: hydraulically engaged, hand switch operated

Oil capacity: Combined oil case for gear box, rear axle, rearward planetary gears and hydraulic circuits
appr. 75 l multi-purpose oil
Front axle: differential gear 15 l multi-purpose oil
Planetary gear: 1,25 l multi-purpose oil each
Change period: 800 hours or one year
Recommended oil: ELAN-Austromatic HGN, SAE 80

Group	Gear No.	Number of engine revolutions for one revolution of driving wheel	*) Nominal travelling speed for rated speed of engine km/h
forward slow VL	1	207,16	3,26
	2	147,45	4,57
	3	107,06	6,30
	4	76,84	8,77
forward medium VM	1	124,43	5,42
	2	88,60	7,61
	3	64,31	10,49
	4	46,17	14,61
forward fast VS	1	56,98	11,83
	2	40,58	16,62
	3	29,46	22,89
	4	21,15	31,98
reverse	1	121,88	5,53
	2	86,82	7,77
	3	63,02	10,70
	4	45,24	14,90

*) calculated with tyre rolling radius of 813 mm

Power take-off:

At rear of tractor, in median plane
Involute profile with 21 splines, 34,9 mm dia
according to ISO-standard (DIN 9611 Form II)
Independent p. t. o. with multi disc clutch
Height above ground: 678 mm
P. t. o. speed: 1205 rev/min at 2200 rev/min engine speed
Engine speed: 1825 rev/min at 1000 rev/min standard p. t. o. speed
Engine speed indication by Traktormeter
Direction of rotation: clockwise viewed facing driving end

Power lift:

Own make
Draught control with two stage pull adjustment and lower link sensing, position control, floating position
Oil capacity (see transmission and rear axle): appr. 75 l

"STEYR-SIMPLEMATIK" standard linkage
for category II/III; double hole lift arms

BOSCH-hydraulic pump, gear type, directly driven by engine
BOSCH-control unit
Working cylinder: single acting cylinder
Oil tappings: up to 4 with additional control units for single acting cylinders, one tapping is mounted in quantity

Holed drawbar:

Fitted in the clevis of the lower links of the three point-linkage
Number of holes: 7, diameter: 32 mm, distance: 115 mm
Height above ground: changeable from 120 to 1020 mm totally
Method of changing: by lower lift, length of lift rods, length of lift arms
Distance to rear axle: 1160 mm (lower links horizontally)
Distance relative to p. t. o.: 575 mm

Trailer hitch:

Fork type
Height above ground: 855 mm
Distance from rear axle: 565 mm
Position relative to p. t. o.: 20 mm
Diameter of coupling pin: 31 mm
Max. vertical load: 14710 N (1500 kp)

Towing hitch:

Fork type
Height above ground: 825 mm
Distance from front axle: 1015 mm
Diameter of coupling pin: 35 mm

Steering:

ZF-Schwäbisch Gmünd, BRD
Hydrostatic steering, Model 8453
Own oil pump for steering and hydraulically switching functions, gear type pump, directly driven by engine

Combined oil case with transmission and gearbox
(Optional: own oil case with 2, 5 l oil capacity)
Delivery rate: 41 l/min (16 l/min with own oil case)
Operated by steering wheel; acting on front wheels

Brakes:

GIRLING
Foot brake: hydraulically acting four wheel brake, disc brakes at rear axle in oil bath, internal shoe brakes at front axle with servo action by compressed air; pedal operated
Parking brake: mechanically acting disc brake in oil bath on rear wheels, independent of foot brake, hand lever with ratchet, hand operated
Steering assistance brake: hydraulically acting disc brake in oil bath on rear wheels, operated by divided pedal
Trailer braking system: high pressure compressed air system with trailer braking valve

Wheels:

Front wheels: 2 pneumatics, steering and driving function, radial carcass
18, 4/15-26 AS, PR 8; rim DW 16x 26 - B
maximum permissible load on each tyre: 22210 N (2265 kp) at 1, 37 bar (= 1, 4 kp/cm^2) inflation pressure
track width: 1900 mm

Rear wheels: 2 pneumatics, driving function, radial carcass
18, 4/15-38 AS, PR 8; rim W 16 L x 38
maximum permissible load on each tyre: 26630 N (2715 kp) at 1, 37 bar (= 1, 4 kp/cm^2) inflation pressure
track width: 1900 mm

Wheel base: 2700 mm

Lighting:

Unrestricted beam angle of headlight in plan view 0, 0919 rad (5, 27°)

	Height above ground of centre mm	Diameter mm	Distance from outside edge of tractor to centre mm
Head lights	990	140 x 125	1015
Side lights	1828	190 x 65	320
Rear lights	1792	190 x 65	227
Reflectors	1475	100 x 55	111

Number of grease points: 21 (whole tractor)

Seat: BOSTROM, GB
Model: Viking 301 E low back; tested on tractor STEYR 1400 a according to the national regulation "Driverseats on tractors and transporters" (Prot.Nr. 005/75)

Type of suspension: X-lever construction with torsions springs adjustable to drivers weight

Type of damping: Hydraulically

Range of adjustment:
Horizontal 190 mm
vertical 80 mm

Safety cab: Own make
"STEYR-Komfortkabine" model 120.11;
Tested according to the OECD-standard code
OECD-test report No CS 1043
Acoustic damped cab, rubber block mounted, with seat for driver and passenger, airventilation and heating

CONDITIONS DURING TEST

Weights:

Tractor without driver but with tanks full and safety cab

	Front	Rear	Total
Without ballast	25 790 N (2 630 kp)	29 130 N (2 970 kp)	54 920 N (5 600 kp)
With ballast	42 070 N (4 290 kp)	40 070 N (4 086 kp)	82 140 N (8 376 kp)

Ballast:

	Number of weights	Total weights (excluding water)	Water
Front	18 + 1	8 340 N (850 kp)	5 880 N (600 kp)
Rear	8 + 2	4 860 N (496 kp)	8 140 N (830 kp)
Additional	-	-	-

Track setting: 1900 mm at front
1900 mm at rear

Overall dimensions:

	Lenght m	Width m	Height *) m
With ballast	4, 910	2, 340	2, 750
Without ballast	4, 910	2, 340	2, 750

*) measured to top of safety cab

Minimum ground clearance: 480 mm under front axle

Fuel and lubricants used in test:

Laboratory and track tests:

Fuel: ELAN Diesel fuel, specific gravity at 15° C: 0, 855 kg/l
Viscosity at 20° C: 5 mm^2/s (5 cSt)
Cetane no.: 50 (according to DIN 51 501)

Engine oil: SHELL ROTELLA SX 20 W/40

Transmission and hydraulic oil:
ELAN-Austromatic HGN-SAE 80-Multipurpose oil
Viscosity at 100° C: 9, 8 mm^2/s (9, 8 cSt)

COMPULSORY TESTS

1. Main power take-off performance

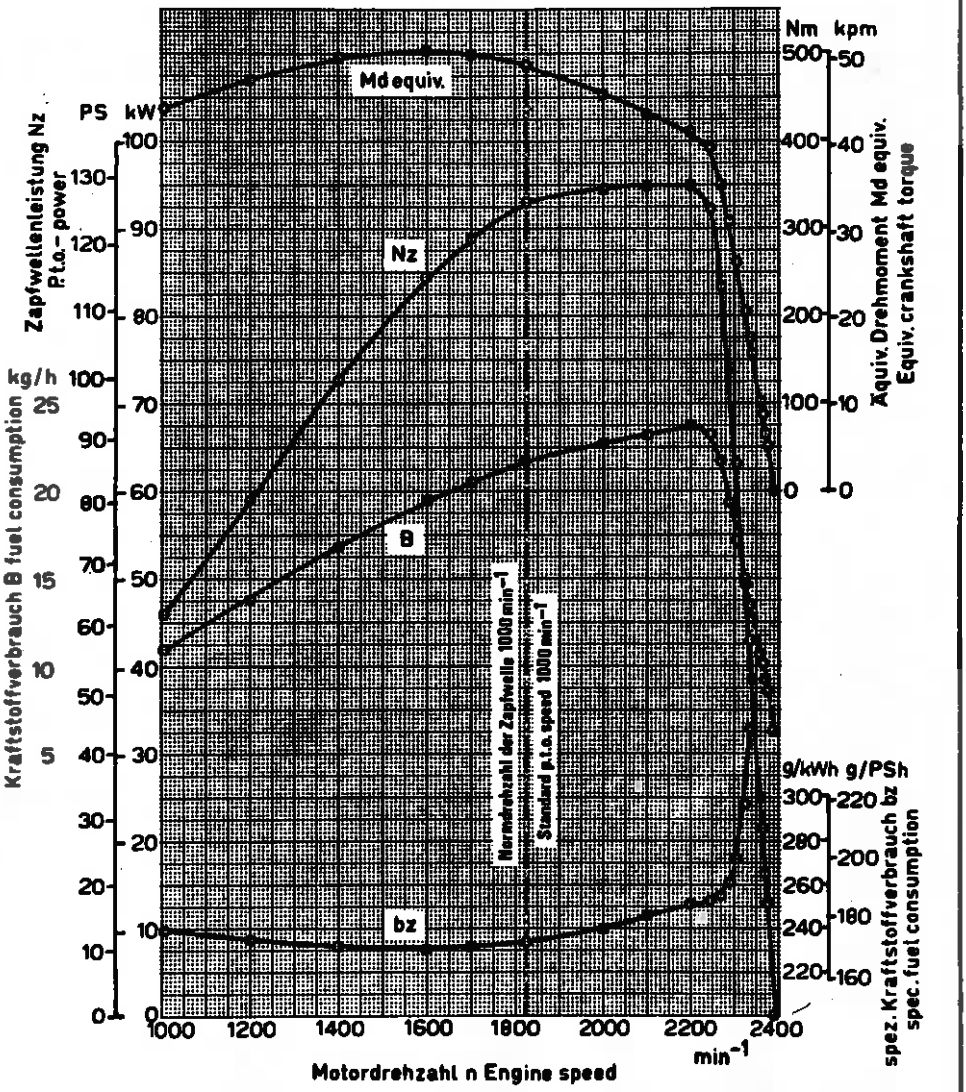
Date and location of tests: 1975 07 11, Wieselburg, Austria
Type of dynamometer: SCHENK eddy current brake W 780

