T.C
TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI
TEST MERKEZİ MÜDÜRLÜĞÜ

TEST REPORT

REPORT NUMBER:937/2217 TGK.14

OECD APPROVAL NO: 2/2 179
DATE OF APPROVAL : 22 OCTOBER 2004

Report on test in accordance with the OECD Standard Code 2 for the Official Testing of Agricultural Tractors Performance

CODE 2
(Restricted code)



NEW HOLLAND TD60D – 2 WD
(12+12 speeds-30 km/h)



CASE IH JX60 – 2 WD
(CASE IH JX55 for North America)
(12+12 speeds-30 km/h)

Tested Equipment
TRACTOR
Make : NEW HOLLAND
Model : TD60D
Type : 2 WD

Applicant
Name: Türk Traktör ve Ziraat Mak.A.Ş.
Adress: Güvercin yolu 111-112 06560 Gazi/ANKARA
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SEPTEMBER - 2004
ANKARA

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This is a report on a tractor tested in accordance with OECD standard code for the official Testing of Agricultural Tractor Performance, it doesn't contain an evaluation of the tractor on field activities.

UNITS

Forces	1 kN	= 1000 N	= 102 kp
Powers	1 kW	= 1.36 HP	
Pressures	1 MPa	= 10 bar	= 10.2 kp/cm^2
	100 kPa	= 1000 mbar	= 750.1 mmHg

New Holland TD60D (2WD) and Case IH JX60 (2WD) tractors have same specification but they have different colour, bonnet, rim colour, grill, headlights, grill support and model (trade name).
All tests were carried out on New Holland TD60D (2 WD).

Note:
[C] data declared by the manufacturer and controlled by the station
[D] data declared by the manufacturer

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[C]	Tractor Manufacturer's name and address	:TÜRK TRAKTÖR ve ZIRAAT MAKINALARI A.Ş. Güvercin yolu 111-112 Gazi/ANKARA Tel:+90 312 211 01 90
[D]	Location of tractor assembly	:TÜRK TRAKTÖR ve ZIRAAT MAKINALARI A.Ş.
[D]	Submitted for test by	:TÜRK TRAKTÖR ve ZIRAAT MAKINALARI A.Ş.
[C]	Selected for test by	: TÜRK TRAKTÖR ve ZIRAAT MAKINALARI A.Ş. with agreement of the Testing Station
[C]	Place of running – in	:DAEMTC (The Directorate of Agricultural Equipment and Machinery Testing Centre)
[C]	Duration of running-in	: 15 hours
[C]	Location of test	:DAEMTC, Ankara

1. SPECIFICATIONS OF TRACTOR

1.1 IDENTIFICATION

1.1.1.	Make of the tractor	: NEW HOLLAND
[C]	Model (trade name)	: TD60D
[C]	Type	: 2 WD
1.1.2.	Serial No	
[D]	First Serial No or Prototype	: Prototype
[C]	Serial No	: Prototype
1.1.3.	Other Specifications;	
[D]	Model (s) for other countries	: sold as CASE IH JX55 in North America
[C]	Transmission Type or Gears x Ranges	: Mechanical, full synchromesh, 12 forward 12 reverse
[C]	Speed version	: 30 km/h
[C]	Manufacturer identification or Technical type number	: D1R2AA (for New Holland TD60D) J6R2AA (for Case IH JX60) J6R2AA (for Case IH JX55)

1.2 ENGINE

[C]	Make, Model and Type	:IVECO, 8035.050, water cooled, direct injection, 4 cycles diesel engine
[C]	Serial No.	: *639-999075*
1.2.1	**Cylinders**	
[C]	Number/disposition	: 3, vertical in line
[D]	Bore/stroke	: (104 /115) mm
[D]	Capacity	: 2931 cm^3
[D]	Compression rate	: (18±0.5) /1
[D]	Arrangement of valves	: Overhead
[D]	Cylinder liners	: Dry
1.2.2	**Supercharging**	:None
1.2.3	**Fuel System**	
[C]	Fuel feed system	: With double diaphragm, mechanical
[C]	Make, type and model of fuel filter (s)	: New Holland, 98439682, replaceable paper element cartridge
[D]	Capacity of fuel tank	: 90 dm^3
[C,D]	Make, model and type of injection pump	: BOSCH, L976 (or BOSCH, VE 3/12F, 1250LV15602), rotative
[C]	Serial no	: 628202

Manufacturer's production setting of injection pump

[C]	Flow rate*	: (11.0 –11.7) dm^3/h at rated engine speed and full load
[D]	Timing	: 4°± 0.5° before T.D.C
[D]	Make, model and type of injectors	: BOSCH, KBEL 83S 35,
[D]	Injection pressure	: 26.0 MPa

*not any setting by the manufacturer because of atmospheric pressure

1.2.4 Governor

[C]	Make, model and type	: BOSCH, hydraulic, in corporated in the fuel pump
[C]	Governed range of engine speed:	(650 – 2800) rev/min
[C]	Rated engine speed	: 2500 rev/min

1.2.5 Air cleaner

Pre-cleaner

[C]	Make, model and type	: CNH, 1930587, replaceable paper cartrige
[C]	Location of air intake	: In front of radiator, under bonnet

Main cleaner

[C]	Make, model and type	: CNH, 1930588, replaceable felt material
[C]	Maintenance indicator	:Yes, warning light on the dashboard

1.2.6 Lubrication system

[D]	Type of feed pump	: Gear type
[D]	Type of filter(s)	: One is metal mesh strainer, the other is replaceable paper cartridge
[C]	Number of filters	: 2

1.2.7 Cooling system

[C]	Type of coolant	: Water
[D]	Type of pump	: Centrifugal
	Specification of fan	
[C]	Number of fan blades	: 4
[C]	Fan diameter	: 392 mm
[D]	Coolant capacity	: 12 dm^3
[C]	Type of temperature control	: Thermostat and thermometer indicating temperature level on dashboard
[D]	Superpressure system	: 150 kPa

1.2.8 Starting system

[C]	Make, model and type	: BOSCH, 0 001 223 504, solenoid engaged
[D]	Starter motor power rating	: 2.5 kW
[C]	Cold starting aid	: Flame glow plug and additional fuel system in air intake manifold
[C]	Safety device	: Clutch safety switch

