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

TEST REPORT

REPORT NUMBER:1379/2250 TGK.13

OECD APPROVAL NO: 2/2 192
DATE OF APPROVAL : 17 NOVEMBER 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 TD90D – 4 WD
(12+12 speeds-40 km/h)

CASE IH JX90 – 4 WD
(CASE IH JX85 for North America)
(12+12 speeds-40 km/h)

Tested Equipment
TRACTOR
Make : CASE IH
Model : JX90
Type : 4 WD

Applicant
Name: Türk Traktör ve Ziraat Mak.A.Ş.
Adress: Güvercin yolu 111-112 06560 Gazi/ANKARA
Tel: +90 312 2110190(Pbx)

This test report may be copied only in full, partial copying is allowed only with written permission from TAMTEST.

SEPTEMBER - 2004
ANKARA

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

TABLE OF CONTENTS

1. SPECIFICATIONS OF TRACTOR ..... 3 to 17

2. TEST CONDITIONS .....18 to 19

3. COMPULSORY TEST RESULTS
3.1 Main power take-off .....20 to 24

3.2 Hydraulic power and lifting force .....25 to 26

3.3 Drawbar power and fuel consumption (unballasted tractor) .....26 to 27

4. OPTIONAL TEST RESULT..... 27

5. REPAIRS 27

6. REMARKS 27

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 TD90D (4WD) and Case IH JX90 (4WD) 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 Case IH JX90 (4 WD).

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

[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	: 30 hours
[C]	Location of test	:DAEMTC, Ankara

1. SPECIFICATIONS OF TRACTOR

1.1 IDENTIFICATION

1.1.1.	Make of the tractor	: CASE IH
[C]	Model (trade name)	: JX90
[C]	Type	: 4 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 JX85 in North America
[C]	Transmission Type or Gears x Ranges	: Mechanical, full synchromesh, 12 forward 12 reverse
[C]	Speed version	: 40 km/h
[C]	Manufacturer identification or Technical type number	: J9R7AB (for Case IH JX90) : D4R7AB (for New Holland TD90D) J9R7AB (for Case IH JX85)

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

1.2 ENGINE

[C]	Make, Model and Type	:IVECO, 8045.25, water cooled, direct injection, 4 cycles, turbo charged, diesel engine
[C]	Serial No.	: *639-928622*

1.2.1 Cylinders

[C]	Number/disposition	: 4, vertical in line
[D]	Bore/stroke	: (104 /115) mm
[D]	Capacity	: 3908 cm^3
[D]	Compression rate	: (18±0.5) /1
[D]	Arrangement of valves	: Overhead
[D]	Cylinder liners	: Dry

1.2.2 Supercharging

[C,D]	Make,model and type	: TD04H (or GARRETT, TA25)
[D]	Pressure	: 80 kPa

1.2.3 Fuel System

[C]	Fuel feed system	: With double diaphragm, mechanical
[C]	Make, type and model of fuel filter (s)	: CASE IH, replaceable paper element cartridge
[D]	Capacity of fuel tank	: 90 dm^3
[C,D]	Make, model and type of injection pump	: BOSCH, VE 4/12F1250LV15645 (or BOSCH, L982), rotative
[C]	Serial no	: 101316

Manufacturer's production setting of injection pump

[C]	Flow rate*	: (16.3 –17.5) dm^3/h at rated engine speed and full load
[D]	Timing	: 1°± 0.5° before T.D.C

*not any setting by the manufacturer because of atmospheric pressure.

[D]	Make, model and type of injectors	: BOSCH, DLLA 132 S,multipoints injected
[D]	Injection pressure	: (26.0 ±1.2) MPa

1.2.4 Governor

[C]	Make, model and type	: BOSCH, mechanical, in corporated in the fuel pump
[C]	Governed range of engine speed	: (650 – 2750) rev/min
[C]	Rated engine speed	: 2500 rev/min

1.2.5 Air cleaner

Pre-cleaner

[C]	Make, model and type	: CNH, 1930589, 1327 05C (P), replaceable paper cartridge
[C]	Location of air intake	: In front of radiator, under bonnet

Main cleaner

[C]	Make, model and type	: CNH, 1930590, 1327 03C (P), replaceable felt material
[C]	Maintenance indicator	: 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	: 6
[C]	Fan diameter	: 450 mm
[D]	Coolant capacity	: 14 dm^3
[C]	Type of temperature control	: Thermostat and thermometer indicating temperature level on dashboard
[D]	Superpressure system	: 70 kPa

1.2.8 Starting system

[C]	Make, model and type	: BOSCH, 6 033 ACO 218, solenoid engaged
[D]	Starter motor power rating	: 3.5 kW
[C]	Cold starting aid	: Flame glow plug and additional fuel system in injection pump
[C]	Safety device	: Clutch safety switch

1.2.9 Electrical system

[C]	Voltage	: 12 V
	Generator	
[C]	Make,model and type	: MAGNETI MARELLI, RTT 119 AC, alternator
[D]	Power	: 1.0 kW
	Battery of accumulators	
[C]	Number	: 1
[D]	Rating	: 120 Ah at 20 h