Power	Speed		Fuel consumption		
	engine	p.t.o.	total	specific	specific
kW(PS)	rev/min	rev/min	kg/h (l/h)	g/kWh(g/PSh)	kWh/l(PSh/l)
Maximum power - 2 hours test					
94,9 (129,0)	2200	1205	23,87 (27,92)	252 (185)	3,399 (4,620)
Standard p.t.o. speed (1000 rev/min)					
93,1 (126,6)	1825	1000	21,75 (25,44)	234 (172)	3,659 (4,976)
The speed recommended by the manufacturer for drawbar work					
94,9 (129,0)	2200	1205	23,87 (27,92)	252 (185)	3,399 (4,620)
Part loads					
(i) 85 % of torque at maximum power					
83,2 (113,2)	2270	1244	21,21 (24,80)	255 (187)	3,354 (4,564)
(ii) unloaded					
0	2390	1309	6,26 (7,32)	-	-
(iii) 50 % of the load defined in (i)					
42,8 (58,2)	2335	1279	13,56 (15,86)	317 (233)	2,698 (3,669)
(iv) maximum power					
94,9 (129,0)	2200	1205	23,87 (27,92)	252 (185)	3,399 (4,620)
(v) 25 % of the load defined in (i)					
21,6 (29,4)	2365	1296	10,10 (11,81)	468 (344)	1,829 (2,489)
(vi) 75 % of the load defined in (i)					
63,2 (85,9)	2305	1262	17,17 (20,08)	272 (200)	3,147 (4,277)

No load maximum engine speed: 2390 rev/min
Torque* at maximum power: 412 Nm (42 kpm)
Maximum torque*: 504 Nm (51,4 kpm) at 1600 rev/min
Mean atmospheric conditions: temperature: 21° C
pressure: 985 mbar (739 mm Hg)
relative humidity: 74 %
Maximum temperature: coolant: 84° C
engine oil: 109° C
fuel: 61° C
air intake: 26° C

* The torque is the equivalent crankshaft torque

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u. Geräte Wieselburg / Austria Protokoll Nr. 210/75	**Zapfwellenprüfung P.t.o.-test**	Steyr-Dieseltraktor Typ 1400a Mot. Typ STEYR WD 612.85

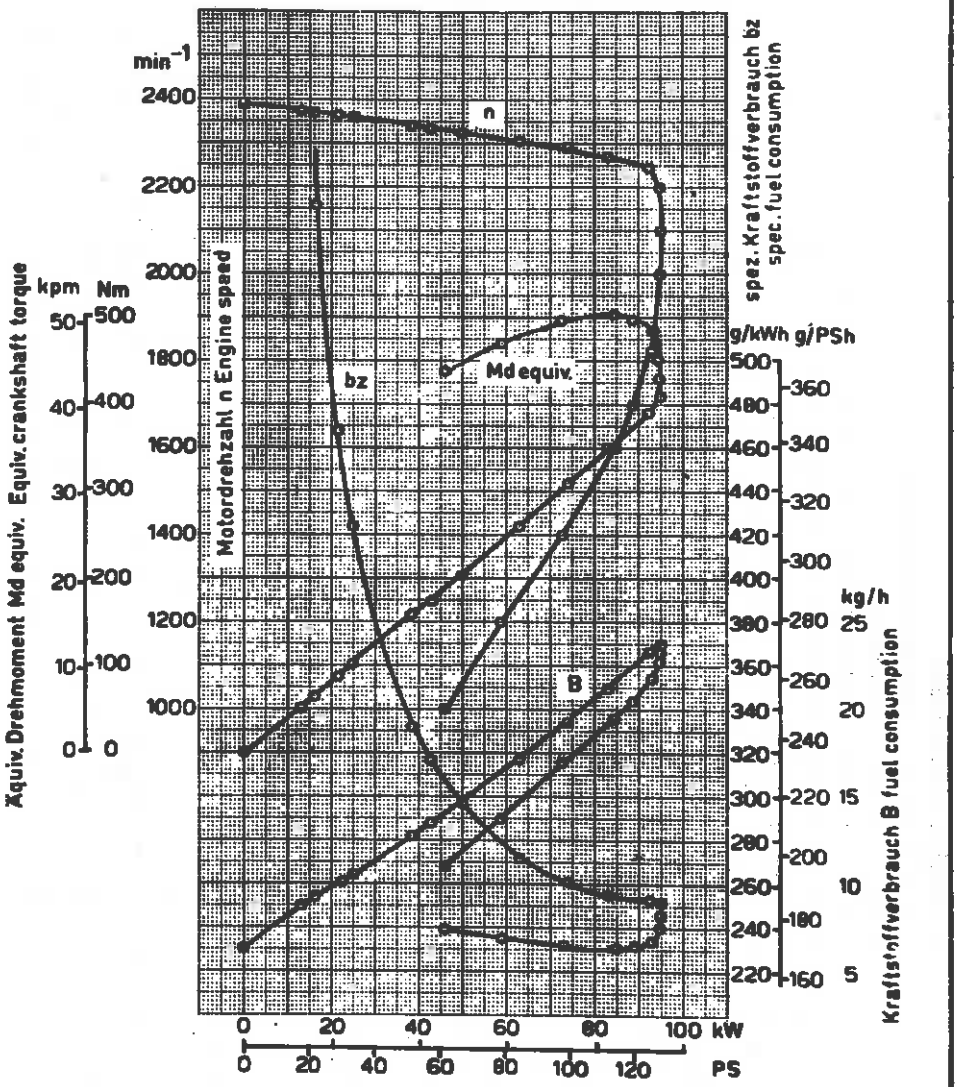


Motor Nr. 612.85-1001/01	Luftdruck: 985 mb	Kühltemp. 84°C	Versuchstag: 11.7.1975	Vers. Leitung
Fahrzeug Nr. 397.35-1648/01	Lufttemperatur: 21°C	Öltemperatur: 109°C	Versuchs Nr. 101/Za 93	
Kraftstoff: 0,855/15°C	Motoröl: Sh.R.SX 20W/40	Kraftstofftemp. 61°C	K. Blatt Nr. 1	