1.2.9 Electrical system

[C]	Voltage	: 12 V
	Generator	
[C]	Make,model and type	: MAGNETI MARELLI, RTT 115 AC, alternator
[D]	Power	: 1.0 kW
	Battery of accumulators	
[C]	Number	: 1
[D]	Rating	: 105 Ah at 20 h

1.2.10 Exhaust system

[C,D]	Make, model and type	: ALCOM 5172849, (or BİLEN 5093950) under the bonnet with expansion chamber
[C]	Location	: On left hand side of engine, vertical (or on left hand side of engine, horizontal)

1.3 TRANSMISSION

1.3.1 Clutch (travel and power take-off)

[D]	Make, model and type	: NEW HOLLAND, LUK, dry, dual clutch
[D]	Number of plates	: 2
[D]	Diameter of plates	: 280 mm
[C]	Method of operation	: Mechanical; pedal operated for main clutch and hand lever for PTO clutch

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1.3.2 Gear box

[D] Make, model and type : NEW HOLLAND, mechanical, full syncromesh

Description :

		Forward	Reverse
[C]	Number of gears	4	4
[C]	Number of ranges/groups	3/-	3/-
[C]	Total of arrangements	12	12

Available options :

[D] 12x4

[D] 20x12 with creeper

1.3.3 Rear axle and final drives

[D] Make, model and type : CNH, with reducter

Differantial lock

[D] Type : Mechanical

[C] Method of engagement : Pedal operated

[C] Method of disengagement : Self disengaged

1.3.4 Front axle

[D] Make, model and type : CNH, teleskopic U-type

[C] Differantial lock : None

[C] **1.3.5 Total ratios & travelling speed (tested tractor)**

Gear no	Group or range	Number of engine revolutions for one revolution of the driving wheels		Nominal travelling speed (*) at rated engine speed of 2500 rev/min km/h	
		Forward	Reverse	Forward	Reverse
1	I Slow	366.666	365.569	1.71	1.71
2		237.980	237.269	2.63	2.64
3		175.000	174.476	3.58	3.59
4		122.163	121.798	5.13	5.15
1	II Normal	156.987	156.518	3.99	4.00
2		101.891	101.586	6.15	6.17
3		74.926	74.702	8.37	8.39
4		52.304	52.148	11.98	12.02
1	III Fast	66.682	66.483	9.40	9.43
2		43.279	43.150	14.48	14.52
3		31.826	31.730	19.69	19.75
4		22.217	22.150	28.21	28.30

* Calculated with a tyre dynamic index of 665 mm (ISO 4251/1-1998)

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[D] 1.3.6 Total ratios & travelling speed (Optional)

Gear no	Group or range	Number of engine revolutions for one revolution of the driving wheels		Nominal travelling speed (*) at rated engine speed of 2500 rev/min km/h	
		Forward	Reverse	Forward	Reverse
1	I Slow	366.666	-	1.71	-
2		237.980	-	2.63	-
3		175.000	-	3.58	-
4		122.163	-	5.13	-
1	II Normal	156.987	156.518	3.99	4.00
2		101.891	101.586	6.15	6.17
3		74.926	74.702	8.37	8.39
4		52.304	52.148	11.98	12.02
1	III Fast	66.682	-	9.40	-
2		43.279	-	14.48	-
3		31.826	-	19.69	-
4		22.217	-	28.21	-

*Calculated with a tyre dynamic index of 665 mm (ISO 4251/1-1998)

[D] 1.3.7 Total ratios & travelling speed (Optional)

Gear no	Group or range	Number of engine revolutions for one revolution of the driving wheels		Nominal travelling speed (*) at rated engine speed of 2500 rev/min km/h	
		Forward	Reverse	Forward	Reverse
1	I Creeper	2025.282	-	0.31	-
2		1314.486	-	0.48	-
3		966.612	-	0.64	-
4		674.769	-	0.93	-
1	II Creeper	867.121	-	0.72	-
2		562.795	-	1.11	-
3		413.853	-	1.51	-
4		288.901	-	2.17	-
1	I Slow	366.666	365.569	1.71	1.71
2		237.980	237.269	2.63	2.64
3		175.000	174.476	3.58	3.59
4		122.163	121.798	5.13	5.15
1	II Normal	156.987	156.518	3.99	4.00
2		101.891	101.586	6.15	6.17
3		74.926	74.702	8.37	8.39
4		52.304	52.148	11.98	12.02
1	III Fast	66.682	66.483	9.40	9.43
2		43.279	43.150	14.48	14.53
3		31.826	31.730	19.69	19.75
4		22.217	22.150	28.21	28.30

*Calculated with a tyre dynamic index of 665 mm (ISO 4251/1-1998)

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1.4 POWER TAKE-OFF

1.4.1 Main power take-off

[C]	Type	: Independent
[C]	Method of engagement	: Mechanical, by hand lever
[C]	Number of shafts	: 1
[D]	Method of changing power take-off shaft ends and speeds	:Hand lever and changing PTO shaft

1.4.1.1 Power take-off proportional to engine speed

540 rev/min

[C]	Location	: At rear of tractor
[C]	Diameter of power take-off shaft end	: 34.9 mm
[C]	Number of splines	: 6, in conformity with ISO 500:1991
[C]	Height above ground	: 644 mm
[C]	Distance from the median plane of the tractor	: 0 mm
[C]	Distance behind rear-wheel axis	: 335 mm
[C]	P.T.O speed at rated engine speed	: 614 rev/min
[C]	Engine speed at standard power take-off speed	: 2200 rev/min
[C]	Ratio of rotation speeds (engine speed/p.t.o speed)	: 4.074/1
[D]	Power restriction and maximum torque	: None
[D]	Maximum torque transmissible	: None
[C]	Direction of rotation (viewed from behind tractor)	: Clockwise

750 rev/min (not fitted on tested tractor)

[D]	Location	: At rear of tractor
[D]	Diameter of power take-off shaft end	: 34.9 mm
[D]	Number of splines	:6
[D]	Height above ground	: 644 mm
[D]	Distance from the median plane of the tractor	: 0 mm
[D]	Distance behind rear-wheel axis	: 335 mm
[D]	P.T.O speed at rated engine speed	: 787 rev/min
[D]	Engine speed at standard power take-off speed	: 2382 rev/min
[D]	Ratio of rotation speeds (engine speed/p.t.o speed)	: 3.176/1
[D]	Power restriction and maximum torque	: None
[D]	Maximum torque transmissible	: None
[D]	Direction of rotation (viewed from behind tractor)	: Clockwise