1.2.10 Exhaust system

[C,D]	Make, model and type	: BİLEN 5093950, (or ALCOM 5172649) 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	: VALEO, dual clutch, dry, cerametallic material
[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

1.3.2 Gear box

[D] Make, model and type : CNH, 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 and/or steering movement

1.3.4 Front axle

[D] Make, model and type : New Holland , B 120503 Z 3, 5158372

[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	324.193	330.756	2.09	2.05
2		210.414	214.673	3.22	3.16
3		154.728	157.861	4.39	4.30
4		108.012	110.199	6.28	6.16
1	II Normal	138.803	141.612	4.89	4.79
2		90.088	91.912	7.53	7.38
3		66.247	67.588	10.24	10.04
4		46.245	47.181	14.67	14.38
1	III Fast	58.958	60.151	11.51	11.28
2		38.266	39.041	17.73	17.38
3		28.139	28.709	24.12	23.64
4		19.643	20.041	34.55	33.86

* Calculated with a tyre dynamic index of 720 mm (ISO 4251/1-1998)
Number of revolutions of front wheels for one revolutions of rear wheels:1.333

REPORT NUMBER:1379/2250-TGK.13

[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	324.193	-	2.09	-
2		210.414	-	3.22	-
3		154.728	-	4.39	-
4		108.012	-	6.28	-
1	II Normal	138.803	156.907	4.89	4.32
2		90.088	101.839	7.53	6.66
3		66.247	74.888	10.24	9.06
4		46.245	52.277	14.67	12.98
1	III Fast	58.958	-	11.51	-
2		38.266	-	17.73	-
3		28.139	-	24.12	-
4		19.643	-	34.55	-

*Calculated with a tyre dynamic index of 720 mm (ISO 4251/1-1998)
Number of revolutions of front wheels for one revolutions of rear wheels:1.333

[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	1790.681	-	0.38	-
2		1162.221	-	0.58	-
3		854.643	-	0.79	-
4		596.607	-	1.14	-
1	II Creeper	766.677	-	0.89	-
2		497.603	-	1.36	-
3		365.914	-	1.85	-
4		255.436	-	2.66	-
1	I Slow	324.193	341.256	2.09	1.99
2		210.414	221.488	3.22	3.06
3		154.728	162.872	4.39	4.17
4		108.012	113.697	6.28	5.97
1	II Normal	138.803	146.108	4.89	4.64
2		90.088	94.830	7.53	7.16
3		66.247	69.733	10.24	9.73
4		46.245	48.679	14.67	13.94
1	III Fast	58.958	62.061	11.51	10.93
2		38.266	40.280	17.73	16.85
3		28.139	29.620	24.12	22.91
4		19.640	20.680	34.55	32.82

*Calculated with a tyre dynamic index of 720 mm (ISO 4251/1-1998)
Number of revolutions of front wheels for one revolutions of rear wheels:1.333

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	: 725 mm
[C]	Distance from the median plane of the tractor	: 0 mm
[C]	Distance behind rear-wheel axis	: 310 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	: 725 mm
[D]	Distance from the median plane of the tractor	: 0 mm
[D]	Distance behind rear-wheel axis	: 310 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	: 725 mm
[D]	Distance from the median plane of the tractor	: 0 mm
[D]	Distance behind rear-wheel axis	: 310 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 (rear)

		540	[D] 750*	[D] 1000*
[C]	Travelling distance for 1 revolution of take-off shaft	: 0.624 m	0.483 m	0.365 m
[C]	Number of power take-off shaft revolutions for one revolution of (rear) driving wheels	: 7.3	9.4	12.4
[C]	Direction of ratation with forward gear engaged (viewed from behind tractor)	: Clockwise		

* Not fitted on tested tractor.