Bundesversuchs-u.Prufungsanst. f. landw. Maschinen u. Gerate Wieselburg / Austria Protokoll Nr. 210/75

Zapfwellenprüfung P.t.o.-test

Steyr-Dieseltraktor Typ 1400a
Mot. Typ STEYR WD 612.85



Motor Nr. 612.85-1001/01	Luftdruck: 995 mb	Kühltemp. 84°C	Versuchstag: 11.7.1975	Vers. Leitung
Fahrzeug Nr. 397.35-1648/01	Lufttemperatur: 21°C	Öltemperatur: 109°C	Versuchs Nr. 101/Za 93	
Kraftstoff: 0,855/15°C	Motoröl: Sh.R.SX 20W/40	Kraftstofftemp. 61°C	K.Blatt Nr. 2	

2. Drawbar performance

Date of tests: 1975 07 18 and 1975 07 25
Type of track: concrete
Height of drawbar above ground: 330 mm ballasted, 250 mm unballasted

Gear No.	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Fuel consumption		Temperatures			Atmosph. conditions		
						specific	specific	Fuel	Coo-lant	Engine Oil	Tempe-rature	rel.hu-midity	Pres-sure
	km/h	kW (PS)	N (kp)	rev/min	%	kWh/l (PSh/l)	g/kWh (g/PSh)	°C	°C	°C	°C	%	mbar (mmHg)
(i) Maximum power (ballasted)													
VL 1	2,950	62,76 (85,28)	76520 (7800)	2262	15,0	2,446 (3,324)	349 (257)	36	80	90	16	72	979 (735)
VL 2	4,138	78,95 (107,27)	68670 (7000)	2209	13,1	2,811 (3,820)	305 (224)	36	80	92	16	70	979 (735)
VM 1	5,023	82,15 (111,62)	58860 (6000)	2202	10,7	2,915 (3,961)	293 (216)	36	81	90	16	68	979 (735)
VL 3	5,966	83,28 (113,15)	50230 (5120)	2198	8,6	2,963 (4,026)	288 (212)	39	82	93	16	65	979 (735)
VM 2	7,422	83,56 (113,54)	40520 (4130)	2202	6,0	2,965 (4,029)	288 (212)	37	80	92	16	65	979 (735)
VL 4	8,674	83,24 (113,10)	34530 (3520)	2198	4,6	2,958 (4,019)	289 (213)	36	82	90	16	66	979 (735)
VM 3	10,536	81,85 (111,21)	27960 (2850)	2200	3,2	2,913 (3,958)	293 (216)	37	80	90	15	69	979 (735)
VS 1	11,950	79,80 (108,43)	24030 (2450)	2199	2,6	2,836 (3,854)	301 (222)	36	80	90	15	71	979 (735)

Gear No.	Speed	Power	Drawbar pull	Engine speed	Slip of wheels	Fuel consumption		Temperatures			Atmosph. conditions		
						specific	specific	Fuel	Coo-lant	Engine Oil	Tempe-rature	rel.hu-midity	Pres-sure
	km/h	kW (PS)	N (kp)	rev/min	%	kWh/l (PSh/l)	g/kWh (g/PSh)	°C	°C	°C	°C	%	mbar (mmHg)
(ii) Five-hour-test at 75 % of pull at maximum power													
VM 2	7, 769	65, 65 (89, 20)	30410 (3100)	2261	3, 9	2, 560 (3, 479)	334 (246)	54	82	105	20	54	981 (736)
(iii) Five-hour-test at pull corresponding to 15 % wheelslip in test (i)													
VL 1	2, 942	62, 56 (85, 01)	76580 (7800)	2272	15, 0	2, 520 (3, 425)	339 (250)	52	82	102	22	52	978 (734)
(iv) Maximum power (unballasted)													
VL 1	2, 972	43, 75 (59, 45)	52970 (5400)	2325	15, 0	-	-	46	80	95	26	60	981 (736)
VL 2	4, 114	60, 55 (82, 28)	52970 (5400)	2290	15, 0	-	-	44	80	95	26	65	981 (736)
VM 1	4, 817	70, 91 (96, 35)	52970 (5400)	2265	15, 0	-	-	42	80	95	24	70	981 (736)
VL 3	5, 586	76, 13 (103, 44)	49050 (5000)	2208	12, 6	2, 712 (3, 685)	315 (232)	44	82	96	22	72	981 (736)
VM 2	7, 120	77, 64 (105, 49)	39240 (4000)	2198	8, 0	2, 760 (3, 750)	310 (228)	46	82	98	22	74	981 (736)
VL 4	8, 415	77, 99 (105, 97)	33350 (3400)	2200	6, 0	2, 771 (3, 766)	308 (227)	46	80	100	22	76	981 (736)
VM 3	10, 237	77, 01 (104, 64)	27080 (2760)	2200	4, 0	2, 735 (3, 717)	312 (230)	44	80	97	22	78	981 (736)
VS 1	11, 654	74, 65 (101, 43)	23050 (2350)	2200	3, 1	2, 656 (3, 609)	322 (237)	40	80	94	21	76	981 (736)