1000 rev/min (not fitted on tested tractor)

[D]	Location	: At rear of tractor
[D]	Diameter of power take-off shaft end	: 34.9 mm
[D]	Number of splines	:6, not in conformity with ISO 500:1991
[D]	Height above ground	: 644 mm
[D]	Distance from the median plane of the tractor	: 0 mm
[D]	Distance behind rear-wheel axis	: 335 mm
[D]	P.T.O speed at rated engine speed	: 1050 rev/min
[D]	Engine speed at standard power take-off speed	: 2381 rev/min

[D]	Ratio of rotation speeds (engine speed/p.t.o speed)	: 2.381/1
[D]	Power restriction and maximum torque	: None
[D]	Maximum torque transmissible	: None
[D]	Direction of rotation (viewed from behind tractor)	: Clockwise

1.4.1.2 Power take-off proportional to ground speed (not fitted on tested tractor)

		540	750	1000
[D]	Travelling distance for 1 revolution of take-off shaft	: 0.510 m	0.398 m	0.296 m
[D]	Number of power take-off shaft revolutions for one revolution of (rear) driving wheels	: 8.2	10.5	14.1
[D]	Direction of ratation with forward gear engaged (viewed from behind tractor)	: Clockwise		

1.4.2 Optional power take-off : None

1.5 HYDRAULIC POWER LIFT

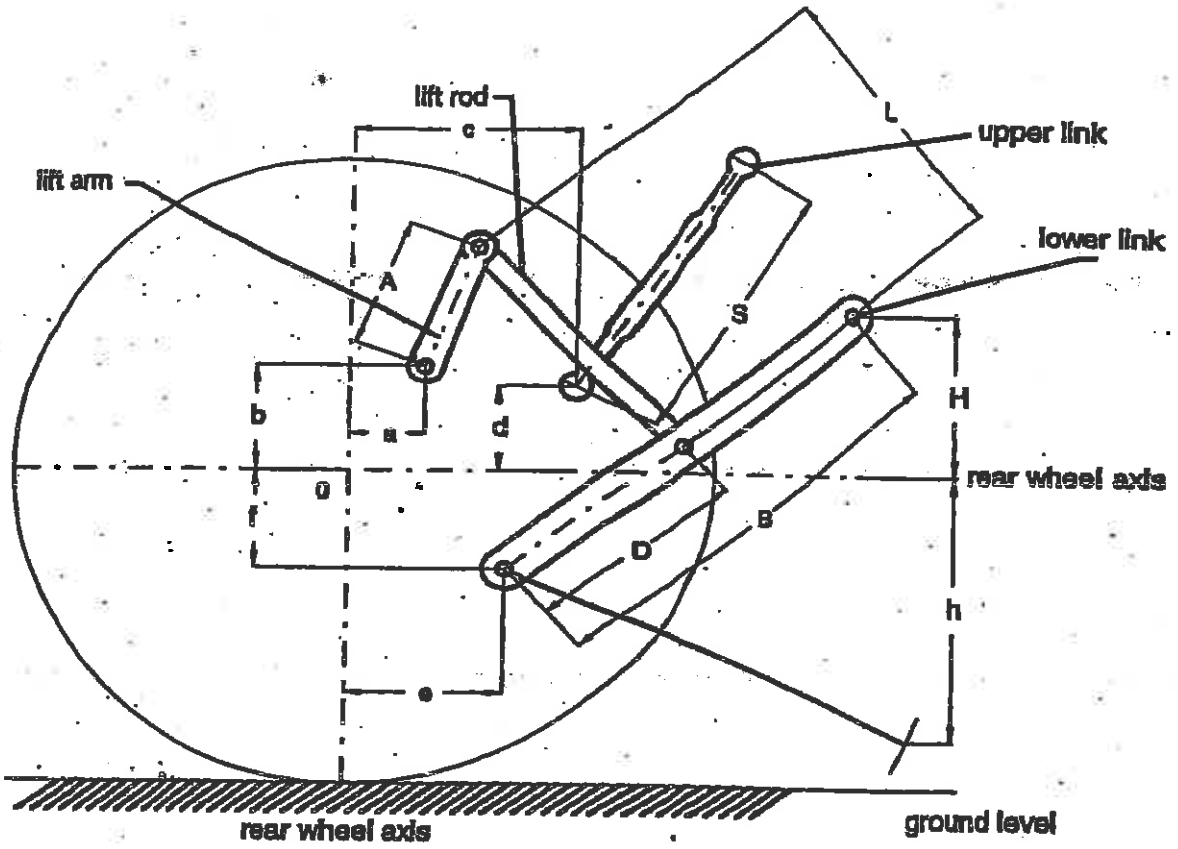
[C]	Make, model and type	: NEW HOLLAND, Lift-O-matic, draft and float controlled
[C]	Type of hydraulic system	: Open center system
[C]	Type and number of cylinders	: 1, single acting
[C]	Type of linkage lock for transport	: Hydraulic
[D]	Relief valve pressure setting	: (19.4-19.9) MPa
[D]	Opening pressure of cylinder safety valve	: (23.4 - 24.5) MPa
[D]	Lift pump type	: Gear
[D]	Transmission between pump and engine	: Mechanical
[C]	Type and number of filters	: 1, replaceable cartridge element
[C]	Site of oil reservoir	: Gear box and rear axle
[C]	Type, number and location of tapping points	: At rear of tractor, 2, single acting
[C]	Maximum volume of oil available to external cylinders	: None

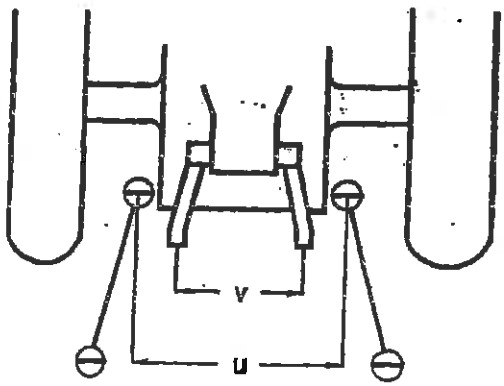
1.6 Three- point linkage

[C]	Category	: I and II, ISO 730-1:1994 + Corrigendum 1:1995
[C]	Category adapter	: Yes