1.4.2 Optional power take-off : None

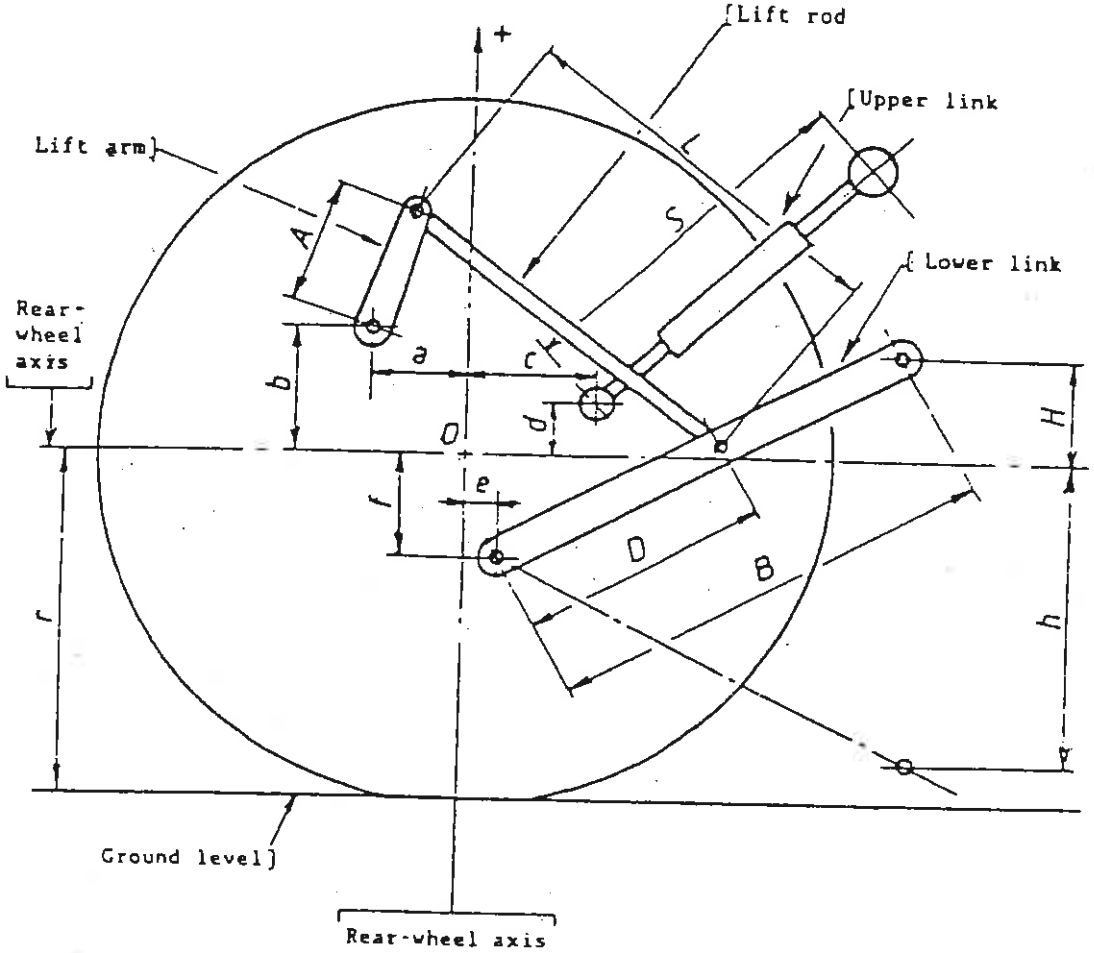
1.5 HYDRAULIC POWER LIFT

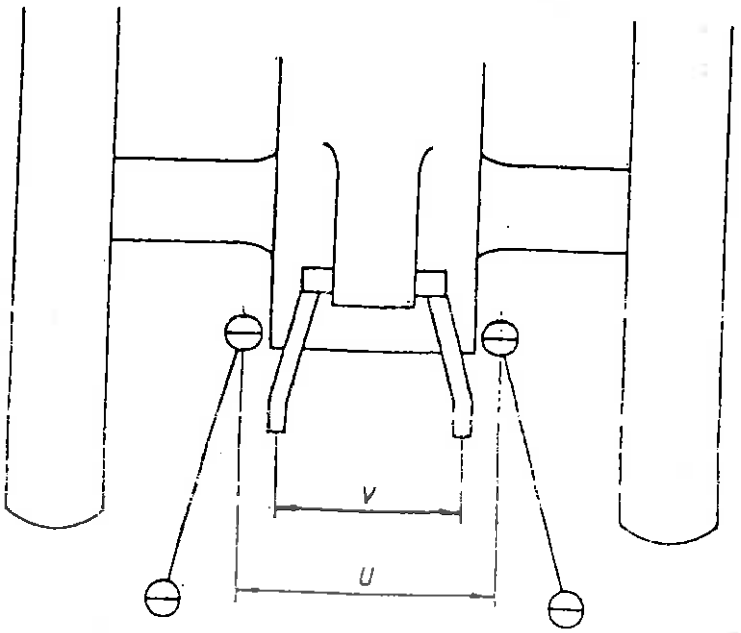
[C]	Make, model and type	: CNH, Lift-O-matic, draft and float controlled
[C]	Type of hydraulic system	: Open center system
[C]	Type and number of cylinders	: 1, single acting
[C]	Type of linkage lock for transport	: Hydraulic
[D]	Relief valve pressure setting	: (19.4-19.9) MPa
[D]	Opening pressure of 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, double acting
[C]	Maximum volume of oil available to external cylinders	: None

1.6 Three- point linkage

[C]	Category	: II, ISO 730-1:1994 + Corrigendum 1:1995
[C]	Category adapter	: None