Total oil consumption during 10 hours duration of tests (ii) and (iii): 57, 3 g/h

3. Turning space and turning circle

Wheel equipment front: Pneumatics 18, 4/15-26 AS, PR 8
rear: Pneumatics 18, 4/15-38 AS, PR 8

Track of wheels front: 1900 mm
rear: 1900 mm

Results	With brakes		Without brakes	
	right-hand	left-hand	right-hand	left-hand
	m	m	m	m
Radius of turning space	4, 80 5, 45 *	4, 90 5, 65 *	6, 50 6, 21 *	6, 70 6, 41 *
Radius of turning circle	4, 56 5, 21 *	4, 66 5, 41 *	6, 26 6, 00 *	6, 46 6, 20 *

* four-wheel-drive switched off

4. Location of centre of gravity

	mm
Height above ground	1025
Distance forward from the vertical plane containing the axis of the rear wheels	1260
Distance from the median plane, left-hand	15

5. Braking

Date of tests: 1975 06 26 and 1975 07 24
Type of track: concrete
Type of decelerometer: Moto-Meter Nr. 03382 (Kombi-Schreiber)
Weight of ballasted tractor: 82 140 N (8376 kp)

Cold brakes

		Ballasted	Without ballast
Travelling speed of the tractor	km/h	25	25
(i) Deceleration	m/s^2	7, 6	8, 5
(ii) Stopping distance	m	5	5, 8
(iii) Force exerted on the brake pedal	N (kp)	491 (50)	343 (35)
(iv) Force exerted on the brake pedal to achieve a deceleration of 2, 5 m/s^2	N (kp)	206 (21)	128 (13)

Brake fade characteristics (hot tests)

Deceleration hot / deceleration cold x 100 = 85,5 %
Stopping distance cold / stopping distance hot x 100 = 86,2 %
Force on pedal, cold / force on pedal, hot x 100 = 92,6 %

Efficiency of handbrake:
Satisfactory facing up and down slope of 16 %
Pull on handbrake: 177 N (18 kp)

6. Measurement of ambient noise

Date of tests: 1975 06 26
Type of sound level meter: 2203 BRÜEL & KJAER
Type of track: concrete

Results of tests:
Gear: VS 4
Travelling speed before acceleration: 24 km/h
Sound level: 87 dBA

7. Noise measurement at the driver's ear level

Date of tests: 1975 06 26
Type of sound level meter and octave filter: 2203 BRÜEL & KJAER
Type of track: concrete

Results of tests (tractor with safety cab):

Gear	Travelling speed	dBA	Sones
VM 2 *	7,01km/h nominal	86	-

* The gear tested corresponds to a travelling speed nearest to 7,25 km/h

8. Power lift and hydraulic pump performance

Date and location of tests: 1975 07 29, Wieselburg, Austria
Hydraulic fluid:
Make and type: ELAN-Austromatic HGN – SAE 80 Multipurpose oil
Viscosity: at 100° C = 9,8 mm^2/s (9,8 cst)
Typ of linkage lock for transport: hydraulically by throttle valve
Opening pressure of the cylinder over pressure relief valve (manufacturer specification): 24,5 MPa (250 kp/cm^2)

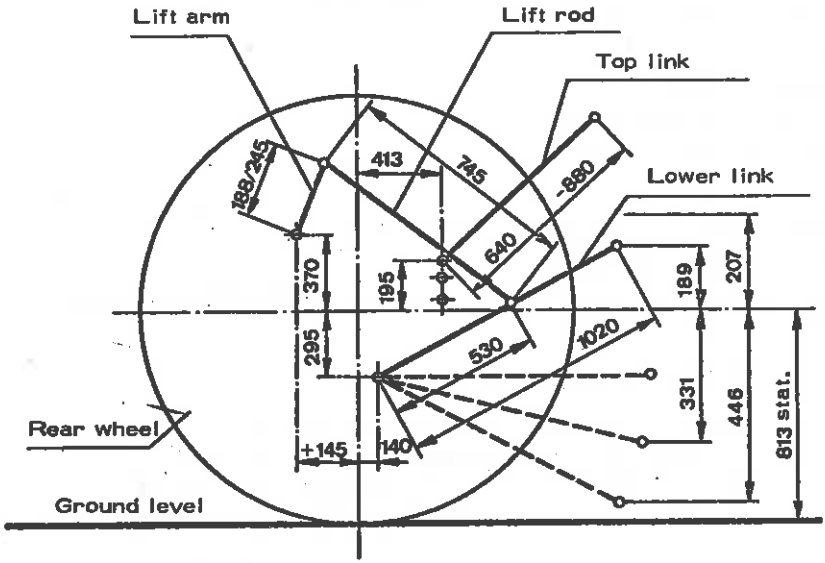
Pump characteristics:

(i) Opening pressure of the relief valve: 17,85 MPa (182 kp/cm^2)
sustained pressure by the open relief valve: 17,15 MPa (175 kp/cm^2)

(ii) Pump delivery rate at minimum pressure
and rated engine speed: 41 l/min

(iii) Pump delivery rate: 41 l/min
delivery pressure: 17,15 MPa (175 kp/cm^2)
power: 11,77 kW (16 PS)

