Consiglio Nazionale delle Ricerche
ISTITUTO PER LA MECCANIZZAZIONE AGRICOLA
Strada delle Cacce, 73 - 10135 TORINO (Italy)

OECD Approval No.: 1/1 897
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TEST IN ACCORDANCE WITH THE OECD CODE 1 FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS

Make:	New Holland	Fiatagri	Ford
Trade Name:	TN 75D	TN 75D	TN 75D
Type:	4 WD, 30 km/h 8+8 speeds	4 WD, 30 km/h 8+8 speeds	4 WD, 30 km/h 8+8 speeds
Manufacturer denomination:	9472C7N3AGH	9472C763AGH	9472C773AGH



Manufactured by: NEW HOLLAND ITALIA S.p.A.
Viale delle Nazioni, 55
41100 MODENA (Italy)

Date and location of the tests: 1999 TORINO (Italy)

This report has been approved by the O.E.C.D. Co-ordinating Centre (CEMAGREF, France) as being in accordance with the O.E.C.D. Tractor Test Code.

PRELIMINARY REMARKS

This bulletin is based on engineering tests in accordance with O.E.C.D. Code 1.
It does not contain an evaluation of performance of the tractor on practical farm work.

The NEW HOLLAND tractor 9472XXXXXXX type are manufactured in following variants:

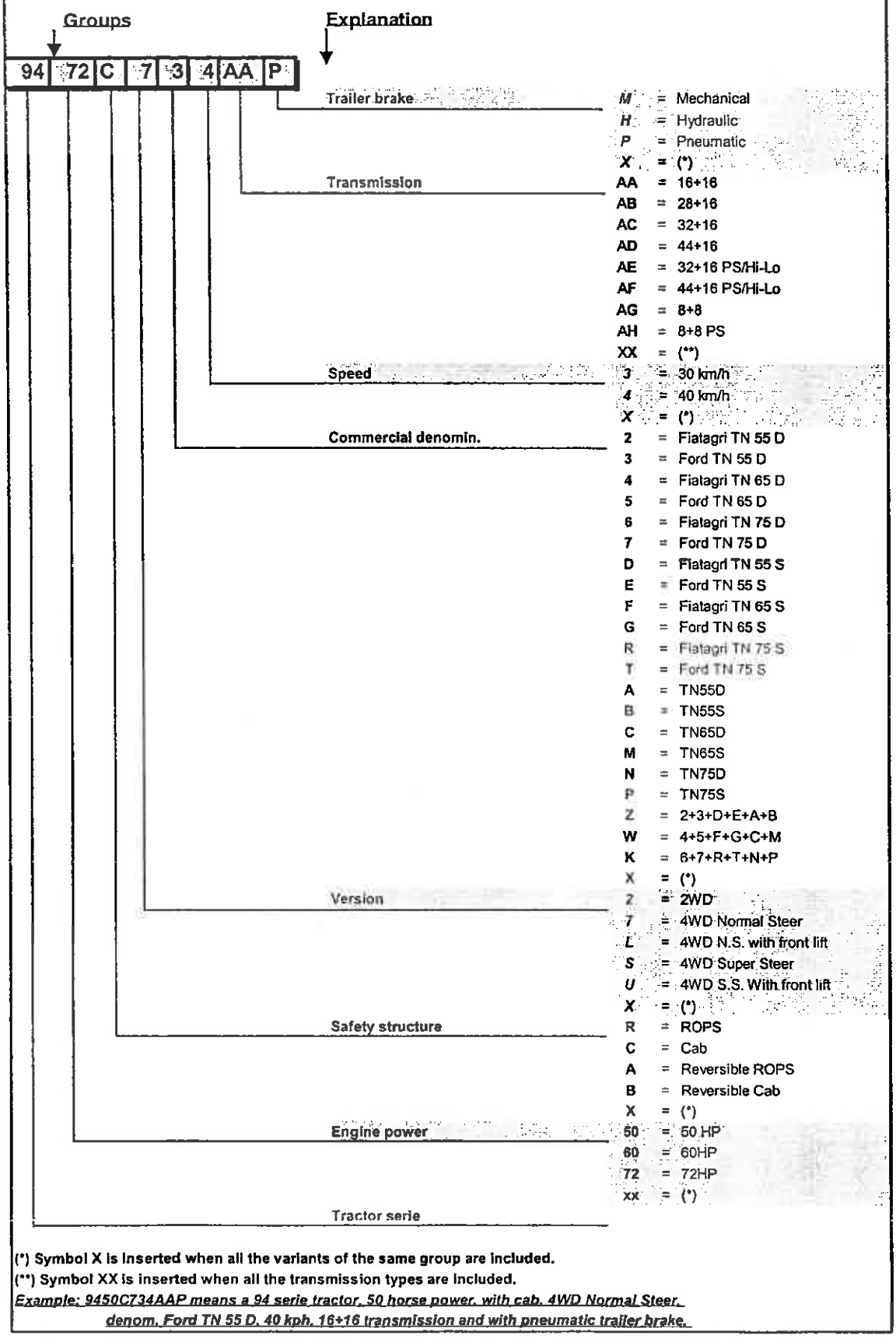
- For the transmission
    1. with 8 forward and 8 reverse speeds: 4 speeds, 2 ranges of speed (slow and fast) and 1 reverse group
    2. with 16 forward and 16 reverse speeds; 4 speeds, 4 ranges of speed (slow, medium slow, medium fast and fast) and 1 reverse group
    3. with 28 forward and 16 reverse speed: 4 speeds, 1 reduction group (creeper and normal), 3 ranges of speed (slow, medium slow and medium fast) for creeper group and 4 ranges (slow, medium slow, medium fast and fast) for normal group, and 1 reverse group
    4. with 32 forward and 16 reverse speed: 4 speeds, 4 ranges of speed (slow, medium slow, medium fast and fast), 1 HI-LO reduction group, and 1 reverse group
    5. with 44 forward and 16 reverse speed: 4 speeds, 1 reduction group (creeper, splitter and normal), 3 ranges of speed (slow, medium slow and medium fast) for creeper group and 4 ranges (slow, medium slow, medium fast and fast) for splitter and normal group, and 1 reverse group
    6. with 44 forward and 16 reverse speed: 4 speeds, 2 reduction group (creeper and HI-LO), 3 ranges of speed (slow, medium slow and medium fast) for creeper group and 4 ranges (slow, medium slow, medium fast and fast) for HI-LO group, and 1 reverse group
- For the protective structure fitted on the tractor
    1. cab
    2. 2 post rear non folding roll bar
    3. 2 post rear folding roll bar
- For the steering mechanism fitted on the tractor
    1. normal steer
    2. super steer

Tests have been carried out on tractor with 8 forward and 8 reverse speeds, fitted with cab and normal steer.

For more information on tractor variant codification see on next page.

In this report all performance characteristics are given corresponding to the International System of Units.

New Holland NGB Tractors - All Purpose DL



(*) Symbol X is inserted when all the variants of the same group are included.
(**) Symbol XX is inserted when all the transmission types are included.

Example: 9450C734AAP means a 94 serie tractor, 50 horse power, with cab, 4WD Normal Steer, denom. Ford TN 55 D, 40 kph, 16+16 transmission and with pneumatic trailer brake.

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0 FOREWORDS

Tractor manufacturer's name and address	NEW HOLLAND ITALIA S.p.A. Viale delle Nazioni, 55 41100 MODENA (Italy)
Location of tractor assembly	Jesi (AN) - ITALY
Submitted for test by:	The Manufacturer
Selected for test by:	Manufacturer with the agreement of IMA
Place of running-in:	MODENA (MO) - ITALY
Duration of running-in:	Appr. 50 hours
Location of tests :	IMA - Torino - Italy

1 SPECIFICATIONS OF TRACTOR

1.1 IDENTIFICATION

Make:	NEW HOLLAND
Model:	TN 75D
Type:	4 WD, 30 km/h, 8+8 speeds
Type: Number of driving wheels:	4
Manufacturer denomination:	9472C7N3AGH
Serial N°:	001157966
1st serial N°:	001132233

1.2 ENGINE

Make:	NEW HOLLAND ITALIA S.p.A.
Model:	IVECO 8035.25
Type:	direct injection, compression ignition, 4 cycle
Serial N°:	529-490498

1.2.1 Cylinders

Number and disposition:	3, vertical, in line
Bore x stroke:	104 x 115 mm
Capacity:	2930 cm^3
Compression ratio:	18±0.5:1
Arrangement of valves:	overhead
Cylinder liners:	dry

1.2.2 Supercharging

Supercharger	GARRET make, TA 2504 type

1.2.3 Fuel system

Fuel feed system:	AC CORONA fuel feed pump
Make, model and type of fuel filter(s):	N° 1 NEW HOLLAND make, with replaceable cartrige and n°1 mesh filter inside the fuel feed pump
Capacity of fuel tank:	70 l, placed under the tractor platform, on the left side
Make/Model/Type of injection pump:	BOSCH make, L764 type, rotary injection pump As option BOSCH make, VE3/11F1150LV13671 type, rotary injection pump
Serial N°:	none

Manufacturer's production setting of injection pump:	
-flow rate:	6.97 mm^3/stroke at rated speed and full load corresponding 14.42 dm^3/h
-timing:	4.0°±1° before TDC
Make/Model/Type of injectors:	BOSCH make, DLLA 132 S type, multihole injection nozzles
Injection pressure:	26.0±1 MPa for BOSCH DLLA 132 S
Make/Model/Type of carburettor:	none

1.2.4 Governor

Make, model and type	BOSCH make, mechanical type, incorporated in the fuel pump
Governed range of engine speed:	750-2525 rev/min
Rated engine speed:	2300 rev/min

1.2.5 Air cleaner

Pre-cleaner	none
Main filter	
- Make:	NEW HOLLAND ITALIA S.p.A.
- Model:	dis. 5176855
- Type:	dry air filter, with double cartridge
Location of air intake:	on front of the radiator under the bonnet cowling
Maintenance indicator:	with the warning lamp on the dashboard

1.2.6 Lubrication system

Type of feed pump:	forced feed by means of gear pump. Engine oil cooling is provided by a heat exchanger using engine coolant
Type of filter(s):	replaceable cartridge type, installed on the pressure line of the engine and wire mesh type, installed on the pump suction line.
Number of filters:	2

1.2.7 Cooling System

Type of coolant:	water
Specification of fan:	propeller fan driven by engine shaft
Number of fan blades:	6
Fan diameter:	420 mm
Coolant capacity:	12 litres
Type of temperature control:	a temperature gauge, with display on the dashboard, alerts the operator to potential problems
Superpressure system:	71 kPa

1.2.8 Starting system

Make and model:	MARELLI make, 4807375 type As option BOSCH make, 4755109 type
Type:	solenoid operate
Starter motor power rating:	3.5 kW
Cold starting aid:	LUCAS make, thermostat type
Safety device:	clutch engagement

1.2.9 Electrical system

Voltage:	12 V, negative earth
Generator	
- Make:	MARELLI
- Model:	Alternator
- Type:	AA108
- Power:	65 A for tractor with cab; 45 A for tractor with rear roll bar
Battery:	1, lead acid type
Rating:	100 Ah at 20 hours

1.2.10 Exhaust system

Make, model and type	NEW HOLLAND, 5172688, interference type with internal perforated pipe
Location:	on the left hand side of engine, under the bonnet cowling, with the vertical exhaust pipe above the bonnet cowling
Height of outlet above ground:	2313 mm

1.3 TRANSMISSION

1.3.1 Clutch (utilized only for travelling of tractor)

Make:	VALEO
Model:	none
Type:	dry double disc
Number of plates:	2
Diameter of plates:	280 mm
Method of operation:	mechanically operated by pedal
As option	
Make:	LUK
Model:	drawing number
Type:	dry double disc
Number of plates:	2
Diameter of plates:	280 mm
Method of operation:	mechanically operated by pedal

1.3.2 Gearbox

Make:	NEW HOLLAND ITALIA S.p.A.
Model:	own drawing
Type:	mechanical, syncronized constant mesh gears, direct engagement by hand levers (on tested tractor), with optional HI-LO reduction group; when the reverse group is engaged the position HI is automatically excluded.

	Forward	Reverse
Number of gears	4	4
Number of ranges	2 (slow and fast)	2 (slow and fast)
Number of groups	none	none
Total of arrangements	8	8

Available options

Number of gears	4	4
Number of ranges	4 (slow, medium slow, medium fast and fast)	4 (slow, Medium slow, medium fast and fast)
Number of groups	none	none
Total of arrangements	16	16

	Forward	Reverse
Number of gears	4	4
Number of ranges	• 3 (slow, medium slow and medium fast) for creeper group • 4 (slow, medium slow, medium fast and fast) for normal group	4 (slow, medium slow, medium fast and fast)
Number of groups	2 (creeper and normal)	none
Total of arrangements	28	16

	Forward	Reverse
Number of gears	4	4
Number of ranges	4 (slow, medium slow, medium fast and fast)	4 (slow, medium slow, medium fast and fast)
Number of groups	2 (HI-LO)	none
Total of arrangements	32	16

	Forward	Reverse
Number of gears	4	4
Number of ranges	• 3 (slow, medium slow and medium fast) for creeper group • 4 (slow, medium slow, medium fast and fast) for splitter group • 4 (slow, medium slow, medium fast and fast) for normal group	4 (slow, medium slow, medium fast and fast)
Number of groups	3 (Creeper, Splitter and Normal)	none
Total of arrangements	44	16

	Forward	Reverse
Number of gears	4	4
Number of ranges	• 3 (slow, medium slow and medium fast) for creeper group • 4 (slow, medium slow, medium fast and fast) for HI-LO group	4 (slow, medium slow, medium fast and fast)
Number of groups	3 (Creeper and HI-LO)	none
Total of arrangements	44	16

1.3.3 Rear axle and final drives

Make: NEW HOLLAND ITALIA S.p.A.
Model: own drawing
Type: bevel gear differential and epyciclic final drives
Rear differential lock
- Make: NEW HOLLAND ITALIA S.p.A.
- Model: own drawing
- Type: electrohydraulic engagement

- Method of engagement/ disengagement: button placed on the dashboard

1.3.4 Front axle and final drives

Make:	NEW HOLLAND ITALIA S.p.A.
Model:	own drawing
Type:	centrally pivotted
Front differential lock	
- Make:	NEW HOLLAND ITALIA S.p.A.
- Model:	own drawing
- Type:	electrohydraulic engagement
- Method of engagement/disengagement:	Limited slip or jaw clutch

1.3.5 Total ratios and travelling speeds[1]

NEW HOLLAND TN 75D with 8 forward speeds and 8 reverse speeds (fitted on 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 2300 rev/min (km/h)
		FORWARD	
1	Slow	254.260	2.369
2	Slow	170.566	3.531
3	Slow	116.031	5.191
4	Slow	78.321	7.690
1	Fast	64.927	9.277
2	Fast	43.555	13.830
3	Fast	29.629	20.330
4	Fast	20.000	30.120

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		REVERSE	
1	Slow	262.462	2.295
2	Slow	176.068	3.421
3	Slow	119.774	5.029
4	Slow	80.847	7.450
1	Fast	67.021	8.987
2	Fast	44.960	13.400
3	Fast	30.585	19.690
4	Fast	20.645	29.170

Number of revolutions of front wheels for one revolution of rear wheels: 1.378

[1] Calculated with rear tyre 480/70R30 dynamic radius index 695 mm (Not in accordance with ISO 4251/1-1998)

NEW HOLLAND TN 75D with 16 forward speeds and 16 reverse speeds

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		FORWARD	
1	Slow	964.506	0.625
2	Slow	647.023	0.931
3	Slow	440.151	1.369
4	Slow	297.102	2.028
1	Medium slow	229.480	2.626
2	Medium slow	153.943	3.914
3	Medium slow	104.723	5.754
4	Medium slow	70.688	8.525
1	Medium fast	187.455	3.215
2	Medium fast	125.751	4.792
3	Medium fast	85.545	7.044
4	Medium fast	57.743	10.436
1	Fast	64.928	9.281
2	Fast	43.556	13.835
3	Fast	29.630	20.338
4	Fast	20.000	30.130

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		REVERSE	
1	Slow	995.619	0.605
2	Slow	667.894	0.902
3	Slow	454.350	1.326
4	Slow	306.686	1.965
1	Medium slow	236.882	2.544
2	Medium slow	158.909	3.792
3	Medium slow	108.101	5.574
4	Medium slow	72.968	8.258
1	Medium fast	193.502	3.114
2	Medium fast	129.808	4.642
3	Medium fast	88.305	6.824
4	Medium fast	59.606	10.110
1	Fast	67.022	8.991
2	Fast	44.961	13.403
3	Fast	30.585	19.702
4	Fast	20.645	29.189

Number of revolutions of front wheels for one revolution of rear wheels: 1.378

NEW HOLLAND TN 75D with 28 forward speeds, with creeper unit, and 16 reverse speeds

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		FORWARD	
1 Creeper	Slow	3722.65	0.162
2 Creeper	Slow	2497.28	0.241
3 Creeper	Slow	1698.83	0.355
4 Creeper	Slow	1146.71	0.526
1 Creeper	Medium slow	885.712	0.680
2 Creeper	Medium slow	594.165	1.014
3 Creeper	Medium slow	404.194	1.491
4 Creeper	Medium slow	272.831	2.209
1 Creeper	Medium fast	723.511	0.833
2 Creeper	Medium fast	485.355	1.242
3 Creeper	Medium fast	330.174	1.825
4 Creeper	Medium fast	222.887	2.704
1	Slow	964.506	0.625
2	Slow	647.023	0.931
3	Slow	440.151	1.369
4	Slow	297.102	2.028
1	Medium slow	229.480	2.626
2	Medium slow	153.943	3.914
3	Medium slow	104.723	5.754
4	Medium slow	70.688	8.525
1	Medium fast	187.455	3.215
2	Medium fast	125.751	4.792
3	Medium fast	85.545	7.044
4	Medium fast	57.743	10.438
1	Fast	64.928	9.281
2	Fast	43.558	13.835
3	Fast	29.630	20.338
4	Fast	20.000	30.130

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		REVERSE	
1	Slow	995.619	0.605
2	Slow	667.894	0.902
3	Slow	454.350	1.328
4	Slow	306.686	1.965
1	Medium slow	238.882	2.521
2	Medium slow	158.909	3.792
3	Medium slow	108.101	5.574
4	Medium slow	72.968	8.258
1	Medium fast	193.502	3.114
2	Medium fast	129.808	4.642
3	Medium fast	88.305	6.824
4	Medium fast	59.606	10.11
1	Fast	67.022	8.991
2	Fast	44.961	13.403
3	Fast	30.585	19.702
4	Fast	20.645	29.189

Number of revolutions of front wheels for one revolution of rear wheels: 1.378

NEW HOLLAND TN 75D with 32 forward speeds, with HI-LO, and 16 reverse speeds

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		FORWARD	
1 LO	Slow	1157.410	0.521
1 HI	Slow	964.508	0.625
2 LO	Slow	776.427	0.776
2 HI	Slow	647.023	0.931
3 LO	Slow	528.182	1.141
3 HI	Slow	440.151	1.368
4 LO	Slow	365.523	1.648
4 HI	Slow	297.102	2.028
1 LO	Medium slow	275.376	2.188
1 HI	Medium slow	229.48	2.626
2 LO	Medium slow	184.731	3.262
2 HI	Medium slow	153.943	3.914
3 LO	Medium slow	125.668	4.795
3 HI	Medium slow	104.723	5.754
4 LO	Medium slow	84.828	7.104
4 HI	Medium slow	70.688	8.525
1 LO	Medium fast	224.946	2.679
1 HI	Medium fast	187.455	3.215
2 LO	Medium fast	150.901	3.993
2 HI	Medium fast	125.751	4.792
3 LO	Medium fast	102.654	5.870
3 HI	Medium fast	85.545	7.044
4 LO	Medium fast	69.291	8.697
4 HI	Medium fast	57.743	10.436
1 LO	Fast	77.913	7.734
1 HI	Fast	64.928	9.281
2 LO	Fast	52.287	11.529
2 HI	Fast	43.558	13.835
3 LO	Fast	35.558	16.948
3 HI	Fast	29.630	20.338
4 LO	Fast	24.000	25.108
4 HI	Fast	20.000	30.130

Gear no	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
REVERSE			
1	Slow	995.619	0.605
2	Slow	667.894	0.902
3	Slow	454.350	1.328
4	Slow	306.688	1.965
1	Medium slow	236.882	2.544
2	Medium slow	158.909	3.792
3	Medium slow	108.101	5.574
4	Medium slow	72.968	8.258
1	Medium fast	193.502	3.114
2	Medium fast	129.808	4.642
3	Medium fast	88.305	6.824
4	Medium fast	59.606	10.11
1	Fast	67.022	8.991
2	Fast	44.961	13.403
3	Fast	30.585	19.702
4	Fast	20.645	29.189

Number of revolutions of front wheels for one revolution of rear wheels: 1.378

NEW HOLLAND TN 75D with 44 forward speeds, with creeper and splitter unit, and 16 reverse speeds

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		FORWARD	
1 Creeper	Slow	3722.650	0.162
2 Creeper	Slow	2497.280	0.241
3 Creeper	Slow	1698.830	0.355
4 Creeper	Slow	1146.710	0.526
1 Creeper	Medium slow	885.712	0.680
2 Creeper	Medium slow	594.165	1.014
3 Creeper	Medium slow	404.194	1.491
4 Creeper	Medium slow	272.831	2.209
1 Creeper	Medium fast	723.511	0.833
2 Creeper	Medium fast	485.355	1.242
3 Creeper	Medium fast	330.174	1.825
4 Creeper	Medium fast	222.887	2.704
1 Splitter	Slow	1157.410	0.521
2 Splitter	Slow	964.506	0.625
3 Splitter	Slow	776.427	0.776
4 Splitter	Slow	647.023	0.931
1 Splitter	Medium slow	528.182	1.141
2 Splitter	Medium slow	440.151	1.369
3 Splitter	Medium slow	356.523	1.690
4 Splitter	Medium slow	297.102	2.028
1 Splitter	Medium fast	275.378	2.188
2 Splitter	Medium fast	229.480	2.626
3 Splitter	Medium fast	184.731	3.262
4 Splitter	Medium fast	153.943	3.914
1 Splitter	Fast	125.688	4.795
2 Splitter	Fast	104.723	5.754
3 Splitter	Fast	84.828	7.104
4 Splitter	Fast	70.688	8.525
1	Slow	224.946	2.679
2	Slow	187.455	3.215
3	Slow	150.901	3.993
4	Slow	125.751	4.792
1	Medium slow	102.654	5.870
2	Medium slow	85.545	7.044
3	Medium slow	69.291	8.697
4	Medium slow	57.743	10.436
1	Medium fast	77.913	7.734
2	Medium fast	64.928	9.281
3	Medium fast	52.287	11.529
4	Medium fast	43.558	13.835
1	Fast	35.556	16.948
2	Fast	29.630	20.338
3	Fast	24.000	25.109
4	Fast	20.000	30.130

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		REVERSE	
1	Slow	995.619	0.605
2	Slow	667.894	0.902
3	Slow	454.350	1.328
4	Slow	306.686	1.965
1	Medium slow	236.882	2.544
2	Medium slow	158.908	3.792
3	Medium slow	108.101	5.574
4	Medium slow	72.968	8.258
1	Medium fast	193.502	3.114
2	Medium fast	129.808	4.642
3	Medium fast	88.305	6.824
4	Medium fast	59.608	10.110
1	Fast	67.022	8.991
2	Fast	44.961	13.403
3	Fast	30.585	19.702
4	Fast	20.645	29.189

Number of revolutions of front wheels for one revolution of rear wheels: 1.378

NEW HOLLAND TN 75D with 44 forward speeds, with creeper and HI-LO unit, and 16 reverse speeds

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		FORWARD	
1 Creeper	Slow	2473.09	0.244
2 Creeper	Slow	1659.03	0.363
3 Creeper	Slow	1128.59	0.534
4 Creeper	Slow	761.801	0.791
1 Creeper	Medium slow	588.410	1.024
2 Creeper	Medium slow	394.725	1.527
3 Creeper	Medium slow	268.520	2.244
4 Creeper	Medium slow	181.251	3.325
1 Creeper	Medium fast	480.654	1.254
2 Creeper	Medium fast	322.439	1.869
3 Creeper	Medium fast	219.346	2.747
4 Creeper	Medium fast	148.059	4.070
1 LO	Slow	1157.410	0.521
1 HI	Slow	964.506	0.625
2 LO	Slow	778.427	0.776
2 HI	Slow	647.023	0.931
3 LO	Slow	528.182	1.141
3 HI	Slow	440.151	1.369
4 LO	Slow	356.523	1.690
4 HI	Slow	297.102	2.028
1 LO	Medium slow	275.376	2.188
1 HI	Medium slow	229.480	2.626
2 LO	Medium slow	184.731	3.262
2 HI	Medium slow	153.943	3.914
3 LO	Medium slow	125.688	4.795
3 HI	Medium slow	104.723	5.754
4 LO	Medium slow	84.828	7.104
4 HI	Medium slow	70.688	8.525
1 LO	Medium fast	224.946	2.679
1 HI	Medium fast	187.455	3.215
2 LO	Medium fast	150.901	3.993
2 HI	Medium fast	125.751	4.792
3 LO	Medium fast	102.854	5.870
3 HI	Medium fast	85.545	7.044
4 LO	Medium fast	69.291	8.697
4 HI	Medium fast	57.743	10.436
1 LO	Fast	77.913	7.734
1 HI	Fast	64.928	9.281
2 LO	Fast	52.267	11.529
2 HI	Fast	43.558	13.835
3 LO	Fast	35.558	16.948
3 HI	Fast	29.630	20.338
4 LO	Fast	24.000	25.109
4 HI	Fast	20.000	30.130

Gear no.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2300 rev/min (km/h)
		REVERSE	
1	Slow	995.619	0.605
2	Slow	667.894	0.902
3	Slow	454.35	1.328
4	Slow	306.686	1.965
1	Medium slow	238.882	2.544
2	Medium slow	158.909	3.792
3	Medium slow	108.101	5.574
4	Medium slow	72.968	8.258
1	Medium fast	193.502	3.114
2	Medium fast	129.808	4.642
3	Medium fast	88.305	6.824
4	Medium fast	59.608	10.11
1	Fast	67.022	8.991
2	Fast	44.961	13.403
3	Fast	30.585	19.702
4	Fast	20.645	29.189

Number of revolutions of front wheels for one revolution of rear wheels: 1.378

1.4 POWER TAKE OFF

1.4.1 Main power take-off

Type:	Independent
Method of engagement:	Engaged or disengaged by hand lever, driven by multiplate wet clutch independent of travel clutch; ISO Standard 500-1991
Number of shafts:	1
Method of changing power take-off shaft ends:	removing 3 bolts, swopping shaft and replacing bolts
Method of changing speed:	by means of lever at the right hand site of the seat

1.4.1.1 Power take-off proportional to engine speed

540 rev/min

Location:	at the rear of the tractor, in the median plane
Diameter of power take-off shaft end:	35 mm
Number of splines:	6, in conformity with ISO 500-1991 Type 1
Height above ground	665 mm
Distance from the median plane of the tractor:	0
Distance behind rear-wheel axis:	485 mm
PTO speed at rated engine speed (2300 rev/min):	570 rev/min
Engine speed at standard power take-off speed:	2198 rev/min
Ratio of rotation speeds (engine speed/p.t.o. speed):	4.0714
Power restriction and maximum torque transmissible:	none
Direction of rotation (viewed from behind tractor):	clockwise

750 rev/min

Optional, not fitted on tested tractor

1000 rev/min

Location:	at the rear of the tractor, in the median plane
Diameter of power take-off shaft end:	35 mm
Number of splines:	6, in conformity with ISO 500-1991 Type 1
Height above ground:	665 mm
Distance from the median plane of the tractor:	0
Distance behind rear-wheel axis:	485 mm
PTO speed at rated engine speed (2300 rev/min):	1072 rev/min
Engine speed at standard power take-off speed:	2144 rev/min
Ratio of rotation speeds (engine speed/p.t.o. speed):	2.1442
Power restriction and maximum torque transmissible:	none
Direction of rotation (viewed from behind tractor):	clockwise

1.4.1.2 Power take-off proportional to ground speed

540 rev/min

Location:	at the rear of the tractor, in the median plane
Travelling distance for one revolution of power take-off shaft:	0.50 m
Number of power take-off shaft revolutions for one revolution of rear wheels:	19.42
Direction of rotation (viewed from behind tractor):	clockwise

750 rev/min

Optional, not fitted on tested tractor

1000 rev/min

Location:	at the rear of the tractor, in the median plane
Travelling distance for one revolution of power take-off shaft:	0.30 m
Number of power take-off shaft revolutions for one revolution of rear wheels:	28.47
Direction of rotation (viewed from behind tractor):	clockwise

1.4.2 Optional power take-off

Not fitted on tested tractor

1.5 HYDRAULIC POWER LIFT

1.5.1 Rear power lift

Make, model and type	Own make, draft, position, mixed draft and position control operated by two independent levers; there is a lift-o-matic device to raise and to low in a fast way the lower links
Type of hydraulic system:	open centre system
Type and number of cylinders:	1, single acting, internal
Type of linkage lock for transport:	lift-o-matic device
Relief valve pressure setting:	19±1 MPa
Opening pressure of anti-shock valve:	22±0.5 MPa
Lift pump make and type:	rotative pump driven by the engine shaft. BOSCH make, 25 type (delivery rate of 63.8 l/min with pump at 2484 rpm, as stated by the tractor manufacturer)
Transmission between pump and engine:	mechanical
Number and type of filters:	1, replaceable paper cartridge
Site of oil reservoir:	gear-box
Oil capacity:	42 dm^3, in common with gearbox
Number, type and location of tapping points:	4 tapping points, 2 oil circuits for single or double acting cylinders, at rear of tractor
Maximum volume of oil available to external cylinders:	10 dm^3

1.5.2 Front power lift (optional)

Not fitted on tested tractor

1.6 THREE POINT LINKAGE

1.6.1 Rear three point linkage

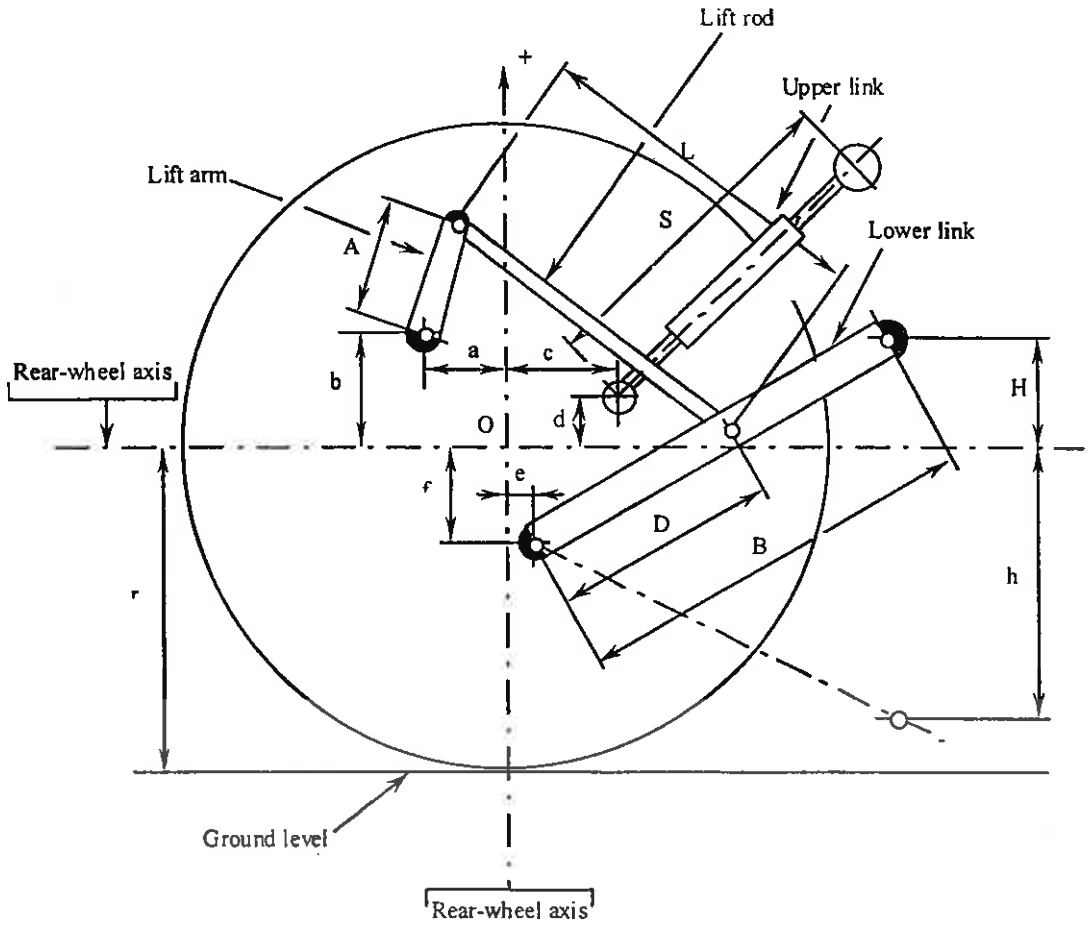
Category: 2nd, implement attachment with three point linkage and lower links with quick connection, in conformity with I.S.O. STANDARD 730/I-1994

Category adapter: none

Table 1. Dimension of rear linkage geometry (when connected to the standard frame)

		Dimension or range	Settings used in test
		mm	mm
Length of lift arms	(A)	255	255
Length of lower links	(B)	880	880
Distance of lift arm pivot point from rear wheel axis			
- horizontally (rearward)	(a)	145	145
- vertically	(b)	276	276
Horizontal distance between the 2 lower link points	(u)	405	405
Horizontal distance between the 2 lift arm end points	(v)	700	700
Length of upper link	(S)	from 555 to 770	675
Distance of upper link pivot point from rear wheel axis			
- horizontally (rearward)	(c)	340-345	340
- vertically	(d)	308-261	308
Distance of lower link pivot point from rear wheel axis			
- horizontally	(e)	155	155
- vertically	(f)	189	189
Distance of lower link pivot points to lift rod pivot points on lower links	(D)	523	523
Length of lift rods	(L)	from 570 to 690	655
Height of lower hitch points relative to the rear wheel axis:			
- in low position	(h)	495	495
- in high position	(H)	105	105
Height above ground of lower hitch points when locked in transport position[2]		800	800

[2] Assuming the dynamic radius index of 480/70 R 30 rear tyres: 695 mm (ISO 4251/1-1992)



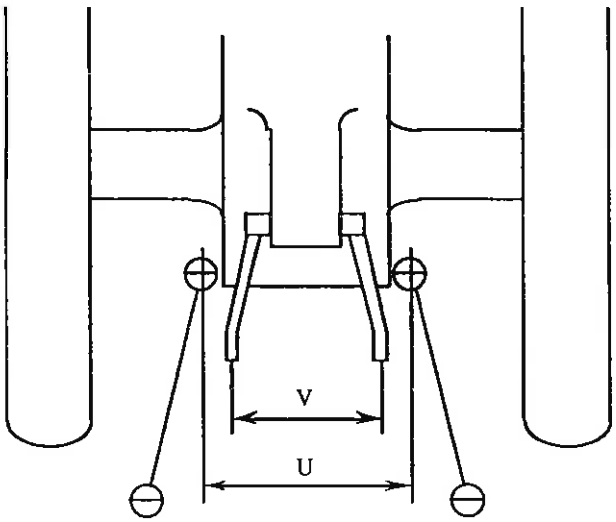


Figure 1. Lift test- Rear linkage geometry

1.7 SWINGING DRAWBAR

Optional, not fitted on tested tractor

1.8 TRAILER HITCH

Type:	DGM-GA 4168 C
Hole diameter:	28 mm
Height above ground:	
- minimum:	455 mm
- maximum:	959 mm
Distance of hitch point from rear wheel axis horizontally:	656 mm
Distance of hitch point from power take-off shaft end:	
- vertically:	216 mm
- horizontally:	171 mm
Maximum vertical permissible load:	14.7 kN

1.9 HOLED DRAWBAR

Not present on the tested tractor. Available as option

1.10 STEERING

Make/Model/Type:	DANFOSS make, ORBITROL OSPC 80 ON model, hydrostatic type
Method of operation:	
- pump:	hydrostatic steering with BOSCH hydraulic gear pump
- rams:	single acting ram acting directly on front axle
Working pressure:	17 MPa

1.11 BRAKES

1.11.1 Service brake

Make/Model:	NEW HOLLAND ITALIA S.p.A. make, 694.130.000 type
Type:	oil bath disc, total 2 discs, 1 for wheel at rear, mounted on differential shaft. Rear disc 259 mm Ø, FRENDO HDT 303 lining material
Method of operation:	hydraulically actuated with 2 pedals
Trailer braking take-off:	hydraulic brake system

1.11.2 Parking brake

Type:	fully independent of service brake, 1 oil bath disc mounted on the pinion shaft in the gear box
Method of operation:	mechanical by hand lever

1.11.3 Steering brake

Divided pedal of service brake, for normal unlocked together

1.12 WHEELS

Number:
- front: 2, driving and steering
- rear: 2 driving

Wheelbase: 2065 mm

Track width adjustment:

	Minimum	Maximum	Adjustment method
	mm	mm	
Front	1236	1939	Changing the position of the rims with respect to the disc
Rear	1222	1927	Changing the position of the rims in respect to the disc

1.13 PROTECTIVE STRUCTURE

Make, model and type: NEW HOLLAND ITALIA S.p.A. make, CS 33 model

Manufacture's name and address: NEW HOLLAND ITALIA S.p.A.
Viale delle Nazioni, 55
41100 MODENA
(Italy)

Protective device: cab, not tiltable

OECD approval
- number: 4/0 465/1
- date of approval: 28th May 1998

1.14 SEAT

1.14.1 Driver's seat

Make/Model/Type: GRAMMER make, MSG 83/520 model, upholstered seat with back rest

Seat and steering wheel reversible: no

Type of suspension: adjustable spring

Type of damping: shock absorber

Range of adjustment:
- longitudinal: 150 mm
- vertical: 60 mm

Safety belt: yes

1.14.2 Optional driver's seat

None

1.14.3 Passenger seat

Location: none

Number of places: none

1.15 LIGHTING

	Height above ground of centre[3]	Size	Distance from outside edge of lights to median plane of tractor
	mm	mm	mm
Headlights:	1175	225x100	280
Front parking lights	1560	115x35	735
Front direction indicators	1595	115x40	735
Rear parking lights	1460	60x75	620
Rear direction indicators	1460	60x75	720
Brakes lights	1460	60x75	620
Reflectors	1460	45x75	660

[3] with tyres 380/70R20 at front and 480/70R30 at rear

2 TEST CONDITIONS

2.1 OVERALL DIMENSIONS[4]

	Length	Width		Height at top of		
		minimum	maximum	cab	frame	exhaust silencer
	mm	mm	mm	mm	mm	mm
Ballasted	3980	1900	2388	2400	2475	2320
Unballasted	3730	1900	2388	2400	2475	2320

2.2 GROUND CLEARANCE

Unballasted tractor: 380 mm
Clearance-limiting part: fuel tank

2.3 TRACTOR MASS

Mass with cab and full fuel tank

	Ballasted		Unballasted	
	without driver	with driver	without driver	with driver
	kg	kg	kg	kg
Front	1375	1400	1055	1080
Rear	2055	2105	1875	1925
Total	3430	3505	2930	3005

2.4 BALLAST

	Weights		Water
	Number	Total mass	
		kg	kg
Front weight	6	240	none
Rear wheels	4	200	none
Optional	none	none	none
Front support	1	60	none

2.5 TRACK SPECIFICATIONS

None

[4] with tyres 380/70R20 at front and 480/70R30 at rear

2.6 TYRES AND TRACK WIDTH SPECIFICATIONS

	Front	Rear
Tyres:		
- make	PIRELLI	PIRELLI
- model	TM 700	TM 700
- dimensions	380/70 R 20	480/70 R 30
- ply rating	-------	------
- load index/speed	122 A8	141 A8
- type	radial	radial
- maximum load (tyre manufacturer's)	29.43 kN	50.52 kN
- inflation pressure (tyre manufacturer's)	160 kPa	160 kPa
- dynamic radius index	510 mm	695 mm
Chosen track width:	1450 mm	1530 mm
Technically permissible axle load	21.5 kN	34.3 kN
Others tyres available	11.2R20 (111A8)	14.9R28 (128A8)
	8.3R24 (104A8)	12.4R32 (122A8)
	360/70R20 (120A8)	420/70R30 (134A8)
	11.2R24 (114A8)	12.4R36 (124A8)
	11.2R24 (114A8)	16.9R30 (137A8)
	300/70R24 (111A8)	480/70R28 (140A8)
	300/70R20 (110A8)	380/70R28 (127A8)
	320/70R20 (113A8)	420/70R28 (133A8)
	335/80R18 (151A2)	480/65R28 (129A8)
	375/75R20 (155A2)	540/65R28 (137A8)
	340/75R20 (117A8)	16.9R28 (136A8)
	8.3R24 (104A8)	9.5R36 (114A8)
	405/70R20 (155A2)	540/65R30 (138A8)
	14.9LR20 (119 A8)	16.9R30 (137A8)

2.7 FUEL

Type: ERG DIESEL oil, in conformity with national standard.
Density at 15 °C: 0.840 g/cm^3

2.8 OILS AND LUBRICANTS

2.8.1 Capacity and change interval

	Capacity	Oil change	Filter change
	dm^3	h	h
Engine with filter	7.5	300	300
Gear box with rear axle, final drive, hydraulic system and steering	42	300	when the warning lamp is lighted
Front axle	4.5	300	none
Front final drive, each (with/without brakes)	1.3	1200 or 2 years	none
Brakes	1.5	max. level	none

2.8.2 Specifications (SAE, API, CCMC, ACEA, Mil.L, ISO)

	Recommended	Used during test
Engine oil - Type: - Viscosity: - Classification:	AKROS TURBO 15 W/40 12.50 cSt API SE - CD	As recommended
Hydraulic fluid - Type: - Viscosity: - Classification	AKROS MULTI 11.50 cSt API GL 4	As recommended
Front and rear axle, final drives and gear box - Type: - Viscosity: - Classification:	AKROS MULTI 11.50 cSt API GL 4	As recommended
Steering oil - Type: - Viscosity: - Classification:	AKROS MULTI 11.50 cSt API GL 4	As recommended
Braking oil - Type: - Viscosity: - Classification:	AKROS MATIC 6.7 cSt API GL4	As recommended

2.8.3 Grease:

Type: AKROS GREASE T2 NLGI2 LITIO/Ca
Number of lubrication points: 10

3 COMPULSORY TESTS

3.1 MAIN POWER TAKE-OFF

Date and location of tests: 15nd -16rd April 1999, I.M.A., TORINO, ITALY
Type of dynamometer: Parasitic currents, BORGHI&SAVERI FA300-30SP

Power	Speed		Fuel consumption			Specific energy
	Engine	P.t.o.	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
3.1.1 MAXIMUM POWER - TWO HOUR TEST						
47.63	2300	565	12.11	14.42	254	3.30
3.1.2 POWER AT RATED ENGINE SPEED						
47.63	2300	565	12.11	14.42	254	3.30
3.1.3 STANDARD POWER TAKE OFF SPEED (540±10 rev/min)						
47.48	2203	541	11.80	14.05	249	3.38
3.1.4 PART LOADS						
3.1.4.1 the torque corresponding to maximum power at rated engine speed						
47.63	2300	565	12.11	14.42	254	3.30
3.1.4.2 85% of torque obtained in 3.1.4.1						
42.08	2402	590	11.16	13.29	265	3.17
3.1.4.3 75% of torque defined in 3.1.4.2						
31.89	2427	596	9.07	10.80	284	2.95
3.1.4.4 50% of torque defined in 3.1.4.2						
21.29	2435	598	7.08	8.43	333	2.53
3.1.4.5 25% of torque defined in 3.1.4.2						
10.87	2471	607	5.27	6.27	485	1.73
3.1.4.6 unloaded						
-	2504	615	3.58	4.26	-	-

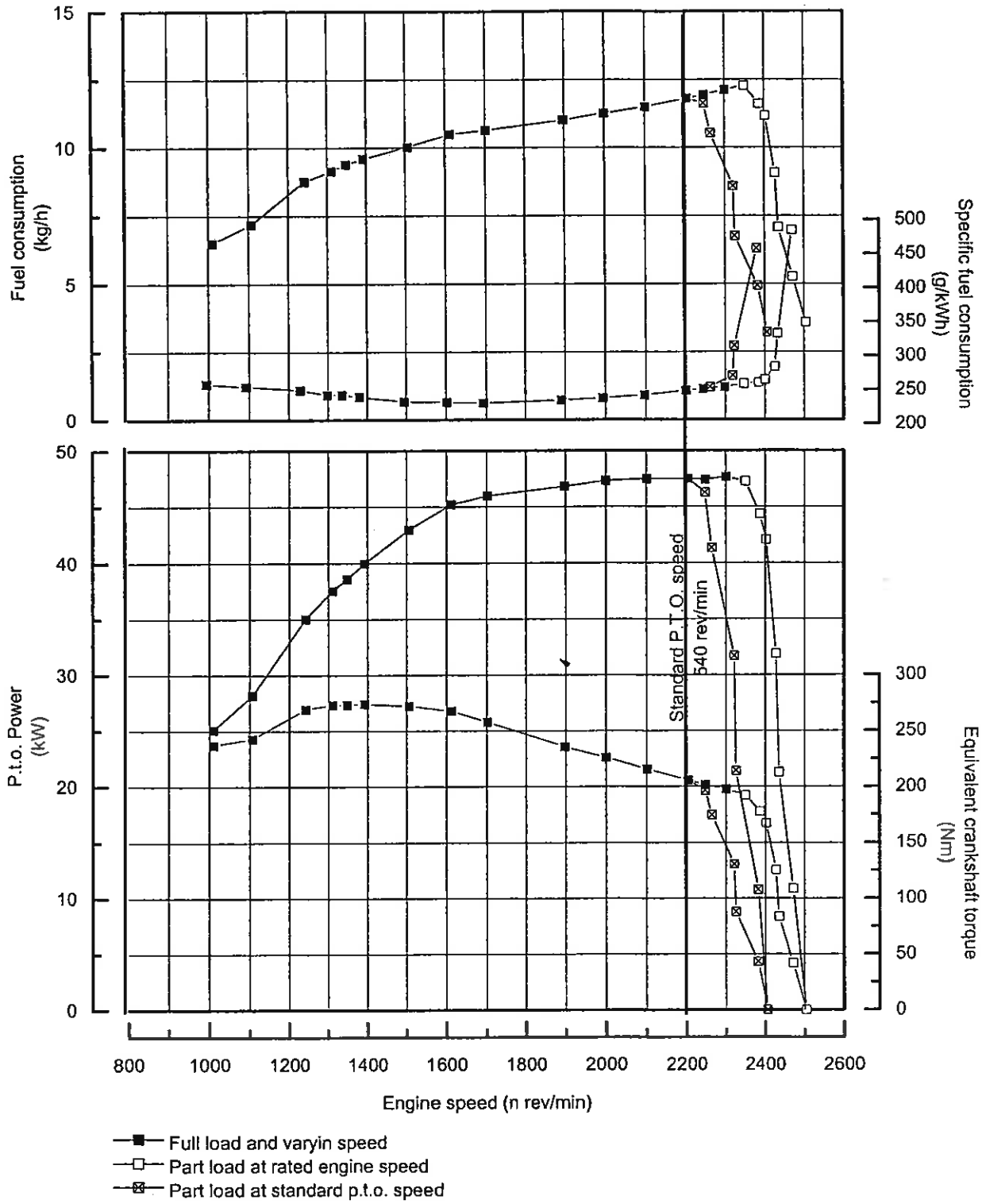
Power	Speed		Fuel consumption			Specific energy
	Engine	P.t.o.	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
3.1.5 PART LOADS AT STANDARD POWER TAKE OFF SPEED (540±10 rev/min)						
3.1.5.1 the torque corresponding to maximum power						
47.48	2203	541	11.80	14.05	249	3.38
3.1.5.2 85% of torque obtained in 3.1.5.1						
41.34	2264	556	10.52	12.52	254	3.30
3.1.5.3 75% of torque defined in 3.1.5.2						
31.70	2321	570	8.58	10.21	271	3.10
3.1.5.4 50% of torque defined in 3.1.5.2						
21.41	2325	571	6.75	8.04	315	2.66
3.1.5.5 25% of torque defined in 3.1.5.2						
10.78	2382	585	4.94	5.88	458	1.83
3.1.5.6 unloaded						
-	2406	591	3.22	3.83	-	-

No load maximum engine speed: 2504 rev/min
Torque (equivalent crankshaft) at maximum power:
- at rated engine: 197.72 Nm
- at standard power take-off speed: 205.83 Nm

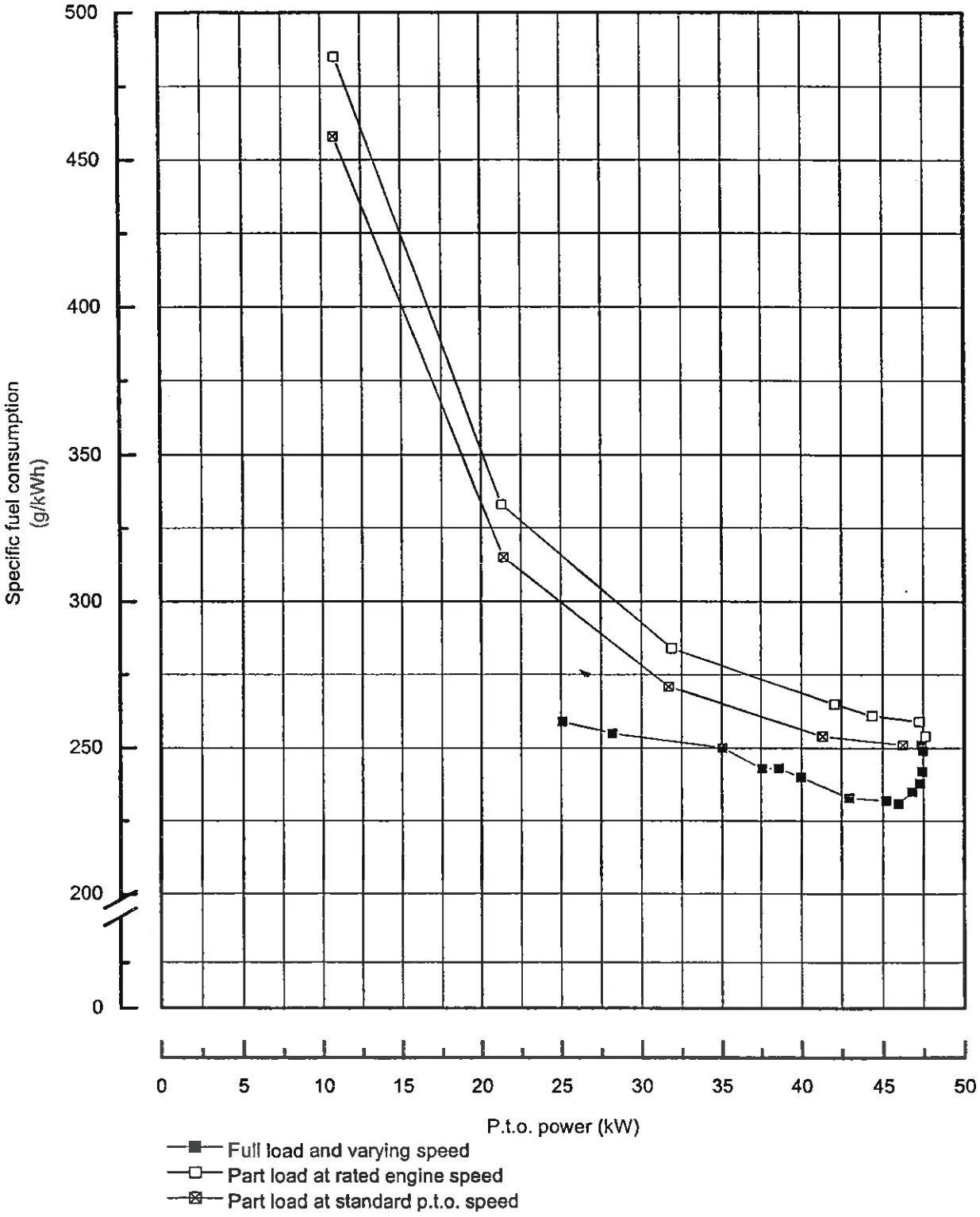
Maximum torque (equivalent crankshaft): 274.11 Nm at 1392 rev/min of the engine

Mean atmospheric conditions	
Temperature	21 °C
Pressure	98.0 kPa
Relative humidity	65 %
Maximum temperature	
Coolant	82.9 °C
Engine oil	107.9 °C
Fuel	31.4 °C
Engine air intake	22.6 °C

Graph 1. Power take-off test



Graph 2. Power take-off test



3.2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests: 1st July 1999

3.2.1 Hydraulic Power Test

Sustained pressure with relief valve open: 20.8 MPa
Pump stalled: no
Pump delivery rate at minimum pressure: 64.9 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	25.1	18.7	7.8
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	55.0	16.6	15.2

Tapping point used for test: at rear of tractor
Temperature of hydraulic fluid: 65 °C
Opening pressure of the unloading valve: not applicable
Closing pressure of the unloading valve: not applicable

3.2.2 Power lift test

3.2.2.1 Rear power lift

Rear power lift linkage settings for test - see Table 1 and Figure 1

	at the hitch point	on the frame
Height of lower hitch points above ground in down position	200 mm	200 mm
Vertical movement		
- with lifting force	570 mm	570 mm
- without lifting force	600 mm	600 mm
Maximum corrected force exerted through full range	19.60 kN	18.01 kN
Corresponding pressure of hydraulic fluid	18.7 MPa	18.7 MPa
Moment about rear-wheel axis	20.28 kNm	29.62 kNm
Maximum tilt angle of mast from the vertical	none	1 degrees

Lifting heights relative to the horizontal plane including the lower pivot points								
Mm	-305	-250	-200	-100	0	100	200	265
Lifting forces								
at the hitch points kN	28.25	27.06	26.79	25.77	25.37	23.25	22.11	19.60
Corresponding pressure: 18.7MPa								
at the frame kN	20.99	21.70	22.48	23.24	23.80	23.50	23.59	18.01
Corresponding pressure: 18.7 MPa								

3.3 DRAWBAR POWER TEST (ballasted and unballasted tractor)

Date of tests: 22-26th March 1999
Type of track:. Asphalt

	Height of hitch above ground	Tyre inflation pressure	
		Front	Rear
Unballasted	465 mm	160 kPa	160 kPa
Ballasted	460 mm	160 kPa	160 kPa

Gear and range	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmospheric conditions		
								Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
3.3.1 MAXIMUN POWER IN TESTED GEARS (unballasted tractor)													
1 Slow	16.04	26.29	2.20	2475	14.99	447	1.879	13	80	118	8	70	98.4
2 Slow	23.75	26.49	3.23	2438	15.01	380	2.208	13	81	122	8	70	98.4
3 Slow	34.83	26.49	4.73	2430	14.98	350	2.398	14	82	127	9	65	98.4
4 Slow	40.13	19.52	7.40	2320	5.80	315	2.665	15	82	126	9	65	98.4
1 Fast	40.65	16.19	9.04	2320	4.82	305	2.750	17	81	127	10	70	98.4
2 Fast	39.84	10.40	13.79	2320	2.92	308	2.724	17	81	125	10	70	98.4
3.3.2 MAXIMUN POWER IN TESTED GEARS (ballasted tractor)[5]													
1 Slow	17.88	29.92	2.15	2475	15.16	427	1.968	23	81	121	15	20	98.3
2 Slow	27.26	29.72	3.30	2438	15.03	366	2.294	24	82	123	15	20	98.3
3 Slow	37.72	29.23	4.64	2320	12.40	330	2.546	24	82	124	15	20	98.3
4 Slow	41.00	19.42	7.60	2320	5.43	302	2.780	24	81	126	15	20	98.3
1 Fast	40.35	16.09	9.03	2320	4.37	304	2.768	25	80	127	16	20	98.3
2 Fast	40.76	10.40	14.11	2320	2.61	301	2.794	24	80	126	16	20	98.3
3.3.3 FIVE HOURS TESTS													
3.3.3.1 HOUR TEST at 75% of pull at maximum power													
4 Slow	32.46	14.67	7.97	2434	3.82	326	2.575	22	80	125	16	30	97.8
3.3.3.2 FIVE HOUR TEST at pull corresponding to 15% wheelslip – with 240 kg as additional ballast													
2 Slow	28.26	29.72	3.42	2442	8.90	⌘	⌘	25	80	125	15	25	97.4

⌘ The test was carried out with additional ballast; the not quoted figures are irrelevant

Oil consumption during ten hours duration of test 3.3.3.1and 3.3.3.2: 7.5 g/h

[5] Gear giving a forward speed higher than 15 km/h have not been tested because exceeding the safety limits of testing equipment

3.4 TURNING AREA AND TURNING CIRCLE[6]

Wheels equipment:
- front: 380/70 R 20 122 A8
- rear: 480/70 R 30 141 A8

Track width:
- front: 1450 mm
- rear: 1530 mm

	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	Left-hand
	m	m	m	m
Radius of turning area	3.70	3.70	4.40	4.45
Radius of turning circle	3.55	3.60	4.30	4.35

3.5 LOCATION OF CENTRE OF GRAVITY

Height above ground	820 mm
Distance forward from the vertical plane, containing the axis of the rear wheels	745 mm
Distance from the median plane of the tractor: to the left	10 mm

3.6 BRAKING

Date of tests: 2nd June1999
Type of track: asphalt
Type of decelerometer: DATRON

3.6.1 Cold service braking device test

Unballasted tractor		
Speed before application of brake	Braking device control force	Mean deceleration
km/h	kN	m/s^2
33	0.14	1,31
33	0.20	1,75
33	0.30	2,27
33	0.35	2,59
33	0.39	2,76
33	0.45	2,94
33	0.50	3,23

[6] For tractor equipped with normal steer

Ballasted tractor		
Speed before application of brake	Braking device control force	Mean deceleration
km/h	kN	m/s^2
32	0.10	1,32
33	0.20	2,10
33	0.30	2,63
33	0.35	3,09
33	0.40	3,36
33	0.50	3,56

Maximum deviation of the tractor from its original course: none
Abnormal vibration: none

3.6.2 Fade test

Speed before application of brake	Braking device control force	Mean deceleration
km/h	kN	m/s^2
33	0.15	1,50
33	0.24	2,23
33	0.34	2,55
33	0.40	2,90
33	0.45	3,00
33	0.50	3,07

Maximum deviation of the tractor from its original course: none
Abnormal vibration: none
Brake heating method: by means of towing the tractor for 1 km at 25 km/h with a towing force of 3.3 kN

3.6.3 Parking braking device test

	Uphill	Downhill
Braking device control force	0.21 kN	0.21 kN

3.7 MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of tests: 1st October 1998- I.M.A. - TORINO
Sound level meter make, model and type: RION make, NA 29 E model, impulse precision type
Type of track: asphalt
Gear number: 4 Fast
Travelling speed before acceleration: 22.5 km/h
Sound level: 84.9 dB(A) (on the left side)
84.9 dB(A) (on the right side)

4 OPTIONAL TESTS RESULTS

none

5 REPAIRS

none

6 REMARKS

Test results are applicable to all tractor versions quoted on the cover.

7 ANNEX

none

The Head of the Section

E. CAVALLO

The Director

P. PICCAROLO

Torino, 28th December 1999