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr





TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

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)	970	970
Distance of lift arm pivot point from rear wheel axis			
- [C] Horizontally	(a)	-11	-11
- [C] Vertically	(b)	295	295
[C] Horizontal distance between the two lower link points	(u)	450	450
[C] Horizontal distance between the two lift arm end points	(v)	505	505
[C] Length of upper link	(S)	from605 to1000	835
Distance of upper link pivot point from rear wheel axis			
- [C] horizontally	(c)	175/190	175
- [C] vertically	(d)	200/250	200
Distance of lower link pivot point from rear wheel axis			
- [C] horizontally	(e)	55	55
- [C] vertically	(f)	200	200
[C] Distance of lower link pivot points to lift rod pivot points on lower links	(D)	460/540	460
[C] Length of lift rods	(L)	from 515 to 650	605
Height of lower hitch points relative to the rear wheel axis			
- [C] in low position	(h)	from 190 to 690	520
- [C] in high position	(H)	from 115 to 455	220
[C] Height above ground of lower hitch points when locked in transport position (*)	Any height within lift range		
[C] (*)Assuming r = 720 mm tire dynamic radius index of ISO 4251/1-1998			

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 **Fax :** 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr **e-mail :** info@tamtest.gov.tr

1.7 SWINGING DRAWBAR

[C]	Type	: Clevis
	Height above ground;	
[C]	Maximum	: 520 mm
[C]	Minimum	: 410 mm
[C]	Type of adjustment	: Reversing
[C]	Distance of hitch point from rear – wheel axis horizontally	: 750 mm
[C]	Distance of hitch point from p.t.o shaft ends	
	Vertically	: 205/315 mm
	Horizontally	: 460 mm
	Lateral adjustment (center of clevis)	
[C]	Right-hand	: 100 mm
[C]	Left-hand	: 95 mm
[C]	Distance of pivot point from rear-wheel axis horizontally	: 125 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	: 990 mm
[C]	Distance of hitch point from rear – wheel axis, horizontally	: 520 mm
	Distance of hitch point from PTO shaft end	
[C]	Vertically	: 265 mm
[C]	Horizontally	: 210 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) : 2, 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 : CNH, hydraustatic, oil immersed disc

[C] Method of operation : Mechanical, pedal operated

[C] Trailer braking take-off : None

1.11.2 Parking brake

[C] Type :Mechanical, independent from servise brake

[C] Method of operation :By hand lever operated

1.12. WHEELS

Number

[C] Front : 2/steering and driving

[C] Rear : 2/driving

[C] Wheelbase : 2249 mm

Track width adjustment

		Minumum mm	Maximum mm	Adjustment method
[D]	Front	1530	1955	reversing wheels and off-set lug rims
[D]	Rear	1504	2030	reversing wheels and off-set lug rims

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, SM80X, 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

1.14.2. Optional driver's seat(s)

1.14.2.1

[D] Make, model and type : PİLOT, T300, 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 : PİLOT, 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	1135	175x105	195
[C]	Sidelights	1655	75x70	765
[C]	Rearlights	1655	75x70	660
[C]	Reflectors I	1655	75x35	695
[C]	Reflectors II	658	105x55	555

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
3888	2008	2534	2660	2535

2.2 GROUND CLEARANCE (unballasted tractor)

Clearance – limiting part :380 mm (bottom point of swinging drawbar)

2.3 TRACTOR MASS (with roll-bar)

	Unballasted	
	Without driver kg	with driver kg
Front	1278	1300
Rear	1901	1959
Total	3179	3259

2.4 TRACK SPECIFICATION: Not applicable

2.5 TYRES AND TRACK WIDTH SPECIFICATIONS

	Front	Rear
Tyres :	GOOD YEAR	GOOD YEAR
Dimensions	12.4-24	18.4-30
Ply rating	6	6
Type	Diagonal	Diagonal
Maximum load (tyre manufacturer's)	11.77 kN	20.80 kN
Maximum load (tractor manufacturer's)	11.77 kN	20.80 kN
Inflation pressure (tyre manufacturer's)	170 kPa	110 kPa
Dynamic radius index	540 mm	720 mm
Chosen track width	1545 mm	1504 mm

2.6 FUEL

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

Density at 15 °C : P.T.O test :0.835 g/cm^3
Drawbar power test :0.828 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	11.7	200	400
Gear box*	46	1600	400
Final drive (rear) *			
Hydraulic system *			
Final drive (front)	5.3	-	-
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 : 11

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

3. COMPULSORY TEST RESULTS

3.1 MAIN POWER TAKE-OFF

Date and location of tests : 14/07/2004, 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						
58.5	2500	614	14.50	17.36	248	3.37
3.1.2. Power at rated engine speed						
58.5	2500	614	14.50	17.36	248	3.37
3.1.3. Standard Power Take-off speed (540 ± 10 rev/min)						
57.0	2200	540	13.65	16.35	239	3.49
3.1.4. PART LOADS						
3.1.4.1.The torque corresponding to maximum power at rated engine speed						
58.5	2500	614	14.50	17.36	248	3.37
3.1.4.2. 85% of torque obtained in 3.1.4.1.						
52.6	2639	648	13.97	16.73	266	3.14
3.1.4.3. 75% of torque defined in 3.1.4.2.						
39.7	2659	653	11.76	14.08	296	2.82
3.1.4.4. 50% of torque defined in 3.1.4.2.						
26.7	2681	658	8.71	10.43	326	2.56
3.1.4.5. 25% of torque defined in 3.1.4.2.						
13.5	2708	665	6.89	8.25	511	1.63
3.1.4.6. No load						
0	2750	675	4.02	4.81	-	-