Linkage Geometry



Linkage geometry when connected to the standard frame

		Maximum mechanical advantage		Minimum mechanical advantage	
Projected length in side view					
Lower links	mm	1020		1020	
Lift arms	mm	188		245	
Lift rods	mm	745		745	
Top link	mm	640 – 880		640 – 880	
Distance of lift rod connection point from pivot point of lower link	mm	530		530	
The following dimensions are given relative to the rear wheel centre line, situated 813 mm above the ground level					
Lower link pivot point	mm	140 behind	295 below	140 behind	295 below
Top link pivot point	mm	413 behind	195 above	413 behind	195 above
Lift arm pivot point	mm	145 behind	370 above	145 behind	370 above
Maximum und minimum height of lower link hitch points	mm	189 above	331 below	207 above	446 below
Height of lower link hitch points locked in transport position	mm	207 above	-	207 above	-

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivoting point mm		- 151	- 136	- 33	0	+ 60	150	230	330	430	484	502	517	542	
Lifting force at the hitch-points N (kp) (Values for the pressure at maximum hydraulic power, calculated from measurements made at maximum pressure)	max.mech. advantage			35810 (3650)	36790 (3750)	38260 (3900)	39980 (4075)	40710 (4150)	41200 (4200)	42670 (4350)	44150 (4500)				
	min. mech. advantage	27710 (2825)	28450 (2900)	30900 (3150)	31640 (3225)	32130 (3275)	32370 (3300)	32370 (3300)	32370 (3300)	33110 (3375)	33850 (3450)	34340 (3500)			
	Maximum force exerted throughout whole range: 35810 N (3650 kp) / 27710 N (2825 kp)														
	Oil pressure: 17, 15 MPa (175 kp/cm^2)														
Lifting force at the frame N (kp) (Values for the pressure at maximum hydraulic power, calculated from measurements made at maximum pressure)	max.mech. advantage			35220 (3590)	36200 (3690)	36940 (3765)	37420 (3815)	36940 (3765)	35710 (3640)	33990 (3465)	33010 (3365)	32770 (3340)	32520 (3315)		
	min. mech. advantage		30070 (3065)	31780 (3240)	32030 (3265)	32030 (3265)	31540 (3215)	30560 (3115)	28840 (2940)	26880 (2740)	25650 (2615)	25160 (2565)	24920 (2540)	24180 (2465)	
	Maximum force exerted throughout whole range: 32520 N (3315 kp) / 24180 N (2465 kp)														
	Oil pressure: 17, 15 MPa (175 kp/cm^2)														

OPTIONAL TEST

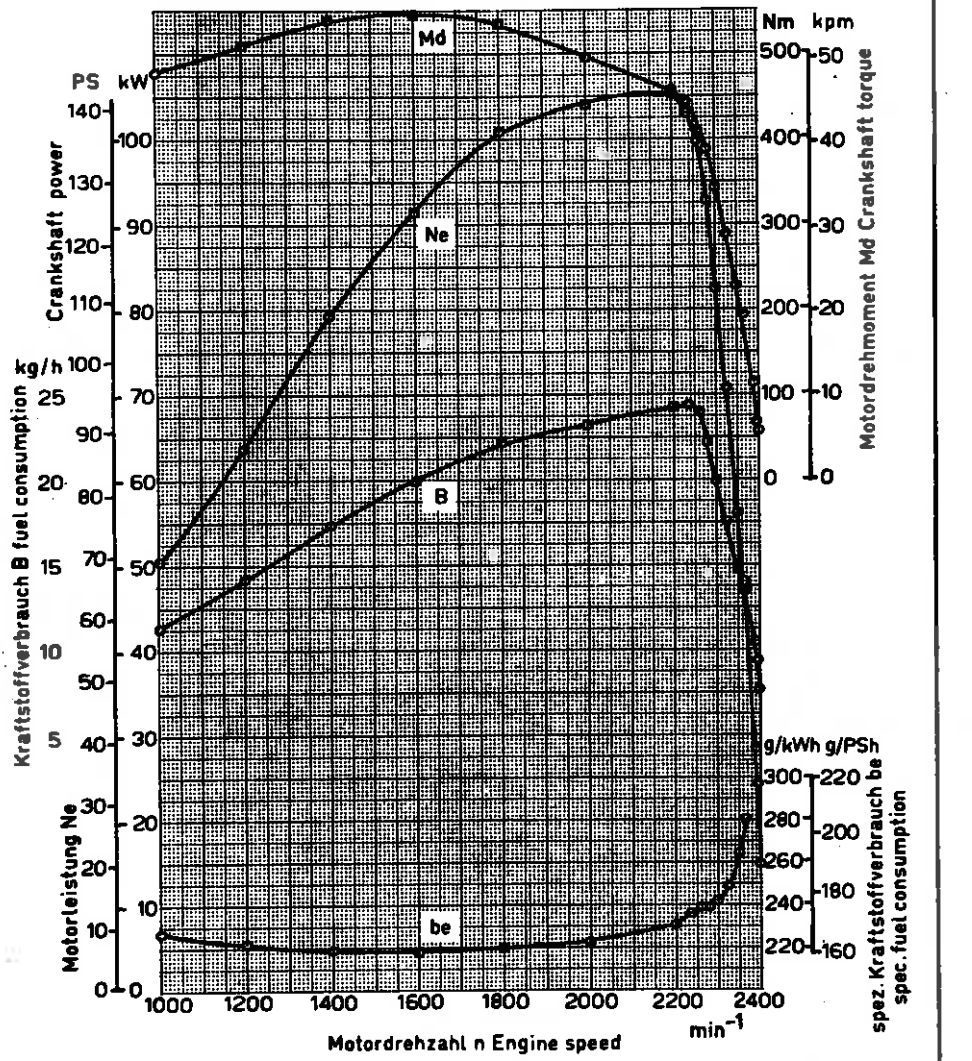
9. Engine performance

Date and location of test: 1975 08 07, Steyr, Austria
Type of dynamometer: SCHENK-brake U 1-25

Power	Engine speed	Fuel consumption		
		total	specific	specific
kW(PS)	rev/min	kg/h (l/h)	g/kWh(g/PSh)	kWh/l(PSh/l)
Maximum power - 2 hours test				
105, 25 (143,0)	2200	24, 30 (28, 42)	231 (170)	3, 703 (5, 031)
Standard p. t. o. speed (1000 rev/min)				
101, 60 (138, 0)	1825	22, 35 (26, 14)	220 (162)	3, 886 (5, 279)
The speed recommended by the manufacturer for drawbar work				
105, 25 (143, 0)	2200	24, 30 (28, 42)	231 (170)	3, 703 (5, 031)
Part loads				
(i) 85 % of torque at maximum power				
92, 74 (126, 0)	2280	22, 18 (25, 94)	239 (176)	3, 575 (4, 857)
(ii) unloaded				
0	2410	6, 00 (7, 01)	-	-
(iii) 50 % of the load defined in (i)				
48, 00 (65, 2)	2365	13, 43 (15, 70)	280 (206)	3, 057 (4, 152)
(iv) maximum power				
105, 25 (143, 0)	2200	24, 30 (28, 42)	231 (170)	3, 703 (5, 031)
(v) 25 % of the load defined in (i)				
24, 30 (33, 0)	2395	9, 34 (10, 92)	384 (283)	2, 225 (3, 022)
(vi) 75 % of the load defined in (i)				
70, 80 (96, 2)	2325	17, 60 (20, 58)	249 (183)	3, 440 (4, 674)

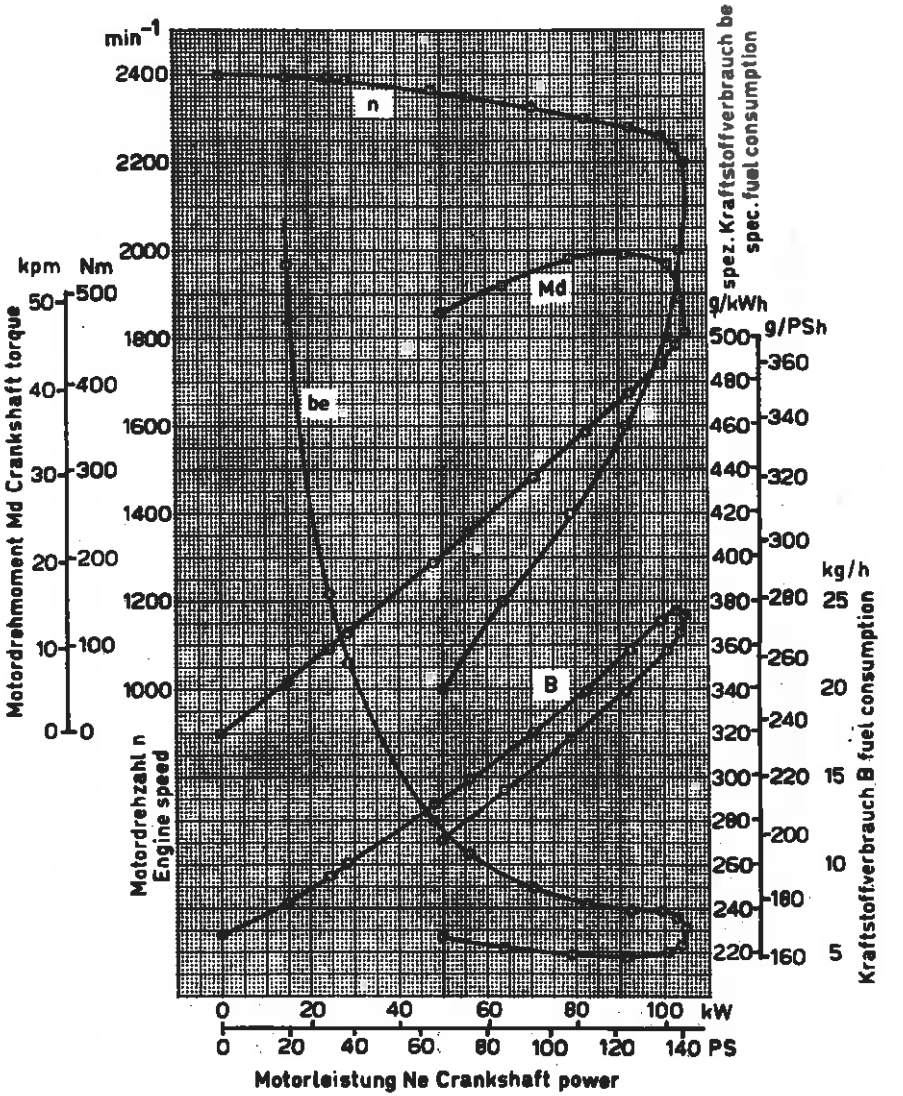
Optimum fuel consumption: 212 g/kWh (156 g/PSh) - see page 22
No load maximum engine speed: 2410 rev/min
Torque at maximum power: 456 Nm (46, 5 kpm)
Maximum torque: 546 Nm (55, 65 kpm) at 1600 rev/min
Mean atmospheric conditions: temperature: 21°C
pressure: 978 mbar (734 mm Hg)
relative humidity: 62 %
Maximum temperatures:
coolant: 82°C
engine oil: 100°C
fuel: 59°C
engine air intake: 26°C

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u.Geräte Wieselburg / Austria Protokoll Nr. 210/75	**Motorprüfung Engine–test**	Steyr – Dieseltraktor Typ 1400a Mot. Typ STEYR WD 612.85



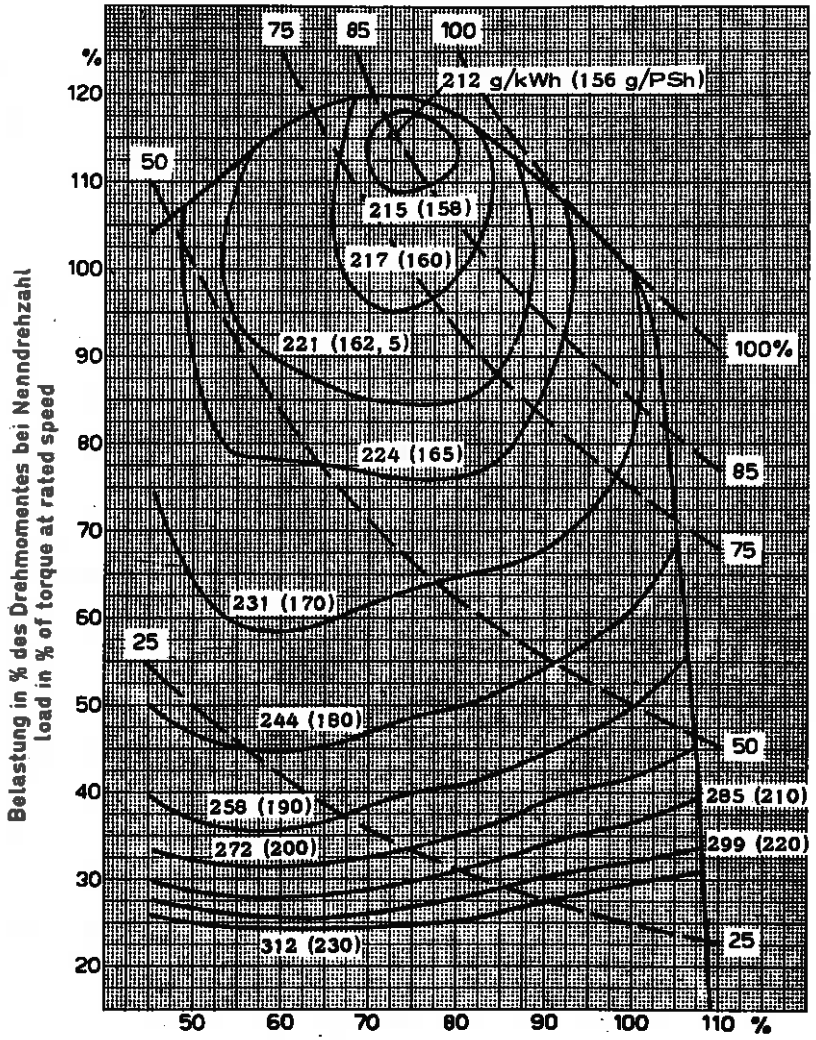
Motor Nr. 612.85–1001/01	Luftdruck: 978 mb	Kühltemp. 82°C	Versuchstag: 8.1975	Vers. Leitung	
Fahrzeug Nr. 397.35–1648/01	Lufttemperatur: 21°C	Öltemperatur: 100°C	Versuchs Nr. 101/M151		
Kraftstoff: 0,855/15°C	Motoröl: Sh.R.SX 20W/40	Kraftstofftemp. 59°C	K.Blatt Nr. 3		

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u. Geräte Wieselburg / Austria Protokoll Nr. 210/75	**Motorprüfung Engine-test**	Steyr-Dieseltraktor Typ 1400a Mot. Typ STEYR WD 612.85



Motor Nr. 612.85-1001/01	Luftdruck: 978 mb	Kühltemp. 82°C	Versuchstag: 8.1975	Vers. Leitung
Fahrzeug Nr. 397.35-1648/01	Lufttemperatur: 21°C	Öltemperatur: 100°C	Versuchs Nr. 101/M151	
Kraftstoff: 0,855/15°C	Motoröl: Sh.R.SX 20W/40	Kraftstofftemp. 59°C	K.Blatt Nr. 4	

Bundesversuchs-u.Prüfungsanst. f. landw. Maschinen u.Geräte Wieselburg / Austria Protokoll Nr. 210/75	**Motorkennfeld** Engine performance characteristics	Steyr – Dieseltraktor Typ 1400a Mot. Typ STEYR WD 612.85



Motor Nr. 612.85-1001/01	Luftdruck: 978 mb	Kühltemp. 82°C	Versuchstag: 8.1975	Vers. Leitung
Fahrzeug Nr. 397.35-1648/01	Lufttemperatur: 21°C	Öltemperatur: 100°C	Versuchs Nr. 101/M 151	
Kraftstoff: 0,855/15°C	Motoröl: Sh.R.SX 20W/40	Kraftstofftemp. 59°C	K.Blatt Nr. 5	