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Rear Linkage geometry





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TABLE 2.1. Dimensions of linkage geometry (when connected to the standard frame)

		Dimension or range (mm)	Settings used in test (mm)
[C] Length of lift arms	(A)	255	255
[C] Length of lower links	(B)	915	915
Distance of lift arm pivot point from rear wheel axis			
- [C] Horizontally	(a)	5	5
- [C] Vertically	(b)	300	300
[C] Horizontal distance between the two lower link points	(u)	503	503
[C] Horizontal distance between the two lift arm end points	(v)	500	500
[C] Length of upper link	(S)	from593 to 964	780
Distance of upper link pivot point from rear wheel axis			
- [C] horizontally	(c)	193/206	193
- [C] vertically	(d)	190/240	190
Distance of lower link pivot point from rear wheel axis			
- [C] horizontally	(e)	68	68
- [C] vertically	(f)	208	208
[C] Distance of lower link pivot points to lift rod pivot points on lower links	(D)	435/580	435
[C] Length of lift rods	(L)	from 465 to 615	580
Height of lower hitch points relative to the rear wheel axis			
- [C] in low position	(h)	from 208 to 600	485
- [C] in high position	(H)	from 155 to 420	240
[C] Height above ground of lower hitch points when locked in transport position (*)	Any height within lift range		
[C] (*)Assuming r = 665 mm tire dynamic radius index ISO 4251/ 1-1998			

1.7 SWINGING DRAWBAR

[C]	Type	: Clevis
	Height above ground;	
[C]	Maximum	: 425 mm
[C]	Minimum	: 318 mm
[C]	Type of adjustment	: Reversing
[C]	Distance of hitch point from rear – wheel axis horizontally	: 765 mm
[C]	Distance of hitch point from p.t.o shaft ends	
	Vertically	: 219/326 mm
	Horizontally	: 428 mm
	Lateral adjustment (center of clevis)	
[C]	Right-hand	: 98 mm
[C]	Left-hand	: 102 mm
[C]	Distance of pivot point from rear-wheel axis horizontally	: 133 mm
[C]	Diameter drawbar pin hole	: 29 mm
[D]	Maximum vertical permissible load	: None

1.8 TRAILER HITCH

[C]	Type	: Coupling
[C]	Hole diameter	: 29 mm
[C]	Height above ground	: 907 mm
[C]	Distance of hitch point from rear – wheel axis, horizontally	: 535 mm
	Distance of hitch point from PTO shaft end	
[C]	Vertically	: 263 mm
[C]	Horizontally	: 200 mm
[D]	Maximum vertical permissible load	: None

1.9 HOLED DRAWBAR : None

1.10 STEERING

[D] Make, model and type : DANFOSS, OSPC ON 100, hydrostatic

Method of operation

[D] Pump(s) : Gear pump

[D] Ram(s) : 1, Double acting, actuated on front axle

[D] Working pressure : 10.0 MPa

1.11 BRAKES

1.11.1 Service brake

[D] Make, model and type : NEW HOLLAND, mechanical, oil immersed disc

[C] Method of operation : Mechanical, pedal operated

[C] Trailer braking take-off : None

1.11.2 Parking brake

[C] Type :Mechanical, common with servise brake

[C] Method of operation :By hand lever operated

1.12. WHEELS

Number

[C] Front : 2/steering

[C] Rear : 2/driving

[C] Wheelbase : 2175 mm

Track width adjustment

		Minumum mm	Maximum mm	Adjustment method
[D]	Front	1422	1822	extending of front axle
[D]	Rear	1424	1924	reversing wheels and off-set lug rims

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1.13 PROTECTIVE STRUCTURE

[C]	Make, model and type	: CNH, GR 7,Roll-bar (New Holland, TD-KÇ-2)
[C]	Manufacturer's name and address	: Türk Traktör Ziraat Mak. A.Ş. Güvercin yolu No:111-112 Gazi/ANKARA
	Protective device	
[C]	Cab / frame / roll guard / other	: Roll-bar
[C]	Tiltable / not tiltable	: Not tiltable
	OECD approval	
[C]	Approval number	: 4/0 762/1
[C]	Date of approval	: 10/05/2004

[D] Nos. of minor modification of certificates, if any: None

1.14 SEAT

1.14.1 Driver's seat

[C]	Make, model and type	: PİLOT, T300, vinylex covered
[C]	Seat and steering wheel reversible	: No
[C]	Type of suspension	: Mechanical, with spring
[C]	Type of damping	: Hydraulic, with amortisor
	Range of adjustment	
[C]	Longitudinally	:150 mm
[C]	Vertically	: 65 mm
[C]	Safety belt	: None

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1.14.2. Optional driver's seat(s)

1.14.2.1

[D] Make, model and type : PİLOT, SM80X, vinylex covered

[D] Type of suspension : Mechanical, with spring

[D] Type of damping : Hydraulic, with amortisor

Range of adjustment

[D] Longitudinally :150 mm

[D] Vertically : 65 mm

1.14.2.2

[D] Make, model and type : PILOT, T300A, vinylex covered

[D] Type of suspension : Mechanical, with spring

[D] Type of damping : Hydraulic, with amortisor

Range of adjustment

[D] Longitudinally :150 mm

[D] Vertically : 65 mm

1.14.3 Passenger seat : None

1.15 LIGHTING

		Height above ground of center mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
[C]	Headlights	1180	90x40	200
[C]	Sidelights	1545	75x70	765
[C]	Rearlights	1545	75x70	655
[C]	Reflectors	1545	75x40	695

2. TEST CONDITIONS

2.1 OVERALL DIMENSIONS (unballasted tractor)

Length mm	Width		Height at top of	
	minimum mm	maximum mm	Protective structure mm	exhaust pipe mm
3630	1799	2299	2580	2465

2.2 GROUND CLEARANCE (unballasted tractor)

Clearance – limiting part :275 mm (bottom point of swinging drawbar)

2.3 TRACTOR MASS (with roll-bar)

	Unballasted	
	Without driver kg	with driver kg
Front	836	845
Rear	1730	1796
Total	2566	2641

2.4 TRACK SPECIFICATION: Not applicable

2.5 TYRES AND TRACK WIDTH SPECIFICATIONS

	Front	Rear
Tyres :	LASSA	GOOD YEAR
Dimensions	7.50-16 SL	14.9R30
Ply rating	6	129 A8
Type	Diagonal	Radial
Maximum load (tyre manufacturer's)	7.35 kN	18.14 kN
Maximum load (tractor manufacturer's)	7.35 kN	18.14 kN
Inflation pressure (tyre manufacturer's)	280 kPa	160 kPa
Dynamic radius index	376 mm	665 mm
Chosen track width	1422 mm	1424 mm

2.6 FUEL

Type : Diesel oil, in conformity with national standard, TS 3082

Density at 15 °C : 0.827 g/cm^3

2.7 OILS AND LUBRICATION

2.7.1 Capacity and change interval

	Capacity dm^3	Oil change h	Filter Change h
Engine	7.3	200	400
Gear box*	46	1600	400
Final drive (rear) *			
Hydraulic system *			
Steering	1.8	-	800

* Common with gear box

2.7.2 Specifications

	Recommended	Used during test
Engine oil Type Viscocity Classification	BP TERRAC DIESEL 20W/50 DM/12	Same
Hydraulic Fluid Type Viscocity Classification	BP TERRAC TRACTAN 8 Fluid 8 DT/14	Same
Transmission oils Type Viscocity Classification	BP TERRAC TRACTAN 8 Fluid 8 DT/14	Same
Steering Type Viscocity Classification	BP TERRAC TRACTAN 8 Fluid 8 DT/14	Same

2.7.3 Grease : MOBILUX EP2
Number of lubrication points : 9

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3. COMPULSORY TEST RESULTS

3.1 MAIN POWER TAKE-OFF

Date and location of tests : 12-17/08/2004, D.A.E.M.T.C,Ankara

Type of dynamometer bench : AEG, Electrical

Power	Speed		Fuel consumption			Specific energy
	Engine	PTO	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kWh/ l
3.1.1. MAXIMUM POWER- TWO HOUR TEST						
35.4	2500	614	9.24	11.17	261	3.17
3.1.2. Power at rated engine speed						
35.4	2500	614	9.24	11.17	261	3.17
3.1.3. Standard Power Take-off speed (540 ± 10 rev/min)						
33.7	2200	540	8.81	10.65	261	3.17
3.1.4. PART LOADS						
3.1.4.1.The torque corresponding to maximum power at rated engine speed						
35.4	2500	614	9.24	11.17	261	3.17
3.1.4.2. 85% of torque obtained in 3.1.4.1.						
32.7	2717	667	8.53	10.32	261	3.17
3.1.4.3. 75% of torque defined in 3.1.4.2.						
24.8	2743	673	7.48	9.05	302	2.74
3.1.4.4. 50% of torque defined in 3.1.4.2.						
16.6	2764	679	5.67	6.86	341	2.42
3.1.4.5. 25% of torque defined in 3.1.4.2.						
8.3	2778	682	4.25	5.14	510	1.62
3.1.4.6. No load						
0	2803	688	2.85	3.45	-	-

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Power	Speed		Fuel consumption			Specific energy
	Engine	PTO	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
3.1.5.PART LOADS AT STANDARD POWER TAKE-OFF SPEED (540 ±10 rev/min)						
3.1.5.1. The torque corresponding to maximum power						
33.7	2200	540	8.81	10.65	261	3.17
3.1.5.2. 85% of torque obtained in 3.1.5.1.						
30.8	2365	581	7.86	9.51	255	3.24
3.1.5.3. 75% of torque defined in 3.1.5.2.						
23.7	2424	595	6.48	7.84	274	3.02
3.1.5.4. 50% of torque defined in 3.1.5.2.						
16.0	2451	602	4.86	5.88	304	2.72
3.1.5.5. 25% of torque defined in 3.1.5.2.						
8.1	2475	607	3.48	4.21	432	1.92
3.1.5.6. No load						
0	2521	619	2.32	2.81	-	-

Maximum engine speed at no load : 2803 rev/min

Torque at maximum power(equivalent crankshaft)
- At rated engine speed : 135.26 Nm
- At 2-hour test : 135.26 Nm

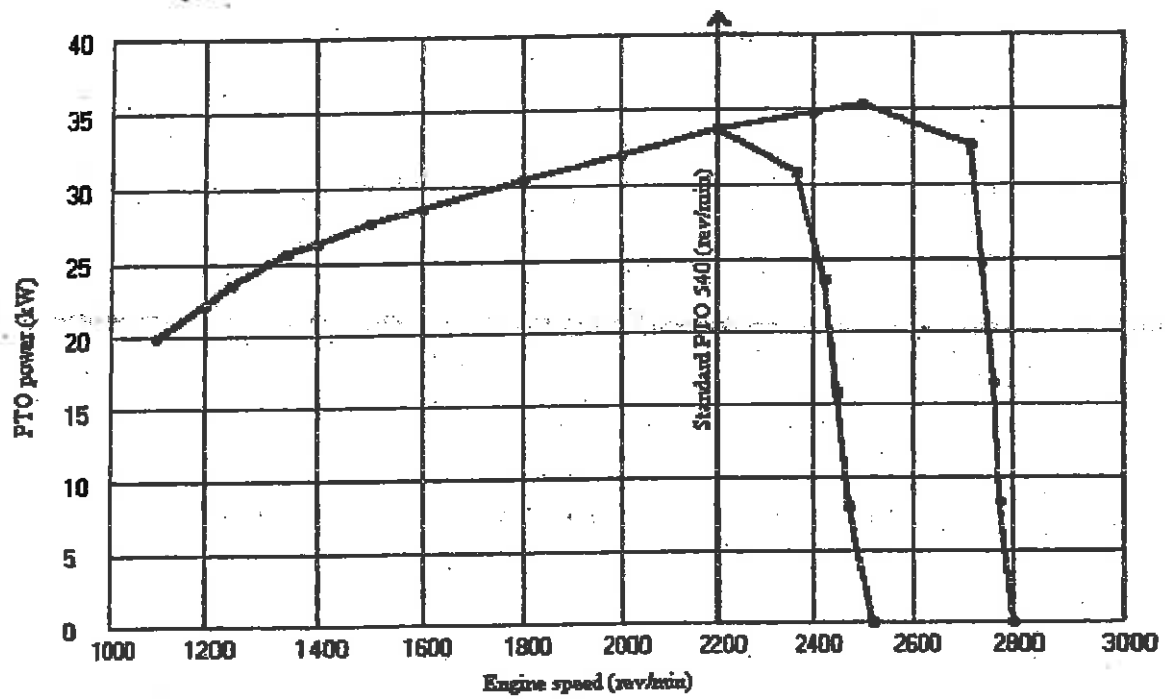
Maximum torque : 181.24 Nm (1350 rev/min engine speed)

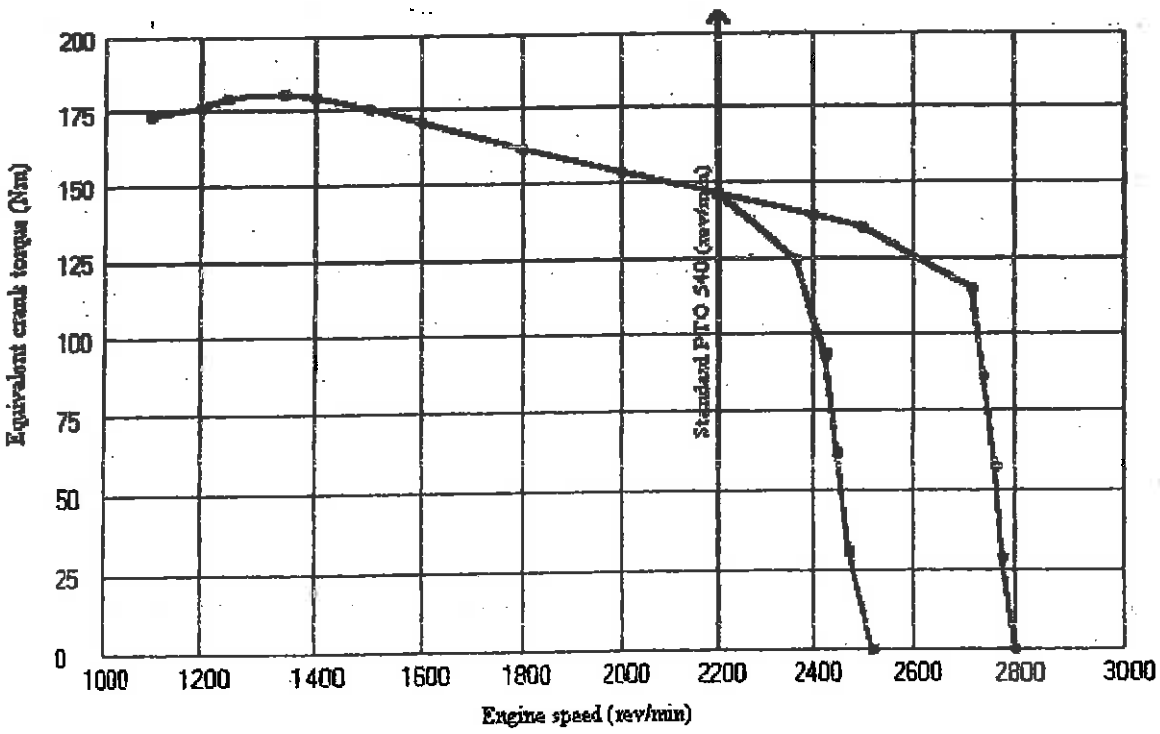
Mean atmospheric conditions
- Temperature : 29 °C
- Pressure : 90.9 kPa
- Relative humidity : 40%

Maximum temperatures (°C)
- Cooling water : 86
- Engine oil : 123
- Fuel : 53
- Engine air intake : 34

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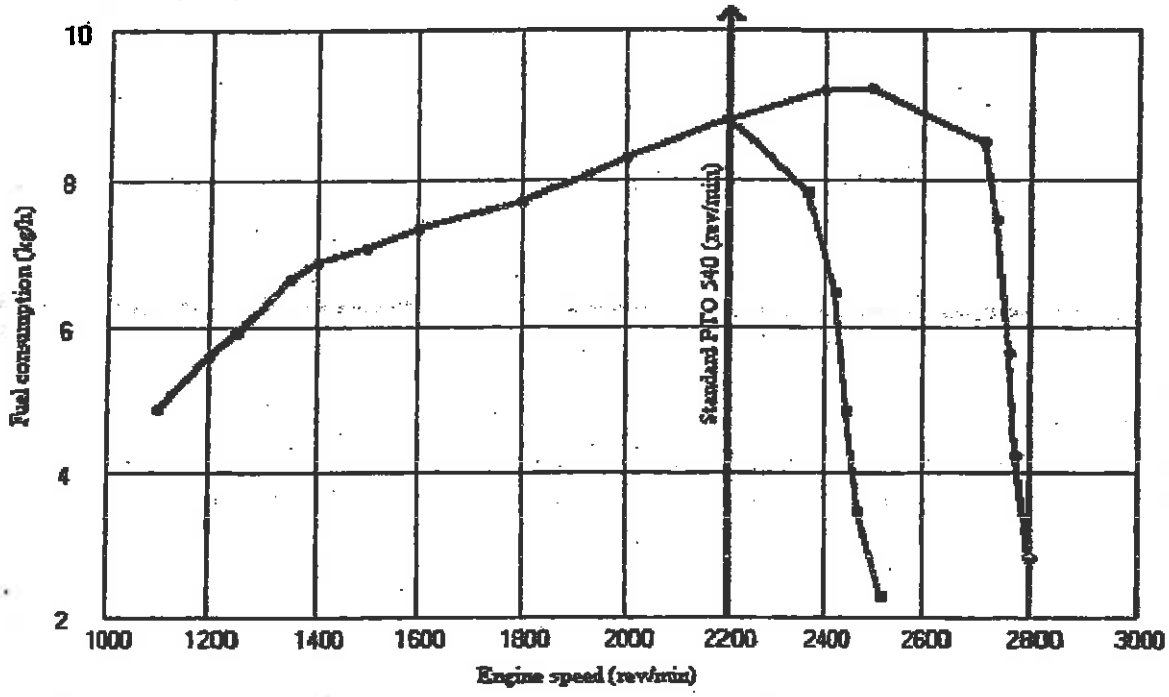
PTO POWER

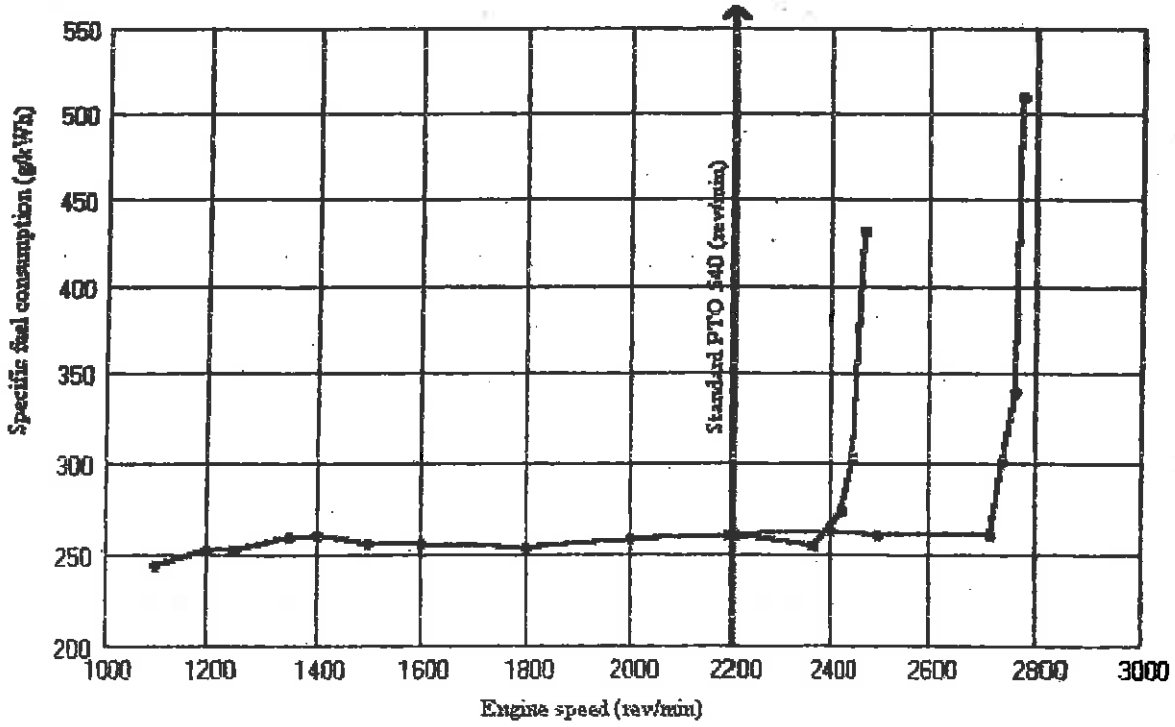




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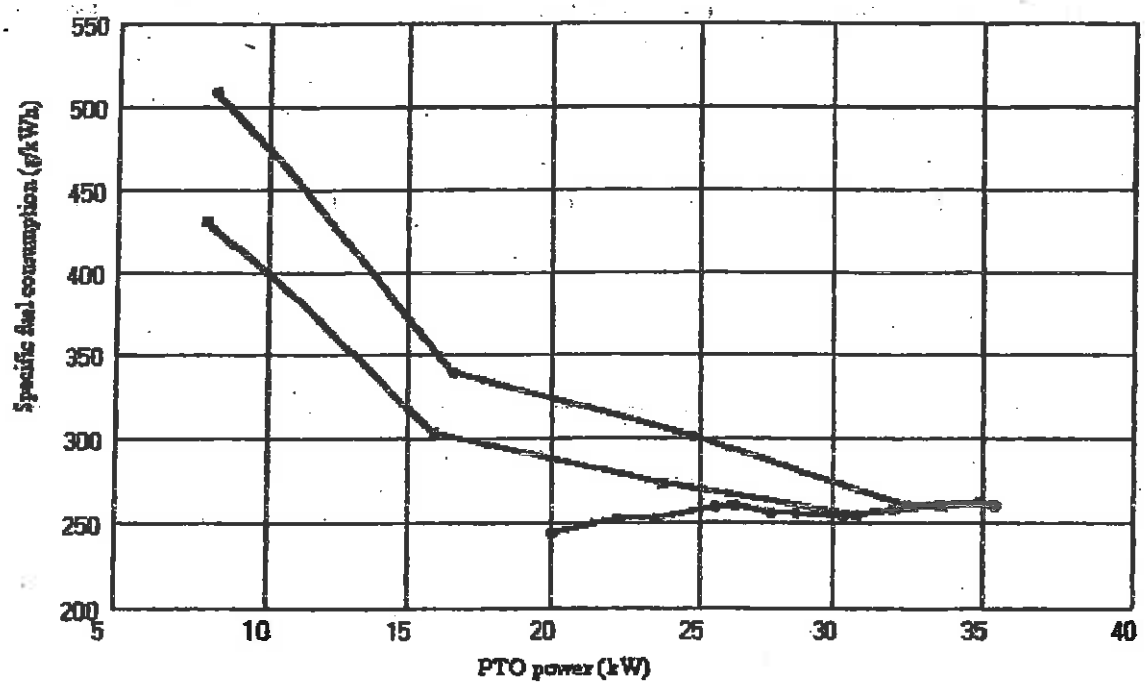
PTO POWER





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3.2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests :01-02/09/2004

3.2.1 Hydraulic power test

3.2.1.1 Hydrolic fluid data

Hydrolic fluid type : TERRAC TRACTAN 8
Viscosity index, ISO 3448 + Cor. 1:1993 : 95
Viscosity at 65 °C : Not declared

3.2.1.2 Compulsory Reporting (Test results) *

	Pressure[4]	Reservoir oil Temperature°C (65 °C target)		Engine speed	Flow rate	Power
	MPa	Min	Max	rev/min	L/min	kW
Rated Engine Speed (Manufacturer Specification)	-	-	-	2500	-	-
3.2.1.2.1 Maximum (sustained) pressure with relief valve open as measured at the coupler Pump stalled: No	(2) 21.0	60	70	2754	-	-
3.2.1.2.2 Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power	(2) 18.9	(3) 69		2762	29.9	9.4
3.2.1.2.3 Maximum avaible flow and maximum power from one coupler pair [1]	(2) 17.0	(3) 66		2766	43.0	12.2
3.2.1.2.4 Maksimum flow rate at minimum pressure	(2) 1.0	(3) 60		2803	44.9	-

Note1:Calculated maximum power is based on only the coupler outlet pressure (pressure near coupler where oil is exiting from tractor) and does take not into account the return coupler pressure.
Note 2:Record pressure as measured at the outlet coupler (pressure near coupler where oil is exiting from tractor).
Note 3:Average test temperature.
Note 4: See ISO 789-10:1996 for the specific location of the pressure measurements and other referenced terms.

3.2.2 Power lift test

Linkage settings for test: see 12-13 pages

		At the hitch point	On the frame
Height of lower hitch point above ground in down position	mm	180	95
Vertical movement With lifting force Without lifting force	 mm mm	 675 725	 870 955
Maximum corrected force exerted through full range	kN	27.6	17.8
Corresponding pressure of hydraulic fluid	MPa	18.9	18.9
Moment about rear wheel axis	kNm	27.3	28.5
Maximum tilt angle of mast from vertical	Degrees	-	15°

Lifting heights relative to the horizontal lower links												
mm	-355	-290	-200	-100	0	+100	+200	+300	+385	+400	+500	+515
Lifting forces at the hitch point: Corresponding pressure:18.9 MPa												
kN*	-	27.9	28.7	29.0	28.8	28.7	28.5	28.8	27.6	-	-	-
Lifting forces at the frame: Corresponding pressure: 18.9 MPa												
kN*	23.0	23.3	23.2	22.9	22.3	21.7	21.0	20.5	-	19.8	19.2	17.8

*The values of force measured shall be corrected to correspond to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting of the hydraulic lift system.

3.3 DRAWBAR POWER AND FUEL CONSUMPTION (unballasted tractor)

Date of tests :06/09/2004

Type of track : Concrete

Height of drawbar above ground	Tyre inflation pressure	
	Front	Rear
325 mm	270 kPa	140 kPa

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Gear and range	Power	Drawbar pull	Speed	Engine speed	Slip of wheel	Specific fuel consump.	Specific energy	Temperature			Atmospheric conditions		
no	kW	kN	km/h	rev/min	%	g/ kWh	kWh / l	Fuel °C	Coolant °C	Engine Oil °C	Temperature °C	Relative humidity %	Pressure kPa
3.3.1. MAXIMUM POWER IN TESTED GEARS (Unballasted tractor)													
I-1	7.8	17.66	1.60	2728	15.0	685	1.21	47	67	87	22	44	91.9
I-2	11.6	17.18	2.44	2704	15.0	535	1.55	47	67	87	22	44	91.9
I-3	15.3	16.75	3.29	2685	15.0	477	1.74	47	67	89	22	44	91.9
II-1	17.6	17.31	3.65	2670	15.0	439	1.89	47	67	89	22	44	91.9
I-4	21.7	16.86	4.63	2634	15.0	420	1.97	48	67	89	22	44	91.9
II-2	24.0	16.13	5.35	2500	13.6	394	2.10	48	67	89	22	44	91.9
II-3	25.1	11.86	7.61	2500	9.6	377	2.20	51	67	90	22	44	91.9
III-1	26.3	10.83	8.73	2501	7.8	361	2.30	51	67	97	22	44	91.9
II-4	25.7	8.19	11.31	2501	6.3	368	2.25	51	67	97	22	44	91.9
III-2	25.2	6.54	13.86	2504	5.1	374	2.21	51	67	97	22	44	91.9
3.3.2.FUEL CONSUMPTION													
3.3.2.1. In selected gear, at maximum power at rated speed													
III-1	26.3	10.83	8.73	2501	7.8	361	2.30	47	67	91	22	42	92.0
3.3.2.1.1. 75 % of pull at maximum power at rated speed													
III-1	21.5	8.12	9.51	2674	6.0	396	2.09	47	67	91	22	42	92.0
3.3.2.1.2. 50 % of pull at maximum power at rated speed													
III-1	14.9	5.42	9.88	2723	4.1	487	1.77	47	67	91	22	42	92.0
3.3.2.1.3. Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.1.													
II-4	21.5	8.17	9.46	2085	6.0	333	2.49	47	67	91	22	42	92.0
3.3.2.1.4. Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.2.													
II-4	14.9	5.44	9.86	2130	4.1	376	2.20	47	67	91	22	42	92.0
3.3.2.2. In selected gear nearest to 7.5 km/h at rated speed													
II-3	25.1	11.86	7.61	2500	9.6	377	2.20	51	65	91	24	42	92.0
3.3.2.2.1. 75 % of pull at maximum power at rated speed													
II-3	20.9	8.90	8.46	2688	6.6	402	2.06	51	65	91	24	42	92.0
3.3.2.2.2. 50 % of pull at maximum power at rated speed													
II-3	14.5	5.93	8.78	2729	4.5	476	1.74	51	65	91	24	42	92.0
3.3.2.2.3. Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.1.													
III-1	20.9	8.87	8.48	2398	6.6	363	2.28	51	65	91	24	42	92.0
3.3.2.2.4. Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.2.													
III-1	14.5	5.93	8.79	2431	4.5	414	2.00	51	65	91	24	42	92.0

4.OPTIONAL TESTS : None

5. REPAIRS : Fuel pump was changed.

6. REMARKS : Atmospheric pressure 90.9 kPa, 91.9 kPa and 92.0 kPa less than 96.6 kPa fixed in the OECD code.

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Agricultural Engineer

Kerim EKMEKCİ
Departmant Chief

Hüseyin YAŞAR
Chairman of Test Commission

This test report has been prepared and undersigned as 28 pages

Aşır NADAR
Assistant Director

Signatures that belong to members of test commission above have been approved **10/09/2004**

Dr. Hamdi TAŞBAŞ
Director