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

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						
57.0	2200	540	13.65	16.35	239	3.49
3.1.5.2. 85% of torque obtained in 3.1.5.1.						
51.1	2317	569	12.85	15.39	252	3.32
3.1.5.3. 75% of torque defined in 3.1.5.2.						
38.9	2355	578	10.73	12.85	276	3.03
3.1.5.4. 50% of torque defined in 3.1.5.2.						
26.5	2400	589	7.82	9.37	296	2.82
3.1.5.5. 25% of torque defined in 3.1.5.2.						
13.4	2438	598	5.75	6.89	428	1.95
3.1.5.6. No load						
0	2489	611	3.31	3.97	-	-

Maximum engine speed at no load : 2750 rev/min

Torque at maximum power(equivalent crankshaft)
- At rated engine speed : 223.80 Nm
- At 2-hour test : 223.80 Nm

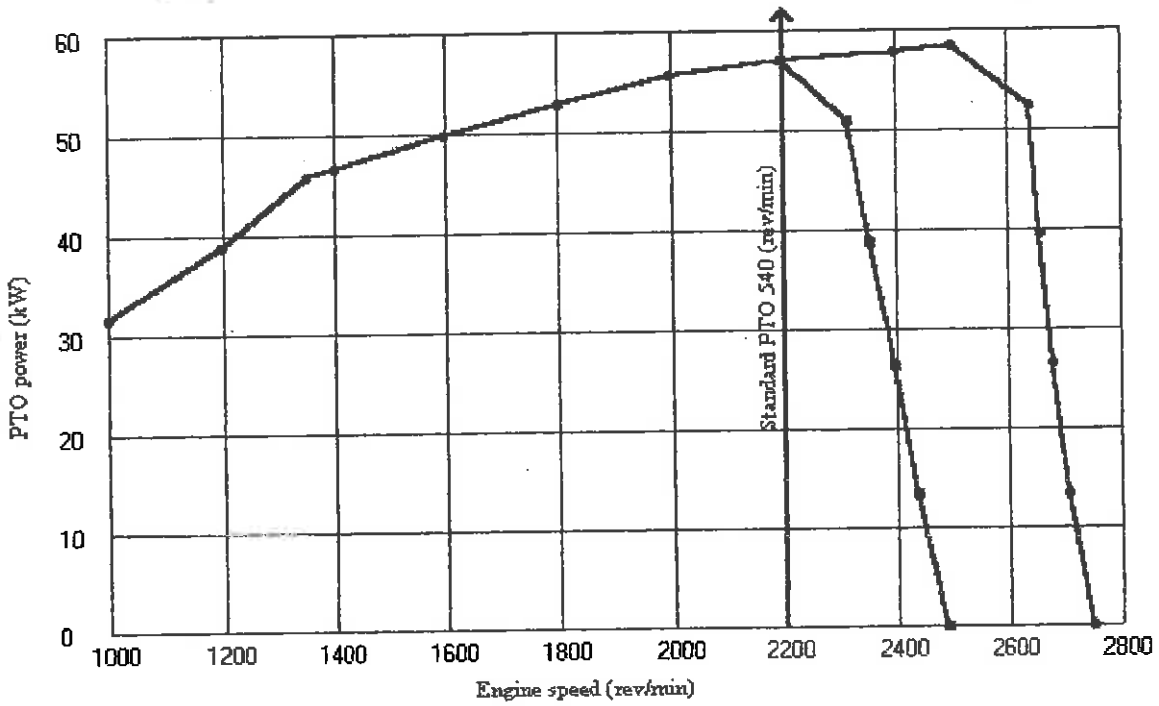
Maximum torque : 325.14 Nm (1350 rev/min engine speed)

