LABORATORIO DI MECCANICA AGRARIA

DIPARTIMENTO DI ECONOMIA E INGEGNERIA AGRARIE

MINISTERO DELLE POLITICHE AGRICOLE E COMUNITARIE

**Report DEIAGRA - sez. LA. n° 4503** **O.E.C.D. approval number: 1/2 163**

**Report on test in accordance with the O.E.C.D. Standard Code for the Official Testing of Agricultural and Forestry Tractor Performance**
**O.E.C.D. Code 1**



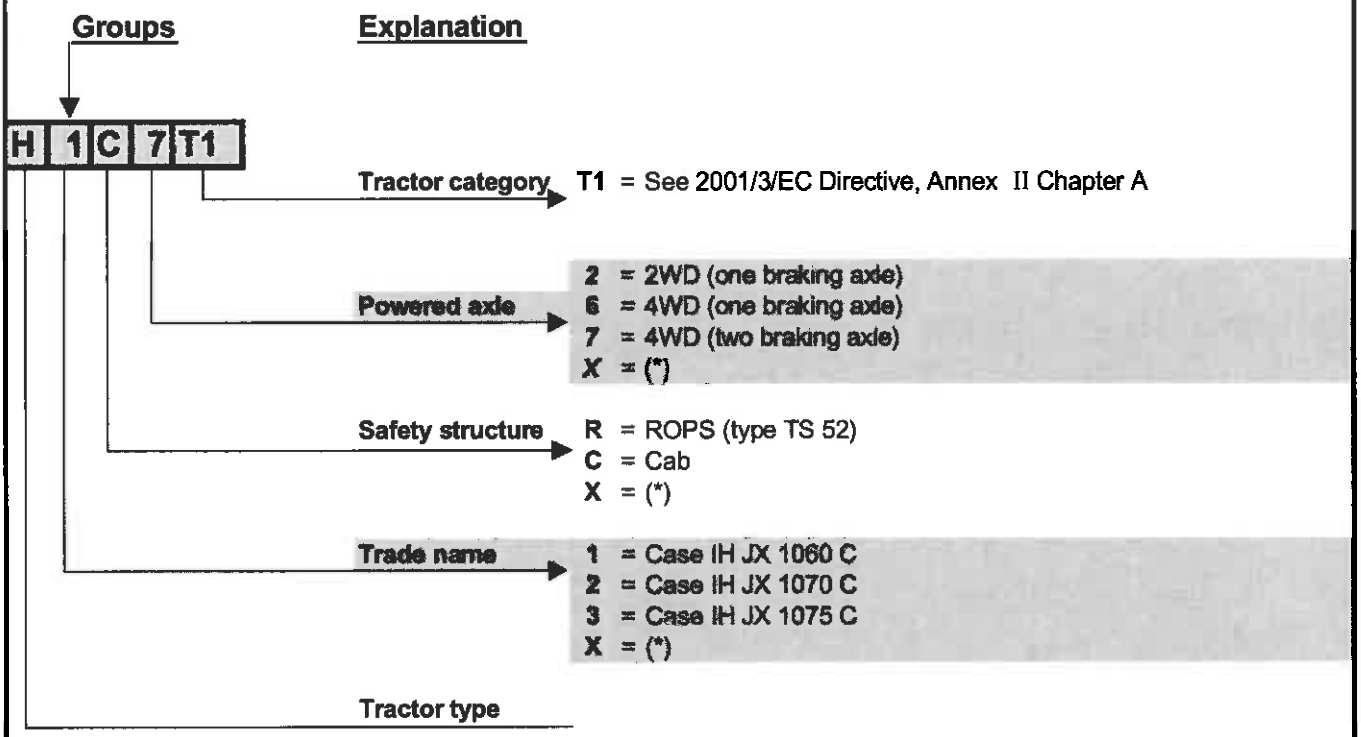
**Agricultural tractor**
Make: **CASE IH;** Model: **JX 1070 C**
(Two wheel drive tractor 30 km/h version)

**Tractor manufacturer:** CNH INTERNATIONAL, S.A., 13 Rue Aldrigen 1118, LUXEMBOURG
**Date of test:** February 2004 - June 2004
**Date of approval:** 30 August 2004

**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. Tractors Test Code**

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## *Codification System Case JX Tractors*




**(*) Symbol X is inserted when the meaning is not relevant in the homologation procedure.**

***Example: H1C7T1 means an H tractor type, Case IH JX 1060 C trade name, with cab, 4WD, and T1 tractor category (see 2001/3/EC Directive, Annex II Chapter A).***

# TABLE OF CONTENTS


1. SPECIFICATIONS OF TRACTORS 3

1.1 Identifications ..... 3

1.2 Engine ..... 3

1.3 Transmission ..... 6

1.4 Power take-off ..... 16

1.5 Hydraulic power lift ..... 17

1.6 Three point linkage ..... 18

1.7 Swinging drawbar ..... 19

1.8 Trailer hitch ..... 20

1.9 Holed drawbar ..... 21

1.10 Steering ..... 21

1.11 Brakes ..... 21

1.12 Wheels ..... 21

1.13 Protective structure ..... 22

1.14 Seat ..... 22

1.15 Lighting ..... 23

2. TEST CONDITIONS 24

2.1 Overall dimensions ..... 24

2.2 Ground clearance ..... 24

2.3 Tractor mass ..... 24

2.4 Ballast ..... 24

2.6 Tyres and track width specifications ..... 24

2.7 Fuel ..... 25

2.8 Oils and lubrificants ..... 25

3. COMPULSORY TEST RESULTS 27

3.1 Main power take-off ..... 27

3.2 Hydraulic power and lifting force ..... 29

3.3 Drawbar Power test ..... 32

3.4 Turning area and turning circle ..... 34

3.5 Locations of centre of gravity ..... 34

3.6 Braking ..... 34

3.7 Measurement of external noise ..... 35

4. OTHER TEST RESULTS 35

4.1 Test procedure for measuring hydraulic lift capacity on agricultural tractors equipped with three-point hitch - SAE J 283, Nov. 1999 ..... 36

| | | |
|---|---|---|
| C | - Tractor manufacturer's name and address: | CNH International SA - 13 rue Aldringen L - 1118 Luxembourg |
| D | - Location of tractor assembly: | CNH Italia SpA, via Leone XIII - Jesi (AN) - Italy |
| D | - Submitted for test by: | CNH Italia SpA, viale delle Nazioni 55, Modena - Italy |
| C | - Selected for test by: | The manufacturer with the agreement of the testing station |
| D | - Place of running-in: | Modena (MO) – Italy |
| D | - Duration of running-in: | 50 hours |
| C | - Location of test: | Department of Agricultural Economics and Engineering - University of Bologna - Section of Agricultural Engineering - Laboratory of Cadriano (BO - Italy) |

# 1. SPECIFICATIONS OF TRACTOR

## *1.1 Identification*

| | | |
|---|---|---|
| C | **1.1.1 Make of the tractor:** | CASE IH |
| C | - Model (trade name): | JX 1070 C |
| C | - Type: | 2WD |

### 1.1.2 Numbers

| | | |
|---|---|---|
| D | - 1St Serial N° or prototype | HJH297816 |
| C | - Serial N°: | HJH297816 |

### 1.1.3 Other specification

| | | |
|---|---|---|
| D | - Model for other countries: | none |
| C | - Transmission type: | 16+16, mechanical |
| C | - Speed version: | 30 km/h |
| D | - Manufacturer identification or Technical type number: | H2C2 |

## *1.2 Engine*

| | | |
|---|---|---|
| C | - Make/Model/Type: | CNH Italia/IVECO 8035.25R/ water-cooled, 4 stroke Diesel engine, direct injection, supercharged |
| C | - Serial N°: | 864359 |

### 1.2.1 Cylinders

| | | |
|---|---|---|
| C | - Number/disposition: | 3, vertical, in line |
| D | - Bore/stroke: | 104 mm / 115 mm |
| D | - Capacity: | 2930 $cm^3$ |
| D | - Compression ratio: | 18 ± 0.5 :1 |
| D | - Arrangement of valves: | overhead valves, 2 per cylinder |
| D | - Cylinder liners: | dry liners |
| | | The engine fitted on the tested tractor is approved according to Directive 2000/25/EC, EURO II (approval number e13*2000/25B*00/000/ *0001*00). |
| | | The engine is also in accordance with the requirements of the Environmental Protection Agency (EPA), step II, in terms of emission of gaseous and particulate pollutants |

### 1.2.2 Supercharging

| | | |
|---|---|---|
| C | - Make/Model/Type: | MITSUBISHI/49377/exhaust driven supercharger, in alternative, GARRETT/TA25/exhaust driven supercharger |
| D | - Pressure: | 95 kPa |

### 1.2.3 Fuel system

| | | |
|---|---|---|
| C | - Fuel feed system: | membrane pump |
| C | - Make/Model/Type of fuel filter: | CNH/not announced/with replaceable cartridge and filter inside the fuel feed pump |
| D | - Capacity of fuel tank: | 70 $dm^3$ or, as option, 75 $dm^3$, in plastic material, on the left side, under the tractor footrest |
| C | - Make/Model/Type of injection pump: | BOSCH/L973/rotary injection pump |
| C | - Serial N°: | 403721 |
| | - Manufacturer's production, setting of injection pump | |
| C | . Flow rate (rated engine speed and full load): | 75 $mm^3$ per stroke (corresponding to 15.5 $dm^3/h$) |
| D | . Timing: | 0 ± 0.5° |
| D | - Make/Model/Type of injectors: | BOSCH/DLLA 132S/multihole injection nozzle |
| D | - Injection pressure: | 26 ± 0.12 MPa |

### 1.2.4 Governor

| | | |
|---|---|---|
| C | - Make/Model/Type: | BOSCH/integrated in the injection pump/ mechanical type |
| C | - Governed range of engine speed: | 650±30 ÷ 2500±50 $min^{-1}$(rev/min) |
| C | - Rated engine speed: | 2300 ± 30 $min^{-1}$(rev/min) |

### 1.2.5 Air cleaner

| | | |
|---|---|---|
| | - Pre-cleaner | none |
| | - Main cleaner | |
| C | Make/Model/Type: | CNH/document n.1.19.100 AC/ dry air filter, with double cartridge |
| C | Location of air intake | in front of the radiator, under the bonnet |
| C | Maintenance indicator: | warning light on dashboard |

### 1.2.6 Lubrication system

| | | |
|---|---|---|
| D | - Type of feed pump: | forced feed by means of a gear pump. Engine oil cooled by a heat exchanger with engine coolant |
| C | - Type of filter: | replaceable cartridge |
| C | - Number of filters: | 1 |

### 1.2.7 Cooling system

| | | |
|---|---|---|
| C | - Type of coolant: | water-anti freeze mixture |
| D | - Type of pump: | centrifugal pump |
| | - Specification of fan or blower | propeller fan driven by engine shaft |
| C | Number of fan blades: | 6 |
| C | Fan diameter: | 420 mm |
| D | - Coolant capacity: | 12 $dm^3$ |
| C | - Type of temperature control: | thermostat and by-pass circuit, viscous drive fan, belt driven; variable fan with speed controlled by air flow temperature. As option a propeller fan driven by engine shaft. |
| D | - Superpressure system: | 71 kPa |

### 1.2.8 Starting system

| | | |
|---|---|---|
| C | - Make/Model/Type: | BOSCH/1.74.400.AB /Starter motor |
| D | - Starter motor power rating: | 2.6 kW |
| C | - Cold starting aid: | CAV, 357/10, as option BERU, 0101 |

C - Safety device: forward and reverse lever in neutral position and pto disenganged

### 1.2.9 Electrical system

C - Voltage: 12 V, negative earth

- Generator

C . Make/Model/Type: Denso/ 1.74.000 AC /Alternator

as option Denso/1.74.000 AD / Alternator

D . Power: 1.2 kW

- Battery of accumulators: lead acid type

C . Number: 1

D . Rating: 88 Ah at 20 hours

### 1.2.10 Exhaust system

C - Make/Model/Type: CNH/document n. 1.15.001AB/ interference type with internal perforated pipe

C - Location: on the left hand side of engine, under the bonnet, with the vertical exhaust pipe (fitted on the tested tractor) or the horizontal exhaust pipe on the left side; as option exhaust pipe with ejector.

## *1.3 Transmission*

### 1.3.1 Clutch

D - Make/Model/Type: LUK/ 11/11 / double clutch with two dry plates included in the same clutch pressure plate, one for the pto and the other for gear box, but independently operated

(Only for travelling)

D - Number of plates: 1

D - Diameter of plates: 280 mm

C - Method of operation: mechanically operated by pedal

### 1.3.2 Gear box

D - Make/Model/Type: CNH/ not announced/mechanical synchronised constant mesh gears, direct engagement by hand levers

- Description:

| | | Forward | Reverse |
|---|---|---|---|
| C | Number of ranges/groups | 4/1 | 4/1 |
| C | Number of gears | 4 | 4 |

| | | | |
|---|---|---|---|
| C | Total of arrangements | 16 | 16 |

D - Available options:

44x16 HI-LO

32x16 HI-LO

(when the reverse is engaged the position HI is automatically excluded)

28x16 mechanical

44x16 mechanical

### 1.3.3 Rear axle and final drives

D - Make/Model/Type: CNH/not announced/bevel gear differential and epicyclical final drivers

- Differential lock

D . Type: mechanical or, as option, electro-hydraulic

C . Method of engagement: pushing the device control pedal on the right side of the floor or, as option, pushing a button

C . Method of disengagement: pushing one of the two brake pedals

### 1.3.4 Front axle and final drives

D - Make/Model/Type: CNH/not announced/ telescopic axle with hydrostatic steering

- Differential lock: not applicable

### 1.3.5 Total ratios and traveling speeds

| | JX 1070 C with 16 forward speeds and 16 reverse speeds (fitted on the 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 $min^{-1}$ (rev/min) km/h |
| C | 1 | low | 964.506 | 0.625 |
| C | 2 | low | 647.023 | 0.931 |
| C | 3 | low | 440.151 | 1.369 |
| C | 4 | low | 297.102 | 2.028 |
| C | 1 | medium low | 229.480 | 2.626 |
| C | 2 | medium low | 153.943 | 3.914 |
| C | 3 | medium low | 104.723 | 5.754 |
| C | 4 | medium low | 70.688 | 8.525 |
| C | 1 | medium high | 187.455 | 3.215 |

| | | | | |
|---|---|---|---|---|
| C | 2 | medium high | 125.751 | 4.791 |
| C | 3 | medium high | 85.545 | 7.044 |
| C | 4 | medium high | 57.743 | 10.436 |
| C | 1 | high | 64.928 | 9.281 |
| C | 2 | high | 43.556 | 13.835 |
| C | 3 | high | 29.630 | 20.338 |
| C | 4 | high | 20.000 | 30.130 |
| | Reverse | | | |
| C | 1 | low | 995.519 | 0.605 |
| C | 2 | low | 667.894 | 0.902 |
| C | 3 | low | 454.350 | 1.326 |
| C | 4 | low | 306.688 | 1.965 |
| C | 1 | medium low | 236.882 | 2.544 |
| C | 2 | medium low | 158.909 | 3.792 |
| C | 3 | medium low | 108.101 | 5.574 |
| C | 4 | medium low | 72.968 | 8.258 |
| C | 1 | medium high | 193.502 | 3.114 |
| C | 2 | medium high | 129.808 | 4.642 |
| C | 3 | medium high | 88.305 | 6.824 |
| C | 4 | medium high | 59.606 | 10.110 |
| C | 1 | high | 67.022 | 8.991 |
| C | 2 | high | 44.961 | 13.403 |
| C | 3 | high | 30.585 | 19.702 |
| C | 4 | high | 20.645 | 29.189 |

| **JX 1070C with 28 forward speeds, with creeper unit (C), 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 $min^{-1}$ (rev/min) km/h |
| C 1 | C low | 3722.650 | 0.162 |
| C 2 | C low | 2497.280 | 0.241 |
| C 3 | C low | 1698.830 | 0.355 |
| C 4 | C low | 1146.710 | 0.528 |
| C 1 | C medium low | 885.712 | 0.680 |

| | | | | |
|---|---|---|---|---|
| C | 2 | C medium low | 594.165 | 1.014 |
| C | 3 | C medium low | 404.194 | 1.491 |
| C | 4 | C medium low | 272.631 | 2.209 |
| C | 1 | C medium high | 723.511 | 0.833 |
| C | 2 | C medium high | 485.355 | 1.242 |
| C | 3 | C medium high | 330.174 | 1.825 |
| C | 4 | C medium high | 222.867 | 2.704 |
| C | 1 | low | 964.506 | 0.625 |
| C | 2 | low | 647.023 | 0.931 |
| C | 3 | low | 440.151 | 1.369 |
| C | 4 | low | 297.102 | 2.028 |
| C | 1 | medium low | 229.480 | 2.626 |
| C | 2 | medium low | 153.943 | 3.914 |
| C | 3 | medium low | 104.723 | 5.754 |
| C | 4 | medium low | 70.688 | 8.525 |
| C | 1 | medium high | 187.455 | 3.215 |
| C | 2 | medium high | 125.751 | 4.792 |
| C | 3 | medium high | 85.545 | 7.044 |
| C | 4 | medium high | 57.743 | 10.436 |
| C | 1 | high | 64.928 | 9.281 |
| C | 2 | high | 43.556 | 13.835 |
| C | 3 | high | 29.630 | 20.338 |
| C | 4 | high | 20.000 | 30.130 |
| | Reverse | | | |
| C | 1 | low | 995.519 | 0.605 |
| C | 2 | low | 667.894 | 0.902 |
| C | 3 | low | 454.350 | 1.326 |
| C | 4 | low | 306.688 | 1.965 |
| C | 1 | medium low | 236.682 | 2.544 |
| C | 2 | medium low | 158.909 | 3.792 |
| C | 3 | medium low | 108.101 | 5.574 |
| C | 4 | medium low | 72.968 | 8.258 |

| | | | | |
|---|---|---|---|---|
| C | 1 | medium high | 193.502 | 3.114 |
| C | 2 | medium high | 129.808 | 4.642 |
| C | 3 | medium high | 88.305 | 6.824 |
| C | 4 | medium high | 59.606 | 10.110 |
| C | 1 | high | 67.022 | 8.991 |
| C | 2 | high | 44.961 | 13.403 |
| C | 3 | high | 30.585 | 19.702 |
| C | 4 | high | 20.645 | 29.189 |

| | JX 1070 C with 44 forward speeds, with creeper unit (C), 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 $min^{-1}$ (rev/min) km/h |
| C | 1 | C low | 3722.650 | 0.162 |
| C | 2 | C low | 2497.280 | 0.241 |
| C | 3 | C low | 1698.830 | 0.355 |
| C | 4 | C low | 1146.710 | 0.528 |
| C | 1 | C medium low | 885.712 | 0.680 |
| C | 2 | C medium low | 594.165 | 1.014 |
| C | 3 | C medium low | 404.194 | 1.491 |
| C | 4 | C medium low | 272.831 | 2.209 |
| C | 1 | C medium high | 723.511 | 0.833 |
| C | 2 | C medium high | 485.355 | 1.242 |
| C | 3 | C medium high | 330.174 | 1.825 |
| C | 4 | C medium high | 222.867 | 2.704 |
| C | 1 | low | 1157.410 | 0.521 |
| C | 2 | low | 964.506 | 0.625 |
| C | 3 | low | 776.427 | 0.776 |
| C | 4 | low | 647.023 | 0.931 |
| C | 5 | low | 528.182 | 1.141 |
| C | 6 | low | 440.151 | 1.369 |

| | | | | |
|---|---|---|---|---|
| C | 7 | low | 356.523 | 1.690 |
| C | 8 | low | 297.102 | 2.028 |
| C | 1 | medium low | 275.376 | 2.188 |
| C | 2 | medium low | 229.480 | 2.626 |
| C | 3 | medium low | 184.731 | 3.262 |
| C | 4 | medium low | 153.943 | 3.914 |
| C | 5 | medium low | 125.668 | 4.795 |
| C | 6 | medium low | 104.723 | 5.754 |
| C | 7 | medium low | 84.826 | 7.104 |
| C | 8 | medium low | 70.688 | 8.525 |
| C | 1 | medium high | 224.946 | 2.679 |
| C | 2 | medium high | 187.455 | 3.215 |
| C | 3 | medium high | 150.901 | 3.993 |
| C | 4 | medium high | 125.751 | 4.792 |
| C | 5 | medium high | 102.654 | 5.870 |
| C | 6 | medium high | 85.545 | 7.044 |
| C | 7 | medium high | 69.291 | 8.697 |
| C | 8 | medium high | 57.743 | 10.436 |
| C | 1 | high | 77.913 | 7.734 |
| C | 2 | high | 64.928 | 9.281 |
| C | 3 | high | 52.267 | 11.529 |
| C | 4 | high | 43.556 | 13.835 |
| C | 5 | high | 35.556 | 16.948 |
| C | 6 | high | 29.630 | 20.338 |
| C | 7 | high | 24.000 | 25.109 |
| C | 8 | high | 20.000 | 30.130 |
| | Reverse | | | |
| C | 1 | low | 995.519 | 0.605 |
| C | 2 | low | 667.894 | 0.902 |
| C | 3 | low | 454.350 | 1.326 |
| C | 4 | low | 306.688 | 1.965 |
| C | 1 | medium low | 236.882 | 2.544 |
| C | 2 | medium low | 158.909 | 3.792 |
| C | 3 | medium low | 108.101 | 5.574 |
| C | 4 | medium low | 72.968 | 8.258 |

| | | | | |
|---|---|---|---|---|
| C | 1 | medium high | 193.502 | 3.114 |
| C | 2 | medium high | 129.808 | 4.642 |
| C | 3 | medium high | 88.305 | 6.824 |
| C | 4 | medium high | 59.606 | 10.110 |
| C | 1 | high | 67.022 | 8.991 |
| C | 2 | high | 44.961 | 13.403 |
| C | 3 | high | 30.585 | 19.702 |
| C | 4 | high | 20.645 | 29.189 |

| JX 1070C 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 $min^{-1}$ (rev/min) km/h |
| C | 1 | low | 1157.410 | 0.521 |
| C | 2 | low | 964.506 | 0.625 |
| C | 3 | low | 776.427 | 0.776 |
| C | 4 | low | 647.023 | 0.931 |
| C | 5 | low | 528.182 | 1.141 |
| C | 6 | low | 440.151 | 1.369 |
| C | 7 | low | 356.523 | 1.690 |
| C | 8 | low | 297.102 | 2.028 |
| C | 1 | medium low | 275.376 | 2.188 |
| C | 2 | medium low | 229.480 | 2.626 |
| C | 3 | medium low | 184.731 | 3.262 |
| C | 4 | medium low | 153.943 | 3.914 |
| C | 5 | medium low | 125.668 | 4.795 |
| C | 6 | medium low | 104.723 | 5.754 |
| C | 7 | medium low | 84.826 | 7.104 |
| C | 8 | medium low | 70.688 | 8.525 |
| C | 1 | medium high | 224.946 | 2.679 |
| C | 2 | medium high | 187.455 | 3.215 |
| C | 3 | medium high | 150.901 | 3.993 |
| C | 4 | medium high | 125.751 | 4.792 |
| C | 5 | medium high | 102.654 | 5.870 |

| | | | | |
|---|---|---|---|---|
| C | 6 | medium high | 85.545 | 7.044 |
| C | 7 | medium high | 69.291 | 8.697 |
| C | 8 | medium high | 57.743 | 10.436 |
| C | 1 | high | 77.913 | 7.734 |
| C | 2 | high | 64.928 | 9.281 |
| C | 3 | high | 52.267 | 11.529 |
| C | 4 | high | 43.556 | 13.835 |
| C | 5 | high | 35.556 | 16.948 |
| C | 6 | high | 29.630 | 20.338 |
| C | 7 | high | 24.000 | 25.109 |
| C | 8 | high | 20.000 | 30.130 |
| | Reverse | | | |
| C | 1 | low | 995.519 | 0.605 |
| C | 2 | low | 667.894 | 0.902 |
| C | 3 | low | 454.350 | 1.326 |
| C | 4 | low | 306.688 | 1.965 |
| C | 1 | medium low | 236.882 | 2.544 |
| C | 2 | medium low | 158.909 | 3.792 |
| C | 3 | medium low | 108.101 | 5.574 |
| C | 4 | medium low | 72.968 | 8.258 |
| C | 1 | medium high | 193.502 | 3.114 |
| C | 2 | medium high | 129.808 | 4.642 |
| C | 3 | medium high | 88.305 | 6.824 |
| C | 4 | medium high | 59.606 | 10.110 |
| C | 1 | high | 67.022 | 8.991 |
| C | 2 | high | 44.961 | 13.403 |
| C | 3 | high | 30.585 | 19.702 |
| C | 4 | high | 20.645 | 29.189 |

| **JX 1070C with 44 forward speeds, with HI-LO, with creeper unit (C) 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 $min^{-1}$ (rev/min) km/h |
| C 1 | C low | 2473.090 | 0.244 |

| | | | | |
|---|---|---|---|---|
| C | 2 | C low | 1659.030 | 0.363 |
| C | 3 | C low | 1128.590 | 0.534 |
| C | 4 | C low | 761.801 | 0.791 |
| C | 1 | C medium low | 588.410 | 1.024 |
| C | 2 | C medium low | 394.725 | 1.527 |
| C | 3 | C medium low | 268.520 | 2.244 |
| C | 4 | C medium low | 181.251 | 3.325 |
| C | 1 | C medium high | 480.654 | 1.254 |
| C | 2 | C medium high | 322.439 | 1.869 |
| C | 3 | C medium high | 219.346 | 2.747 |
| C | 4 | C medium high | 148.059 | 4.070 |
| C | 1 | low | 1157.410 | 0.521 |
| C | 2 | low | 964.506 | 0.625 |
| C | 3 | low | 776.427 | 0.776 |
| C | 4 | low | 647.023 | 0.931 |
| C | 5 | low | 528.182 | 1.141 |
| C | 6 | low | 440.151 | 1.369 |
| C | 7 | low | 356.523 | 1.690 |
| C | 8 | low | 297.102 | 2.028 |
| C | 1 | medium low | 275.376 | 2.188 |
| C | 2 | medium low | 229.480 | 2.626 |
| C | 3 | medium low | 184.731 | 3.262 |
| C | 4 | medium low | 153.943 | 3.914 |
| C | 5 | medium low | 125.668 | 4.795 |
| C | 6 | medium low | 104.723 | 5.754 |
| C | 7 | medium low | 84.826 | 7.104 |
| C | 8 | medium low | 70.688 | 8.525 |
| C | 1 | medium high | 224.946 | 2.679 |
| C | 2 | medium high | 187.455 | 3.215 |
| C | 3 | medium high | 150.901 | 3.993 |
| C | 4 | medium high | 125.751 | 4.792 |
| C | 5 | medium high | 102.654 | 5.870 |

| | | | | |
|---|---|---|---|---|
| C | 6 | medium high | 85.545 | 7.044 |
| C | 7 | medium high | 69.291 | 8.697 |
| C | 8 | medium high | 57.743 | 10.436 |
| C | 1 | high | 77.913 | 7.734 |
| C | 2 | high | 64.928 | 9.281 |
| C | 3 | high | 52.267 | 11.529 |
| C | 4 | high | 43.556 | 13.835 |
| C | 5 | high | 35.556 | 16.948 |
| C | 6 | high | 29.630 | 20.338 |
| C | 7 | high | 24.000 | 25.109 |
| C | 8 | high | 20.000 | 30.130 |
| | Reverse | | | |
| C | 1 | low | 995.519 | 0.605 |
| C | 2 | low | 667.894 | 0.902 |
| C | 3 | low | 454.350 | 1.326 |
| C | 4 | low | 306.688 | 1.965 |
| C | 1 | medium low | 236.882 | 2.544 |
| C | 2 | medium low | 158.909 | 3.792 |
| C | 3 | medium low | 108.101 | 5.574 |
| C | 4 | medium low | 72.968 | 8.258 |
| C | 1 | medium high | 193.502 | 3.114 |
| C | 2 | medium high | 129.808 | 4.642 |
| C | 3 | medium high | 88.305 | 6.824 |
| C | 4 | medium high | 59.606 | 10.110 |
| C | 1 | high | 67.022 | 8.991 |
| C | 2 | high | 44.961 | 13.403 |
| C | 3 | high | 30.585 | 19.702 |
| C | 4 | high | 20.645 | 29.189 |

(*) Calculated with a dynamic radius index of 695 mm (in conformity with ISO 4295-1:1998)

## *1.4 Power take-off*

### 1.4.1 Main power take-off

C - Type: independent

| | | |
|---|---|---|
| C | - Method of engagement: | by hand lever acting on a dry clutch |
| C | - Number of shafts: | 1 |
| C | - Method of changing power take-off shaft ends and speeds: | by lever and physically replacing the PTO shaft |

### 1.4.1.1 Power take-off proportional to engine speed

| | Type of power take-off | 540 $min^{-1}$ (rev/min) | 540 $min^{-1}$ economic (rev/min) | 1000 $min^{-1}$ (rev/min) |
|---|---|---|---|---|
| C | - Location: | at the rear of the tractor, in the median plane | | |
| C | - Diameter of power take-off shaft end: | 35 mm | 35 mm | 35 mm |
| C | - Number of splines (in conformity with ISO 500:1991) | 6 | 6 | 21 |
| C | - Height above ground: | 665 mm | 665 mm | 665 mm |
| C | - Distance from the median plane of the tractor: | 0 mm | 0 mm | 0 mm |
| C | - Distance behind rear-wheel axis: | 485 mm | 485 mm | 485 mm |
| C | - PTO speed at rated engine speed (2300 rev/min): | 565 $min^{-1}$ | 809 $min^{-1}$ | 1017 $min^{-1}$ |
| C | - Engine speed at standard power take-off speed: | 2196 $min^{-1}$ | 2132 $min^{-1}$ | 2260 $min^{-1}$ |
| C | - Ratio of rotation speeds (engine speed/p.t.o. speed): | 4.07 | 2.845 | 2.26 |
| D | - Power restriction: | none | none | none |
| D | - Maximum torque transmissible (equivalent crankshaft torque): | 320 Nm | 320 Nm | 330 Nm |
| C | - Direction of rotation: | clockwise (viewed from behind tractor) | | |

### 1.4.1.2 Power take-off proportional to ground speed

| | Type of power take-off | 540 $min^{-1}$ (rev/min) | 540 $min^{-1}$ economic (rev/min) | 1000 $min^{-1}$ (rev/min) |
|---|---|---|---|---|
| C | - Travelling distance for one revolution of take-off shaft | 0.355 m | 0.244 m | 0.194 m |
| C | - Number of power take-off shaft revolutions for one revolution of (rear) driving wheels: | 12.30 | 17.88 | 22.48 |
| C | - Direction of rotation with forward gear engaged: | clockwise (viewed from behind tractor) | | |

### 1.4.2 Optional power take-off

none

## *1.5 Hydraulic power lift*

| | | |
|---|---|---|
| C | - Make/Model/Type: | CNH/not announced/load, position and mixed control operated by two independent levers; a lift-o-matic device is fitted for raising and lowering quickly the lower links.<br>As option, hydraulic power lift electronically controlled |
| C | - Type of hydraulic system: | open centre system |
| C | - Type and number of cylinders: | 1, single action, internal |
| C | - Type of linkage lock for transport: | lift-o-matic device |
| D | - Relief valve pressure setting: | 20.5 + 0.5 Mpa |
| D | - Opening pressure of cylinder safety valve: | 22 + 0.5 Mpa |
| D | - Lift pump type: | rotative pump driven by the engine shaft (delivery rate of 47 l/min with pump at 2484 $min^{-1}$) |
| D | - Transmission between pump and engine: | mechanical |
| C | - Type and number of filters: | 1, replaceable paper cartridge |
| C | - Site of oil reservoir: | gear-box |
| C | - Type, number and location of tapping points: | 4 tapping points, single or double acting, at the rear of tractor |
| D | - Maximum volume of oil available to external cylinders: | 21 $dm^3$ |

## *1.6 Three point linkage*

C - Category — in conformity with category 2 of ISO 730-1:1994 + Cor.1:1995

C - Category adapter: — none

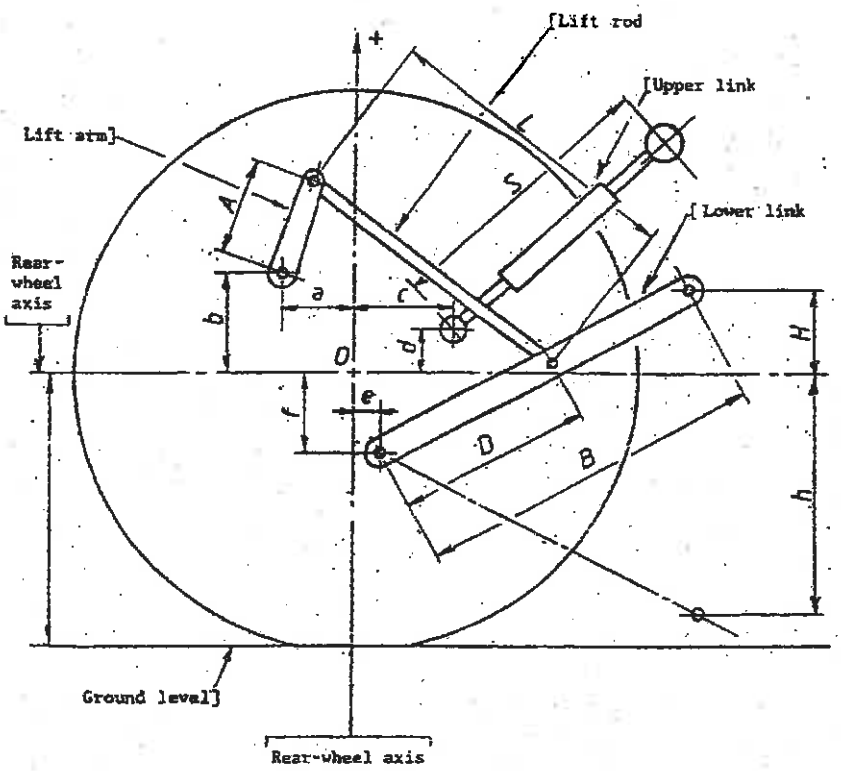



Figure 1.1

**Lift test - Linkage geometry**

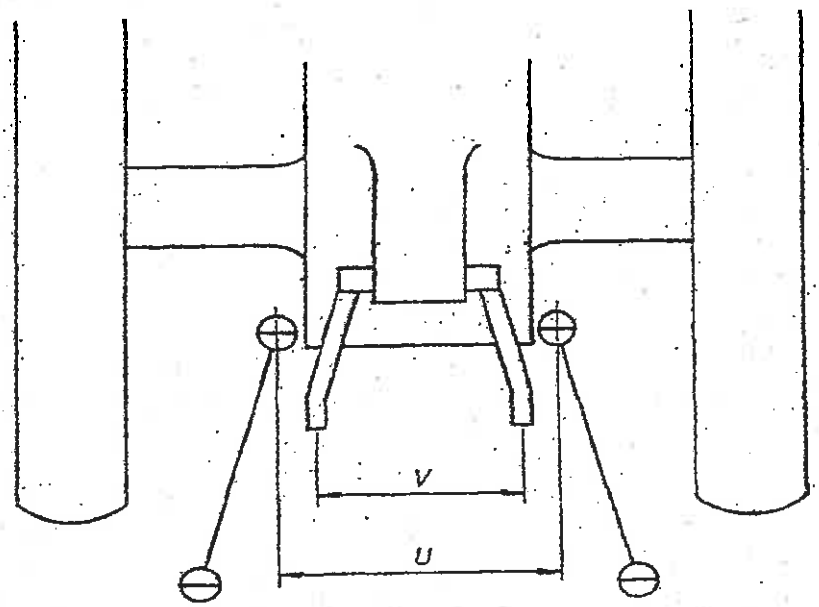



Figure 1.2

**Lift test - Linkage geometry**

| | | | Dimension or range | Settings used in test |
|---|---|---|---|---|
| | | | mm | mm |
| C | Length of lift arms: | (A) | 255 | 255 |
| C | Length of lower links: | (B) | 880 | 880 |
| | Distance of lift arm pivot point from rear wheel axis | | | |
| C | - horizontally (rearward) | (a) | 145 | 145 |
| C | - vertically | (b) | 276 | 276 |
| C | Horizontal distance between the 2 lower link points: | (U) | 405 | 405 |
| C | Horizontal distance between the 2 lift arm end points: | (V) | 450 | 450 |
| C | Length of upper link: | (S) | 555⊕770 | 695 |
| | Distance of upper link pivot point from rear wheel axis | | | |
| C | - horizontally (rearward) | (c) | 340-345 | 345 |
| C | - vertically | (d) | 308-361 | 308 |
| | Distance of lower link pivot point from rear wheel axis | | | |
| C | - horizontally | (e) | 155 | 155 |
| C | - vertically | (f) | 189 | 189 |
| C | Distance of lower link pivot points to lift rod pivot points on lower links: | (D) | 523 | 523 |
| C | Length of lift rods : | (L) | 570⊕690 | 573 |
| | Height of lower hitch points relative to the rear-wheel axis | | | |
| C | - in low position | (h) | 305⊕650 | 322 |
| C | - in high position | (H) | 15⊕320 | 314 |
| C | Height above ground of lower hitch points when locked in transport position (*) | | 710⊕1015 | - |

*Assuming r=695 mm tyre dynamic radius index of ISO 4251-1:1998

Table 2.1

**Dimensions of linkage geometry when connected to the standard frame**

## *1.7 Swinging drawbar*

C - Type: CNH, Document n. 1.12.136AA,

| | | |
|---|---|---|
| | | longitudinally adjustable |
| | - Height above ground | |
| C | . Maximum: | 440 mm |
| C | . Minimum: | 360 mm |
| C | - Type of adjustment: | by turning the drawbar |
| C | - Distance of hitch point from rear-wheel axis, horizontally: | 691 ÷ 891 mm |
| | - Distance of hitch point from power take-off shaft end | |
| C | . Vertically: | 250 ÷ 330 mm |
| C | . Horizontally: | 206 ÷ 406 mm |
| | - Lateral adjustment | |
| C | . Right hand: | 289 mm |
| C | . Left hand: | 289 mm |
| C | - Distance of pivot point from rear-wheel axis, horizontally: | 310 mm |
| C | - Diameter of drawbar pinhole: | 32 mm |
| D | - Maximum vertical permissible load: | 5 kN |
| D | | As option are available the following drawbars:<br>CNH DGM-GA 4036A<br>SAUERMAN HS1000-D-FT-S |

## *1.8 Trailer hitch*

| | | |
|---|---|---|
| C | - Type: | CBM / GTF 30015 |
| C | - Hole diameter: | 32 mm |
| C | - Height above ground: | 450 ÷ 900 mm |
| C | - Distance of hitch point from rear-wheel axis, horizontally: | 655 mm |
| | - Distance of hitch point from power take-off shaft end | |
| C | . Vertically: | 440 mm |
| C | . Horizontally: | 170 mm |
| D | - Maximum vertical permissible load: | 0 kN |
| D | | As option are present the following trailer hitch:<br>CBM / 30014<br>CBM / D2<br>CBM / C |

| | | |
|---|---|---|
| | | CNH / D2 |
| | | CNH / C |
| | | SAUERMAN / HS 1000-D-FT-S |
| | ***1.9 Holed drawbar*** | not present on the tested tractor, available as option |
| | ***1.10 Steering*** | |
| D | - Make/Model/Type: | DANFOSS / ORBITROL OSPC 80 ON / hydrostatic As option OGNIBENE / STH ON80G170LNV/ hydrostatic |
| | - Method of operation | |
| D | . Pump: | independent gear pump |
| D | - Ram: | single acting ram positioned in the right side of the front axle and directly acting on it |
| D | - Working pressure: | 17 Mpa |
| | ***1.11 Brakes*** | |
| | **1.11.1 Service brake** | |
| D | - Make/Model/Type: | CNH/not announced/ 2 oil bath disc, 1 per rear wheel, mounted on the differential shaft |
| C | - Method of operation: | foot operated bi-pedal braking device, with hydraulic transmission |
| C | - Trailer braking take-off: | hydraulic brake system |
| | **1.11.2 Parking brake** | |
| C | - Type: | fully independent from service brake, 4 oil bath double face sector discs and 2 oil bath single face sector discs, mounted on the pignon shaft in the gear box |
| C | - Method of operation: | mechanical hand lever |
| | ***1.12 Wheels*** | |
| | - Number | |
| C | . Front | 2 steering |
| C | . Rear | 2 driving |
| C | - Wheelbase: | 2130 mm |
| | - Track width adjustment: | |

| | Minimum mm | Maximum mm | Adjustment method |
|---|---|---|---|
| D Front | 1439 | 1607 | Adjusting the telescopic front axle |
| D Rear | 1232 | 1949 | Changing the position of the rims in respect to the disc |

## *1.13 Protective structure*

| | | |
|---|---|---|
| C | - Make/Model/Type: | CNH/CS33/ cab |
| C | - Manufacturer's name and address: | CNH International SA – 13 rue Aldringen L – 1118 Luxembourg |
| | - Protective device | |
| C | . Cab/frame/rollguard/other: | cab |
| C | . Tiltable/not tiltable | not tiltable |
| | - OECD approval | |
| C | . Approval number: | 4/0 465/4 |
| C | . Date of approval: | 5 June 2003 |
| C | . N° of minor modification certificates, if any: | 3 |

Optional

| | | |
|---|---|---|
| D | - Make/Model/Type: | CNH/TS52/ rear roll bar |
| D | - Manufacturer's name and address: | CNH International SA – 13 rue Aldringen L – 1118 Luxembourg |

## *1.14 Seat*

### 1.14.1 Driver's seat

| | | |
|---|---|---|
| C | - Make/Model/Type: | MT/SC78-M97/3/pneumatic |
| C | - Seat and steering wheel reversible: | no |
| C | - Type of suspension: | adjustable spring |
| C | - Type of damping: | shock absorber |
| | - Range of adjustment | |
| C | . Longitudinally: | 150 mm |
| C | . Vertically: | 60 mm |
| C | - Safety belt: | yes |
| | . Type | 2 point seat belt |

### 1.14.2 Optional driver's seat(s)

| | | |
|---|---|---|
| D | - Make/Model/Type: | MT/SC78-M91/mechanical |
| D | - Type of suspension: | adjustable spring |

| | | |
|---|---|---|
| D | - Type of damping: | shock absorber |
| | - Range of adjustment | |
| C | . Longitudinally: | 150 mm |
| C | . Vertically: | 80 mm |
| D | - Make/Model/Type: | GRAMMER/MSG83/520/mechanical |
| D | - Type of suspension: | adjustable spring |
| D | - Type of damping: | shock absorber |
| | - Range of adjustment | |
| C | . Longitudinally: | 150 mm |
| C | . Vertically: | 60 mm |
| D | - Make/Model/Type: | GRAMMER/MSG93/520/pneumatic |
| D | - