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

OECD Approval No.: 1/1 901
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TEST IN ACCORDANCE WITH THE CODE 1 FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS

Make:	**New Holland**	**Fiatagri**	**Ford**
Trade Name:	**TN 55D**	**TN 55D**	**TN 55D**
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:	**9450C7A3AGH**	**9450C723AGH**	**9450C733AGH**



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 9450XXXXXXX 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

Groups | **Explanation**

94	50	C	7	3	4	AA	P

Trailer brake

M	=	Mechanical
H	=	Hydraulic
P	=	Pneumatic
X	=	(*)

Transmission

AA	=	16+16
AB	=	28+16
AC	=	32+16
AD	=	44+16
AE	=	32+16 PS/Hi-Lo
AF	=	44+16 PS/Hi-Lo
AG	=	8+8
AH	=	8+8 PS
XX	=	(**)

Speed

3	=	30 km/h
4	=	40 km/h
X	=	(*)

Commercial denomin.

2	=	Fiatagri TN 55 D
3	=	Ford TN 55 D
4	=	Fiatagri TN 65 D
5	=	Ford TN 65 D
6	=	Fiatagri TN 75 D
7	=	Ford TN 75 D
D	=	Fiatagri TN 55 S
E	=	Ford TN 55 S
F	=	Fiatagri TN 65 S
G	=	Ford TN 65 S
R	=	Fiatagri TN 75 S
T	=	Ford TN 75 S
A	=	TN55D
B	=	TN55S
C	=	TN65D
M	=	TN65S
N	=	TN75D
P	=	TN75S
Z	=	2+3+D+E+A+B
W	=	4+5+F+G+C+M
K	=	6+7+R+T+N+P
X	=	(*)

Version

2	=	2WD
7	=	4WD Normal Steer
L	=	4WD N.S. with front lift
S	=	4WD Super Steer
U	=	4WD S.S. With front lift
X	=	(*)

Safety structure

R	=	ROPS
C	=	Cab
A	=	Reversible ROPS
B	=	Reversible Cab
X	=	(*)

Engine power

50	=	50 HP
60	=	60HP
72	=	72HP
xx	=	(*)

Tractor serie

(*) 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 55D
Type:	4 WD, 30 km/h, 8+8 speeds
Number of driving wheels:	4
Manufacturer denomination:	9450C7A3AGH
Serial No.:	001152084
1st serial N°:	001133008

1.2 ENGINE

Make:	NEW HOLLAND ITALIA S.p.A.
Model:	IVECO 8035.05B
Type:	direct injection, compression ignition, 4 cycle
Serial N°:	529-481556

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:	none

1.2.3 Fuel system

Fuel feed system:	rotary injection pump with centrifugal speed governor, operating at all speed and incorporating automatic advance
Make, model and type of fuel filter(s):	N° 1mesh filter in the fuel pump N° 1 replaceable cartridge filter on the injection pump feed line
Capacity of fuel tank:	70 l, placed under the tractor platform, on the left side
Make, model and type of injection pump:	BOSCH make, L767 type, rotary injection pump As option BOSCH make, VE3/11F1150LV13641 type, rotary injection pump
Serial N°:	31891

Manufacturer's production setting of injection pump:	
-flow rate:	4.98±2 mm^3/stroke at rated speed and full load corresponding 10.26 dm^3/h
-timing:	9°±0.5° before TDC
Make, model and type of injectors:	BOSCH make, DLLA 132 S type, multihole injection nozzles
Injection pressure:	26.0±1 MPa
Make, model and 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:	665-2500 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 filter on engine intake.
Number of filters:	1

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 operated
Starter motor power rating:	3.5 kW
Cold starting aid:	LUCAS make, Thermostart type
Safety device:	clutch engagement

1.2.9 Electrical system

Voltage:	12 V, negative earth
Generator	
- Make:	MARELLI
- Model:	Alternator
- Type:	AA 108
- 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	ALCOM make, 5172649 type, 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:	2268 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:	none
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); As option 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

	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	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:	button placed on the dashboard

1.3.5 Total ratios and travelling speeds[1]

NEW HOLLAND TN 55D 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	241.547	2.296
2	Slow	162.038	3.423
3	Slow	110.230	5.032
4	Slow	74.405	7.454
1	Fast	61.681	8.992
2	Fast	41.377	13.405
3	Fast	28.148	19.705
4	Fast	19.000	29.192

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	249.339	2.224
2	Slow	167.265	3.316
3	Slow	113.785	4.875
4	Slow	76.805	7.222
1	Fast	63.670	8.711
2	Fast	42.712	12.986
3	Fast	29.056	19.089
4	Fast	19.612	28.281

Number of revolutions of front wheels for one revolution of rear wheels: 1.402

[1] Calculated with rear tyre 14.9R28 with dynamic radius index of 640 mm (ISO 4251/1-1998)

NEW HOLLAND TN 55D 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	916.280	0.605
2	Slow	614.671	0.902
3	Slow	418.144	1.326
4	Slow	282.247	1.965
1	Medium slow	218.006	2.544
2	Medium slow	146.246	3.793
3	Medium slow	99.487	5.575
4	Medium slow	67.154	8.259
1	Medium fast	178.082	3.115
2	Medium fast	119.464	4.643
3	Medium fast	81.268	6.825
4	Medium fast	54.856	10.118
1	Fast	61.681	8.992
2	Fast	41.378	13.404
3	Fast	28.148	19.705
4	Fast	19.000	29.192

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	945.838	0.586
2	Slow	634.500	0.874
3	Slow	431.632	1.285
4	Slow	291.352	1.904
1	Medium slow	225.038	2.465
2	Medium slow	150.963	3.674
3	Medium slow	102.696	5.401
4	Medium slow	69.320	8.001
1	Medium fast	183.827	3.017
2	Medium fast	123.317	4.498
3	Medium fast	83.889	6.612
4	Medium fast	56.625	9.795
1	Fast	63.671	8.711
2	Fast	42.713	12.985
3	Fast	29.056	19.089
4	Fast	19.613	28.280

Number of revolutions of front wheels for one revolution of rear wheels: 1.402

NEW HOLLAND TN 55D 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	3536.520	0.157
2 Creeper	Slow	2372.420	0.234
3 Creeper	Slow	1613.890	0.344
4 Creeper	Slow	1089.370	0.509
1 Creeper	Medium slow	841.426	0.659
2 Creeper	Medium slow	564.457	0.983
3 Creeper	Medium slow	383.984	1.444
4 Creeper	Medium slow	259.189	2.140
1 Creeper	Medium fast	687.335	0.807
2 Creeper	Medium fast	461.087	1.203
3 Creeper	Medium fast	313.665	1.768
4 Creeper	Medium fast	211.724	2.620
1	Slow	915.280	0.606
2	Slow	614.671	0.902
3	Slow	418.144	1.326
4	Slow	282.247	1.965
1	Medium slow	218.006	2.544
2	Medium slow	146.246	3.793
3	Medium slow	99.487	5.575
4	Medium slow	67.154	8.259
1	Medium fast	178.082	3.115
2	Medium fast	119.464	4.643
3	Medium fast	81.268	6.825
4	Medium fast	54.856	10.111
1	Fast	61.681	8.992
2	Fast	41.378	13.404
3	Fast	28.148	19.705
4	Fast	19.000	29.192

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	945.838	0.586
2	Slow	634.500	0.874
3	Slow	431.632	1.285
4	Slow	291.352	1.904
1	Medium slow	225.038	2.465
2	Medium slow	150.963	3.674
3	Medium slow	102.696	5.401
4	Medium slow	69.320	8.001
1	Medium fast	183.827	3.017
2	Medium fast	123.317	4.498
3	Medium fast	83.889	6.612
4	Medium fast	56.625	9.795
1	Fast	63.671	8.711
2	Fast	42.713	12.985
3	Fast	29.056	19.089
4	Fast	19.613	28.280

Number of revolutions of front wheels for one revolution of rear wheels: 1.402

NEW HOLLAND TN 55D 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	1099.540	0.504
1 HI	Slow	916.280	0.605
2 LO	Slow	737.606	0.752
2 HI	Slow	614.671	0.902
3 LO	Slow	501.773	1.105
3 HI	Slow	418.144	1.326
4 LO	Slow	338.697	1.638
4 HI	Slow	282.247	1.965
1 LO	Medium slow	261.607	2.120
1 HI	Medium slow	218.006	2.544
2 LO	Medium slow	175.495	3.160
2 HI	Medium slow	146.246	3.793
3 LO	Medium slow	119.384	4.646
3 HI	Medium slow	99.487	5.575
4 LO	Medium slow	80.584	6.883
4 HI	Medium slow	67.154	8.259
1 LO	Medium fast	213.699	2.595
1 HI	Medium fast	178.082	3.115
2 LO	Medium fast	143.356	3.869
2 HI	Medium fast	119.464	4.643
3 LO	Medium fast	97.521	5.687
3 HI	Medium fast	81.268	6.825
4 LO	Medium fast	65.827	8.426
4 HI	Medium fast	54.856	10.111
1 LO	Fast	74.017	7.497
1 HI	Fast	61.681	8.997
2 LO	Fast	49.653	11.176
2 HI	Fast	41.378	13.411
3 LO	Fast	33.778	16.429
3 HI	Fast	28.148	19.714
4 LO	Fast	22.800	24.339
4 HI	Fast	19.000	29.208

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	945.838	0.586
2	Slow	634.500	0.874
3	Slow	431.632	1.285
4	Slow	291.352	1.904
1	Medium slow	225.038	2.465
2	Medium slow	150.963	3.674
3	Medium slow	102.696	5.401
4	Medium slow	69.320	8.001
1	Medium fast	183.827	3.017
2	Medium fast	123.317	4.498
3	Medium fast	83.889	6.612
4	Medium fast	56.625	9.795
1	Fast	63.671	8.711
2	Fast	42.713	12.985
3	Fast	29.056	19.089
4	Fast	19.613	28.280

Number of revolutions of front wheels for one revolution of rear wheels: 1.402

NEW HOLLAND TN 55D 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	3536.520	0.157
2 Creeper	Slow	2372.420	0.234
3 Creeper	Slow	1613.890	0.344
4 Creeper	Slow	1089.370	0.509
1 Creeper	Medium slow	841.426	0.659
2 Creeper	Medium slow	564.457	0.983
3 Creeper	Medium slow	383.984	1.444
4 Creeper	Medium slow	259.189	2.140
1 Creeper	Medium fast	687.335	0.807
2 Creeper	Medium fast	461.087	1.203
3 Creeper	Medium fast	313.665	1.768
4 Creeper	Medium fast	211.724	2.620
1 Splitter	Slow	1099.540	0.504
2 Splitter	Slow	916.280	0.605
3 Splitter	Slow	737.606	0.752
4 Splitter	Slow	614.671	0.902
1 Splitter	Medium slow	501.773	1.105
2 Splitter	Medium slow	418.144	1.326
3 Splitter	Medium slow	338.697	1.638
4 Splitter	Medium slow	282.247	1.965
1 Splitter	Medium fast	261.607	2.120
2 Splitter	Medium fast	218.008	2.544
3 Splitter	Medium fast	175.495	3.160
4 Splitter	Medium fast	146.246	3.793
1 Splitter	Fast	119.384	4.646
2 Splitter	Fast	99.487	5.575
3 Splitter	Fast	80.584	6.883
4 Splitter	Fast	67.154	8.259
1	Slow	213.699	2.595
2	Slow	178.082	3.115
3	Slow	143.356	3.869
4	Slow	119.464	4.643
1	Medium slow	97.521	5.687
2	Medium slow	81.268	6.825
3	Medium slow	65.827	8.426
4	Medium slow	54.856	10.111
1	Medium fast	74.017	7.494
2	Medium fast	61.681	8.992
3	Medium fast	49.653	11.171
4	Medium fast	41.378	13.404
1	Fast	33.778	16.420
2	Fast	28.148	19.705
3	Fast	22.800	24.327
4	Fast	19.000	29.192

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	945.838	0.586
2	Slow	634.500	0.874
3	Slow	431.632	1.285
4	Slow	291.352	1.904
1	Medium slow	225.038	2.465
2	Medium slow	150.963	3.674
3	Medium slow	102.696	5.401
4	Medium slow	69.320	8.001
1	Medium fast	183.827	3.017
2	Medium fast	123.317	4.498
3	Medium fast	83.889	6.612
4	Medium fast	56.625	9.795
1	Fast	63.671	8.711
2	Fast	42.713	12.985
3	Fast	29.058	19.089
4	Fast	19.613	28.280

Number of revolutions of front wheels for one revolution of rear wheels: 1.402

NEW HOLLAND TN 55D 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	2349.440	0.236
2 Creeper	Slow	1576.080	0.352
3 Creeper	Slow	1072.160	0.517
4 Creeper	Slow	723.711	0.766
1 Creeper	Medium slow	558.989	0.992
2 Creeper	Medium slow	374.989	1.479
3 Creeper	Medium slow	255.094	2.174
4 Creeper	Medium slow	172.189	3.221
1 Creeper	Medium fast	456.621	1.215
2 Creeper	Medium fast	306.317	1.811
3 Creeper	Medium fast	208.379	2.662
4 Creeper	Medium fast	140.656	3.943
1 LO	Slow	1099.540	0.504
1 HI	Slow	916.280	0.605
2 LO	Slow	737.308	0.752
2 HI	Slow	614.671	0.902
3 LO	Slow	501.773	1.105
3 HI	Slow	418.144	1.326
4 LO	Slow	338.697	1.638
4 HI	Slow	282.247	1.965
1 LO	Medium slow	261.607	2.120
1 HI	Medium slow	218.006	2.544
2 LO	Medium slow	175.495	3.160
2 HI	Medium slow	146.246	3.793
3 LO	Medium slow	119.384	4.646
3 HI	Medium slow	99.487	5.575
4 LO	Medium slow	80.584	6.883
4 HI	Medium slow	87.154	6.634
1 LO	Medium fast	213.699	2.595
1 HI	Medium fast	178.082	3.115
2 LO	Medium fast	143.358	3.869
2 HI	Medium fast	119.464	4.643
3 LO	Medium fast	97.521	5.687
3 HI	Medium fast	81.268	6.825
4 LO	Medium fast	65.827	8.426
4 HI	Medium fast	54.856	10.111
1 LO	Fast	74.017	7.494
1 HI	Fast	61.681	8.992
2 LO	Fast	49.853	11.126
2 HI	Fast	41.378	13.404
3 LO	Fast	33.776	16.421
3 HI	Fast	28.148	19.705
4 LO	Fast	22.800	24.327
4 HI	Fast	19.000	29.192

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	945.838	0.586
2	Slow	634.500	0.874
3	Slow	431.632	1.285
4	Slow	291.352	1.904
1	Medium slow	225.038	2.465
2	Medium slow	150.963	3.674
3	Medium slow	102.696	5.401
4	Medium slow	69.320	8.001
1	Medium fast	183.827	3.017
2	Medium fast	123.317	4.498
3	Medium fast	83.889	6.612
4	Medium fast	56.625	9.795
1	Fast	63.671	8.711
2	Fast	42.713	12.985
3	Fast	29.058	19.089
4	Fast	19.613	28.280

Number of revolutions of front wheels for one revolution of rear wheels: 1.402

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 side 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	609 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):	565 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:	609 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:	15.23
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:	25.98
Direction of rotation (viewed from behind tractor):	clockwise

1.4.2 Optional power take-off

None, 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. NEW HOLLAND ITALIA S.p.A. make, C 42 type (delivery rate of 47.4 l/min with pump at 2484 rpm, as stated by the tractor manufacturer) As option 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

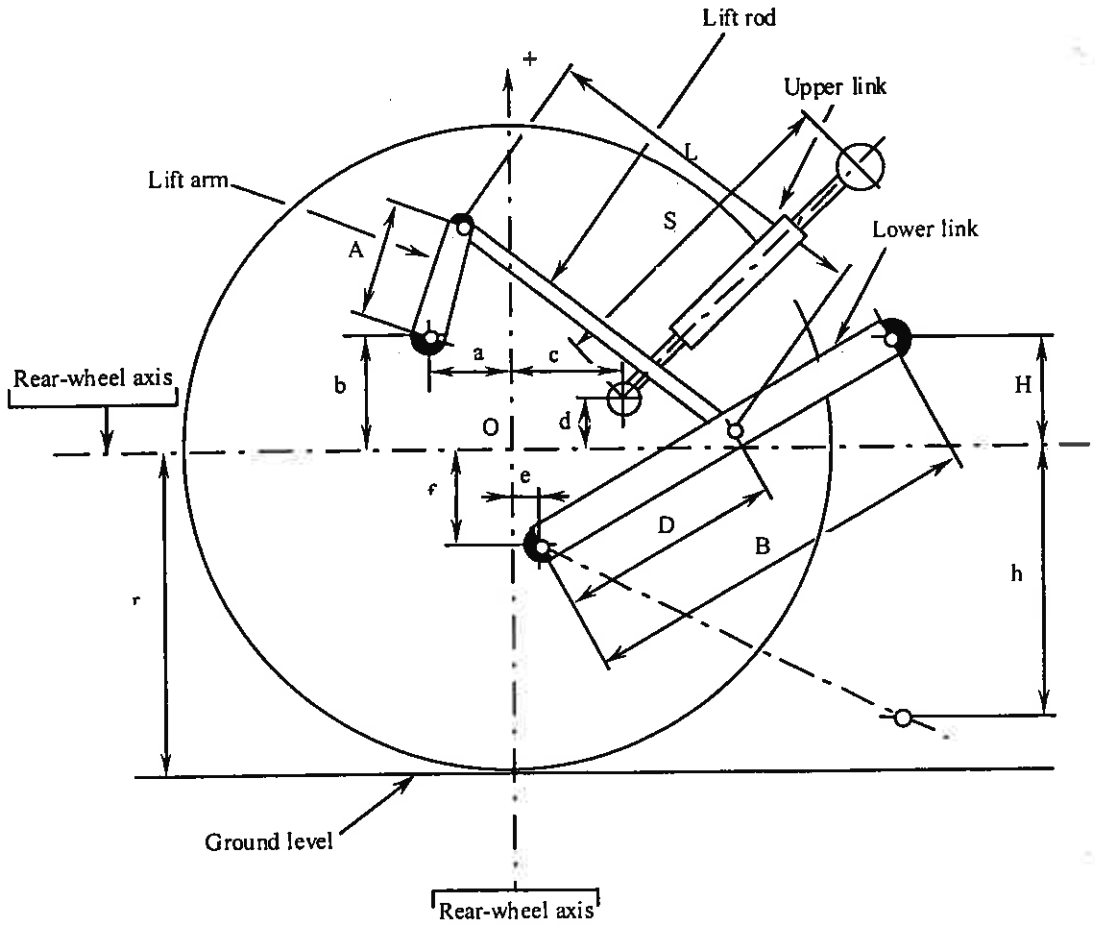
Category: 2nd, implement attachment with three point linkage and lower links with quick connection, in conformity with I.S.O. STANDARD 730/I-1994

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	700
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	660
Height of lower hitch points relative to the rear wheel axis:			
- in low position	(h)	440	440
- in high position	(H)	105	105
Height above ground of lower hitch points when locked in transport position[2]		745	745

[2] Assuming the dynamic radius index of 14.9R28 tyres: 640 mm (ISO 4251/1-1992)



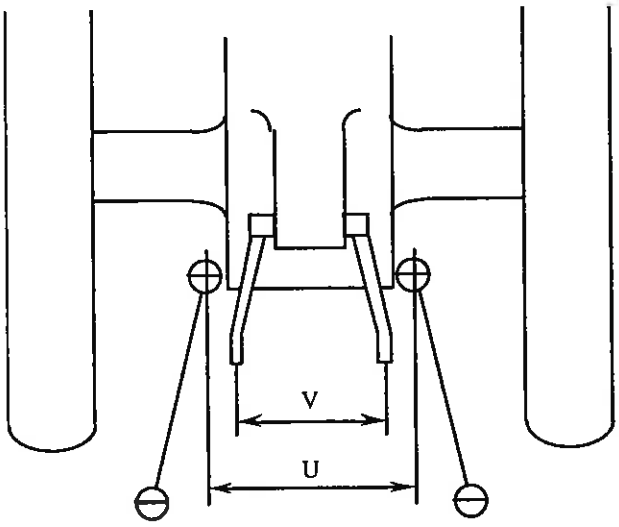


Figure 1. Lift test- Rear linkage geometry

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:	400 mm
- maximum:	904 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 testes tractor. Available as option

1.10 STEERING

Make, model and 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 and model:	NEW HOLLAND ITALIA S.p.A. make, 694.130.000 model
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	1278	1957	Changing the position of the rims with respect to the disc
Rear	1222	1925	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 and 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	1120	225x100	280
Front parking lights	1490	115x35	735
Front direction indicators	1530	115x40	735
Rear parking lights	1375	60x75	620
Rear direction indicators	1375	60x75	720
Brakes lights	1375	60x75	620

[3] with front tyres 11.2R20 and rear tyres 14.9R28

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	1794	2305	2310	2420	2270
Unballasted	3730	1794	2305	2310	2420	2270

2.2 GROUND CLEARANCE

Unballasted tractor: 330 mm
Clearance-limiting part: fuel tank

2.3 TRACTOR MASS

Mass with cab, normal steer and full fuel tank

	Ballasted		Unballasted	
	without driver	with driver	without driver	with driver
	kg	kg	kg	kg
Front	1355	1380	1035	1060
Rear	2045	2095	1865	1915
Total	3400	3475	2900	2975

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 front tyres 11.2R20 and rear tyres 14.9R28

2.6 TYRES AND TRACK WIDTH SPECIFICATIONS

	Front	Rear
Tyres:		
- make	TAURUS	TAURUS
- model	POINT 8	POINT 8
- dimensions	11.2R20	14.9R28
- ply rating	------	------
- load index/speed	111 A8	128 A8
- type	radial	radial
- maximum load (tyre manufacturer's)	21.38 kN	35.31 kN
- inflation pressure (tyre manufacturer's)	160 kPa	160 kPa
- dynamic radius index	465 mm	640 mm
Chosen track width:	1565 mm	1525 mm
Technically permissible axle load	19.62 kN	29.43 kN
Others tyres available	300/70R20 (110A8)	13.6R28 (123A8)
	8.3R24 (104A8)	12.4R32 (122A8)
	300/70R20 (110A8)	380/70R28(127A8)
	320/70R20 (113A8)	420/70R28 (133A8)
	360/70R20 (120A8)	420/70R30 (134A8)
	12.4R20 (116A8)	14.9R30 (129A8)
	335/80R18 (151A2)	480/65R28 (129A8)
	8.3R24 (104A8)	9.5R36 (114A8)

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: 12nd -13rd 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						
32.13	2300	565	8.62	10.26	268	3.09
3.1.2 POWER AT RATED ENGINE SPEED						
32.13	2300	565	8.62	10.26	268	3.09
3.1.3 STANDARD POWER TAKE OFF SPEED (540±10 rev/min)						
31.84	2202	541	8.44	10.05	265	3.13
3.1.4 PART LOADS						
3.1.4.1 the torque corresponding to maximum power at rated engine speed						
32.13	2300	565	8.62	10.26	268	3.09
3.1.4.2 85% of torque obtained in 3.1.4.1						
28.54	2401	590	7.47	8.89	262	3.17
3.1.4.3 75% of torque defined in 3.1.4.2						
21.49	2414	593	6.42	7.64	299	2.78
3.1.4.4 50% of torque defined in 3.1.4.2						
14.56	2450	602	4.99	5.94	343	2.42
3.1.4.5 25% of torque defined in 3.1.4.2						
7.32	2475	608	3.84	4.57	524	1.58
3.1.4.6 unloaded						
-	2491	612	2.82	3.36	-	-

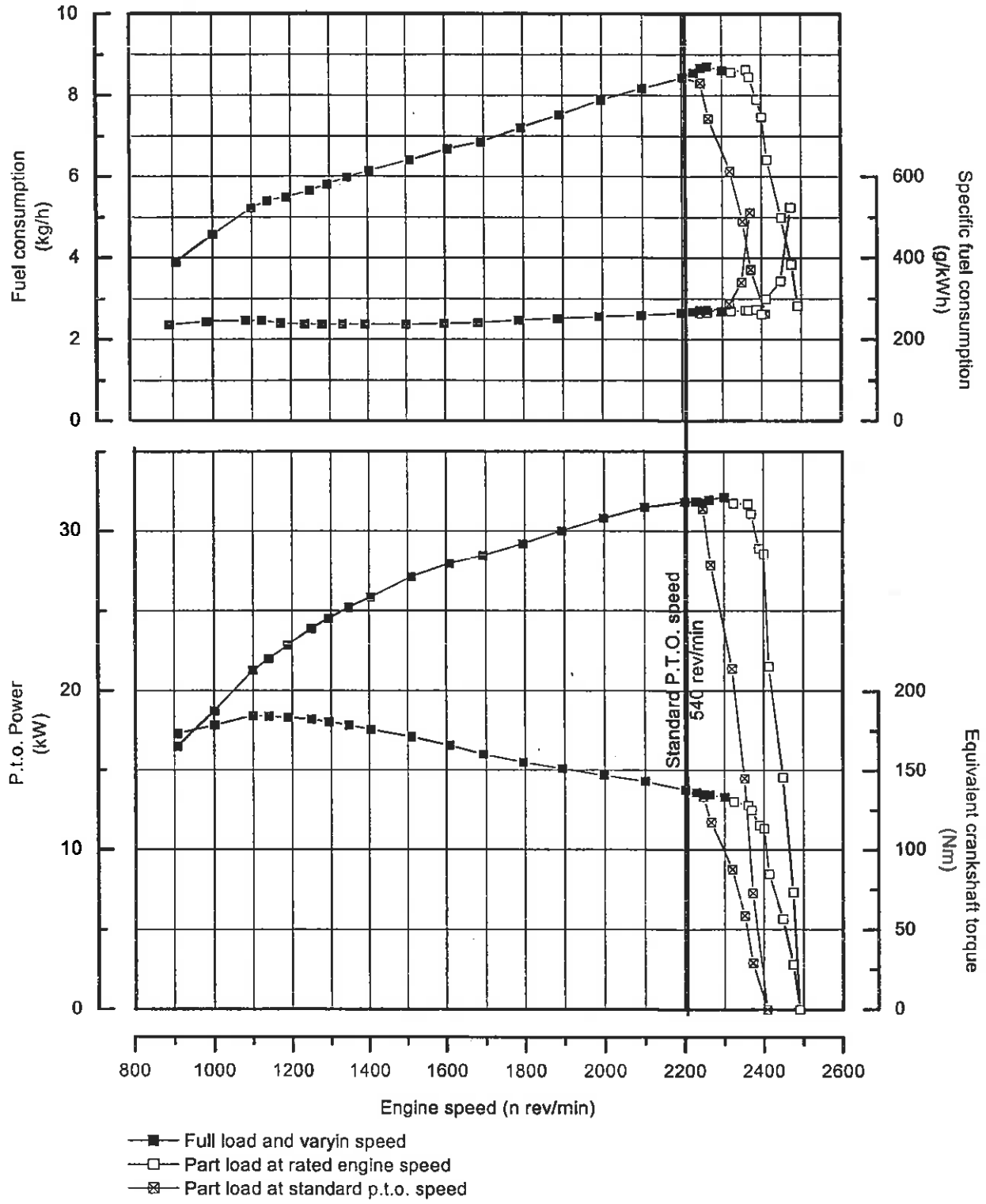
Power	Speed		Fuel consumption			Specific energy
	Engine	P.t.o.	Hourly		Specific	
KW	rev/min		kg/h	l/h	g/kWh	KWh/l
3.1.5 PART LOADS AT STANDARD POWER TAKE OFF SPEED (540±10 rev/min)						
3.1.5.1 the torque corresponding to maximum power						
31.84	2202	541	8.44	10.05	265	3.13
3.1.5.2 85% of torque obtained in 3.1.5.1						
27.88	2267	557	7.43	8.85	266	3.11
3.1.5.3 75% of torque defined in 3.1.5.2						
21.37	2320	570	6.13	7.30	287	2.89
3.1.5.4 50% of torque defined in 3.1.5.2						
14.47	2352	578	4.90	5.83	339	2.45
3.1.5.5 25% of torque defined in 3.1.5.2						
7.27	2373	583	3.71	4.42	511	1.63
3.1.5.6 unloaded						
-	2409	592	2.63	3.13	-	-

No load maximum engine speed: 2491 rev/min
Torque (equivalent crankshaft) at maximum power:
- at rated engine: 133.42 Nm
- at standard power take-off speed: 138.08 Nm

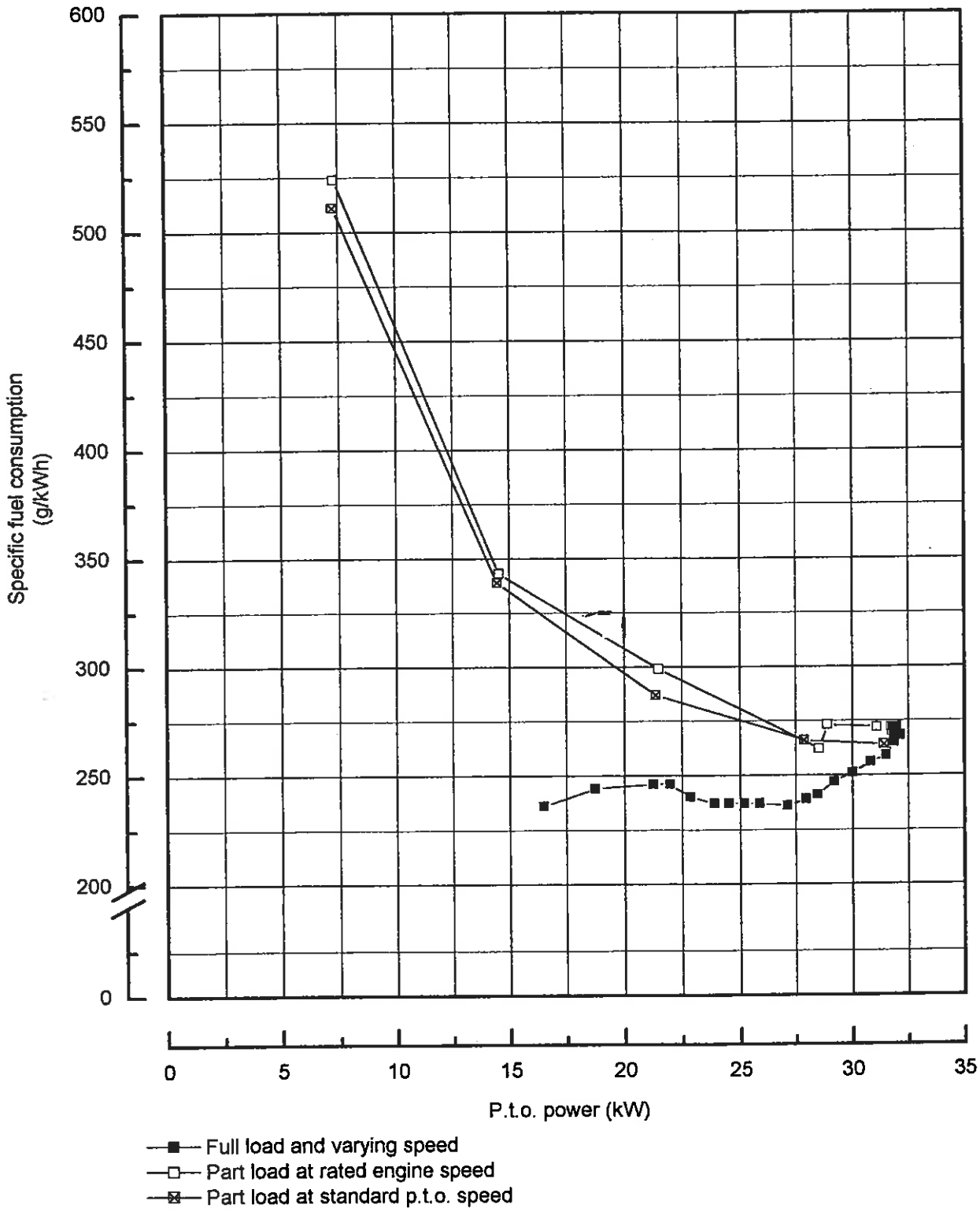
Maximum torque (equivalent crankshaft): 184.77 Nm at 1099 rev/min of the engine

Mean atmospheric conditions	
Temperature	18 °C
Pressure	98.6 kPa
Relative humidity	60 %
Maximum temperature	
Coolant	80.2° C
Engine oil	98.6° C
Fuel	26.8° C
Engine air intake	20.5° 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: 48.1 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	33.7	18.7	10.50
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	42.8	17.5	12.48

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	515 mm	515 mm
- without lifting force	545 mm	545 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	-250	-200	-100	+0	+100	+200	+265
Lifting forces							
at the hitch points kN	27.06	26.79	25.77	25.37	23.25	22.11	19.60
Corresponding pressure: 18.7 MPa							
at the frame kN	21.70	22.48	23.24	23.28	25.50	23.59	18.01
Corresponding pressure: 18.7 MPa							

3.3 DRAWBAR POWER TEST (ballasted and unballasted tractor)

Date of tests: 7-11 June 1999
Type of track:. Asphalt

	Height of hitch above ground	Tyre inflation pressure	
		Front	Rear
Unballasted	460 mm	160 kPa	160 kPa
Ballasted	455 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	10.83	18.84	2.07	2450	15.3	470	1.787	31	81	113	21	65	99.9
2 Slow	17.72	20.85	3.06	2414	14.9	389	2.157	30	82	113	22	60	99.9
3 Slow	25.70	19.77	4.68	2300	9.6	341	2.467	31	82	114	23	40	99.9
4 Slow	25.88	13.00	7.17	2300	4.6	335	2.509	31	81	114	24	55	99.9
1 Fast	26.26	10.89	8.68	2300	3.3	326	2.575	32	81	116	24	50	99.9
2 Fast	23.61	6.43	13.23	2300	1.6	365	2.300	31	80	115	24	50	99.9
3.3.2 MAXIMUN POWER IN TESTED GEARS (ballasted tractor)													
1 Slow	15.67	27.17	2.08	2422	14.98	394	2.135	35	81	109	26	35	99.7
2 Slow	23.79	28.35	3.02	2373	15.02	353	2.378	36	82	110	26	30	99.7
3 Slow	26.21	19.91	4.74	2300	6.61	336	2.497	36	81	114	26	30	99.7
4 Slow	26.32	13.24	7.15	2300	4.36	328	2.562	37	82	116	26	30	99.7
1 Fast	26.03	10.74	8.72	2300	3.52	333	2.521	36	81	116	26	35	99.7
2 Fast	23.43	6.38	13.23	2300	2.01	364	2.311	36	81	116	26	35	99.7
3.3.3 FIVE HOURS TESTS													
3.3.3.1 5 HOUR TEST at 75% of pull at maximum power													
4 Slow	20.74	9.94	7.51	2385	3.8	353	2.382	29	81	116	24	40	97.3
3.3.3.2 5 HOUR TEST at pull corresponding to 15% wheelslip – with 270 kg as additional ballast													
2 Slow	24.44	28.35	3.10	2361	12.8	⌘	⌘	27	81	114	22	60	97.6

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

Oil consumption during ten hours duration of test 3.3.3.1 and 3.3.3.2: 6.5 g/h

3.4 TURNING AREA AND TURNING CIRCLE[5]

Wheels equipment:
- front: 11.2R20 111 A8
- rear: 14.9R28 128 A8

Track width:
- front: 1565 mm
- rear: 1525 mm

	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	Left-hand
	m	m	m	m
Radius of turning area	3.65	3.65	4.55	4.57
Radius of turning circle	3.58	3.58	4.42	4.50

3.5 LOCATION OF CENTRE OF GRAVITY

Height above ground	740 mm
Distance forward from the vertical plane. containing the axis of the rear wheels	735 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/s²
28.6	0.13	1.60
29.5	0.21	2.84
29.0	0.30	3.14
29.8	0.37	3.06
29.5	0.43	3.07

Ballasted tractor		
Speed before application of brake	Braking device control force	Mean deceleration
km/h	kN	m/s²
29.1	0.11	0.94
29.2	0.20	1.89
30.0	0.31	2.79
30.0	0.37	2.94
29.5	0.48	3.00

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

[5] For tractor equipped with normal steer

3.6.2 Fade test

Speed before application of brake	Braking device control force	Mean deceleration
km/h	kN	m/s^2
30.2	0.11	1.10
30.5	0.22	2.42
29.8	0.29	2.58
29.6	0.37	2.86
29.6	0.43	2.92

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	0.20 kN

3.7 MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of tests: 4th July 1999 - 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: 85.5 dB(A) (on the left side)
82.4 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, 27th December 1999