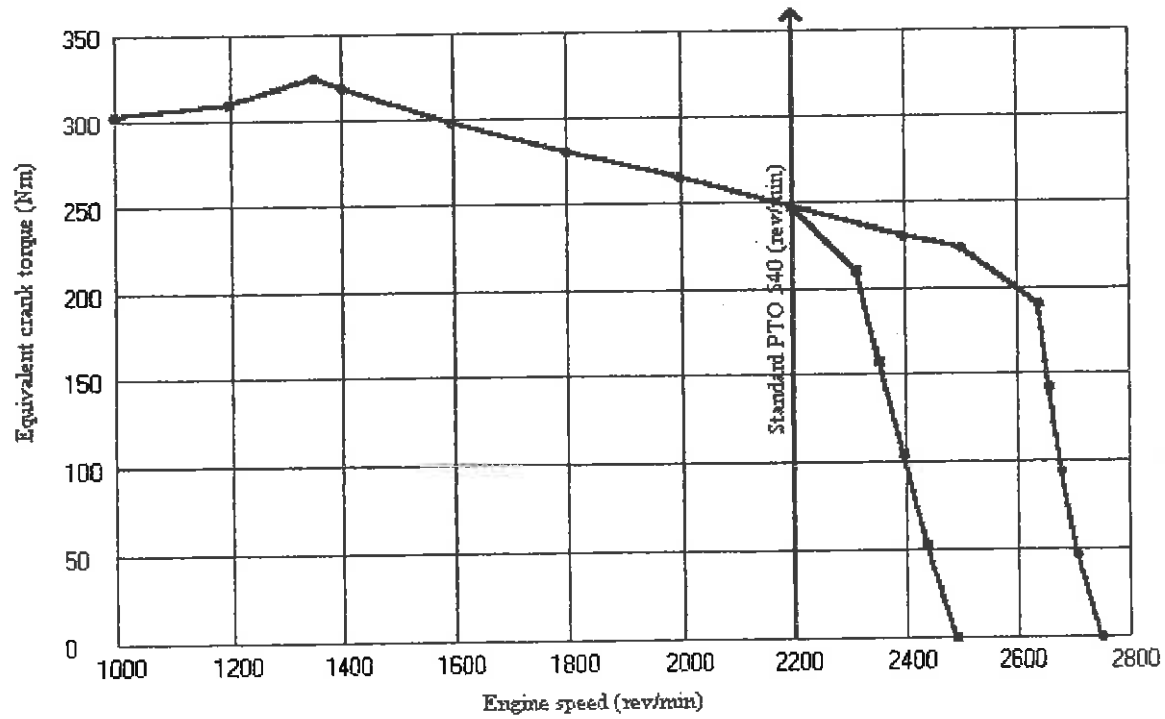
Mean atmospheric conditions
- Temperature : 27 ^{0}C
- Pressure : 91.3 kPa
- Relative humidity : 45%

Maximum temperatures (°C)
- Cooling water : 99
- Engine oil : 130
- Fuel : 42
- Engine air intake : 43

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

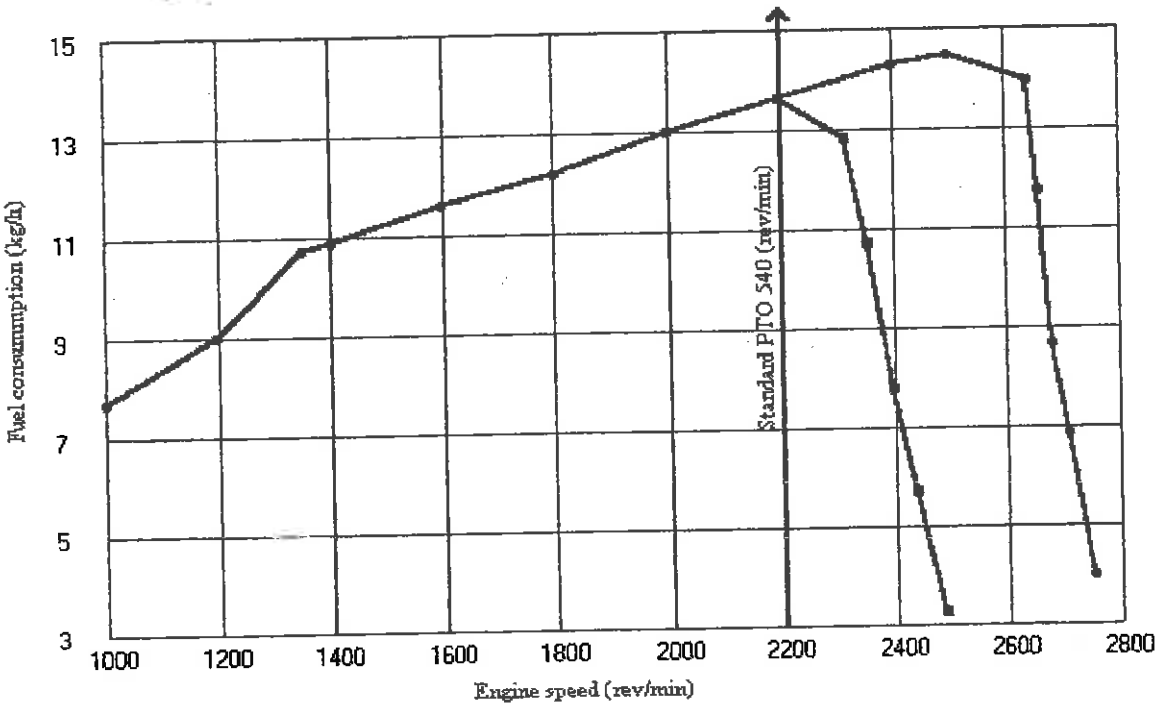
PTO POWER

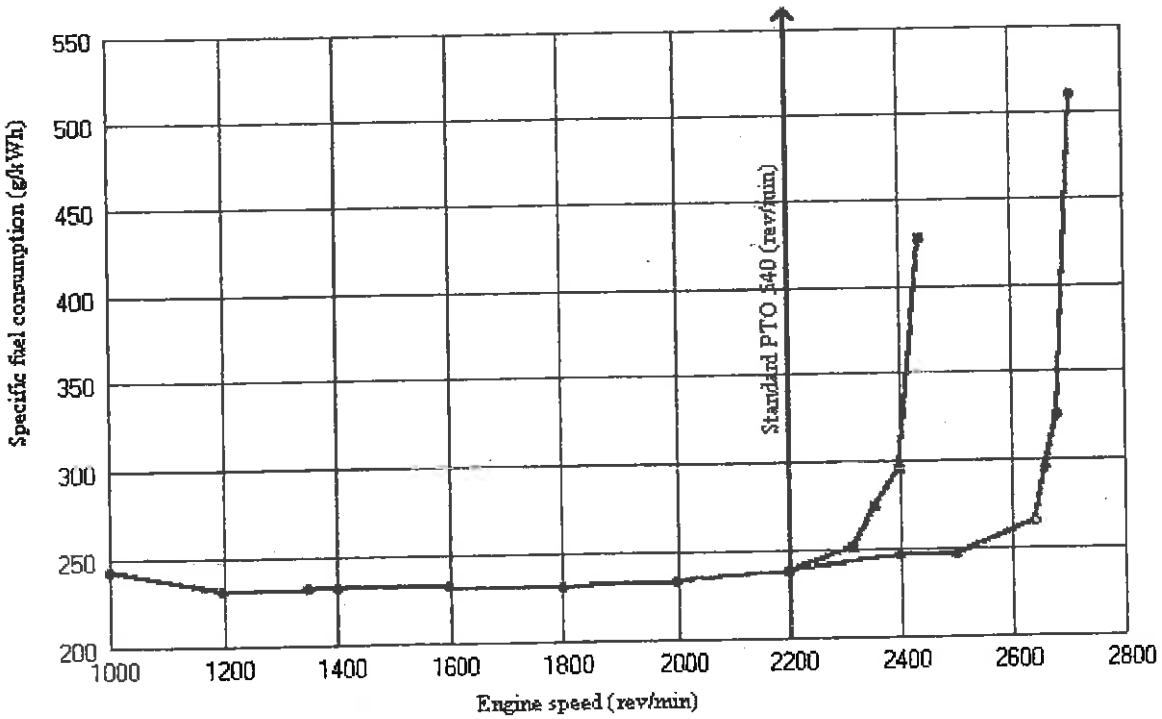




TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

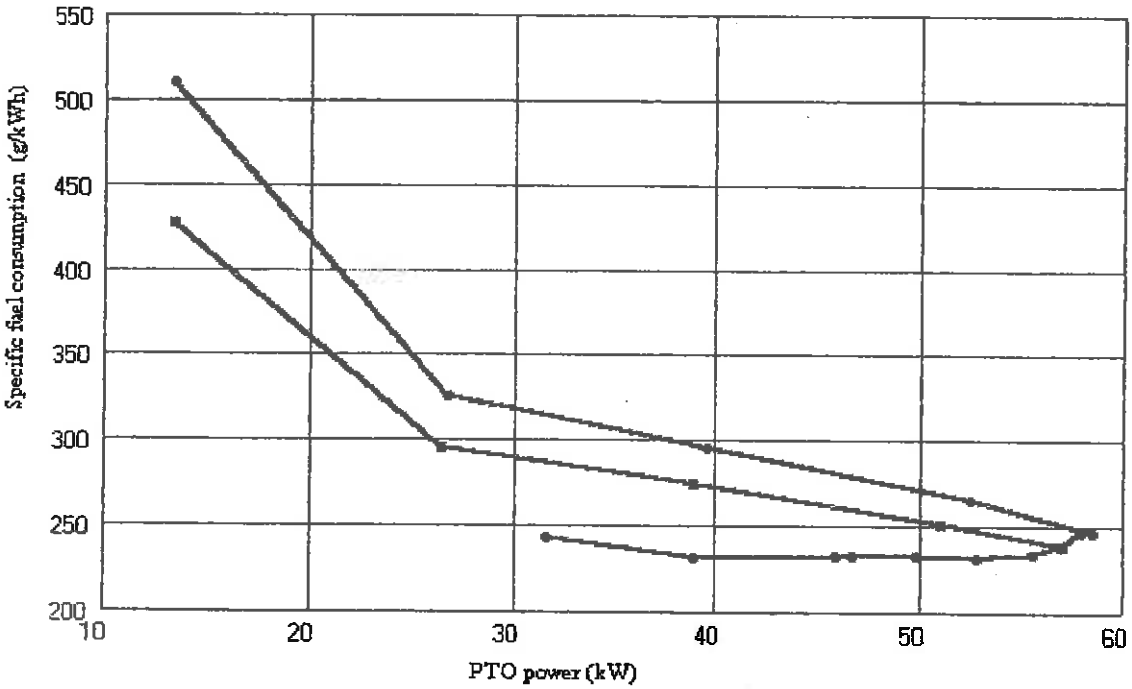
PTO POWER





TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

PTO POWER



TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 Fax : 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr e-mail : info@tamtest.gov.tr

3.2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests :27/08/2004

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) 19.5	60	68	2701	-	-
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) 17.6	(3) 66		2701	32.7	9.6
3.2.1.2.3 Maximum avaible flow and maximum power from one coupler pair (1)	(2) 14.5	(3) 64		2701	55.7	13.5
3.2.1.2.4 Maksimum flow rate at minimum pressure	(2) 2.0	(3) 60		2721	59.0	-

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	200	100
Vertical movement With lifting force Without lifting force	 mm mm	 670 740	 895 1005
Maximum corrected force exerted through full range	kN	23.8	16.1
Corresponding pressure of hydraulic fluid	MPa	17.6	17.6
Moment about rear wheel axis	kNm	24.4	26.3
Maximum tilt angle of mast from vertical	Degrees	-	15°

Lifting heights relative to the horizontal lower links

mm	-420	-320	-300	-200	-100	0	+100	+200	+300	+350	+400	+475

Lifting forces at the hitch point: Corresponding pressure:17.6 MPa

kN*	-	26.1	25.8	26.4	26.1	26.6	26.4	26.3	26.6	23.8	-	-

Lifting forces at the frame: Corresponding pressure: 17.6 MPa

kN*	20.2	20.6	20.4	20.2	19.9	19.6	19.0	18.5	18.0	-	17.7	16.1

*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 :03/08/2004

Type of track : Concrete

Height of drawbar above ground	Tyre inflation pressure	
	Front	Rear
410 mm	160 kPa	100 kPa

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 **Fax :** 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr **e-mail :** info@tamtest.gov.tr

REPORT NUMBER:1379/2250-TGK.13

Gear and range	Power	Draw-bar 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	13.3	23.88	2.00	2670	15.0	615	1.35	36	75	86	27	42	90.7
I-2	20.3	23.79	3.08	2661	15.0	500	1.66	36	75	86	27	42	90.7
I-3	27.6	23.83	4.17	2651	15.0	428	1.93	36	75	86	27	42	90.7
II-1	31.0	24.14	4.63	2642	15.0	415	1.99	36	75	86	27	41	90.7
I-4	38.1	23.47	5.85	2598	15.0	389	2.13	37	78	88	27	41	90.7
II-2	41.7	21.50	6.99	2503	12.1	352	2.36	37	78	88	27	41	90.7
II-3	42.7	15.45	9.95	2501	7.9	346	2.40	37	78	88	27	40	90.7
III-1	43.7	13.94	11.29	2503	7.1	340	2.44	37	78	88	27	40	90.7
II-4	43.1	10.74	14.46	2500	6.5	345	2.40	37	78	88	27	40	90.7
3.3.2.FUEL CONSUMPTION 3.3.2.1. In selected gear, at maximum power at rated speed													
III-1	43.7	13.94	11.29	2503	7.1	340	2.44	39	77	87	26	39	90.7
3.3.2.1.1. 75 % of pull at maximum power at rated speed													
III-1	35.6	10.46	12.24	2643	4.6	394	2.10	37	75	87	26	39	90.7
3.3.2.1.2. 50 % of pull at maximum power at rated speed													
III-1	24.3	6.97	12.53	2662	3.0	458	1.81	37	75	87	26	39	90.7
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	35.6	10.49	12.22	2068	4.5	331	2.50	37	75	87	26	39	90.7
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	24.3	6.98	12.51	2082	2.9	365	2.27	37	75	87	26	39	90.7
3.3.2.2. in selected gear nearest to 7.5 km/h at rated speed													
II-2	41.7	21.50	6.99	2503	12.1	352	2.36	39	77	88	26	40	90.7
3.3.2.2.1. 75 % of pull at maximum power at rated speed													
II-2	34.8	16.13	7.77	2642	7.4	394	2.10	39	77	88	26	40	90.7
3.3.2.2.2. 50 % of pull at maximum power at rated speed													
II-2	24.1	10.75	8.07	2661	4.5	451	1.83	39	77	88	26	40	90.7
3.3.2.2.3. Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.1.													
II-3	34.7	16.15	7.73	1930	7.3	330	2.51	39	77	88	26	40	90.7
3.3.2.2.4. Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.2.													
II-3	24.1	10.79	8.04	1949	4.5	343	2.41	39	77	88	26	40	90.7

4.OPTIONAL TESTS : None

5. REPAIRS : Flow rate and engine speed were adjusted.

6. REMARKS : Atmospheric pressure 90.7 kPa and 91.3 kPa less than 96.6 kPa fixed in the OECD code.

TARIM VE KÖYİŞLERİ BAKANLIĞI
TARIM ALET VE MAKİNALARI TEST MERKEZİ MÜDÜRLÜĞÜ
Tel : 0 (312) 315 65 74- 315 56 85 **Fax :** 0 (312) 315 04 66
Web Sitesi : www.tamtest.gov.tr **e-mail :** info@tamtest.gov.tr

REPORT NUMBER:1379/2250-TGK.13

TEST COMMISSION

Bekir İBAN
Agricultural Engineer

Duran DOGANGUZEL
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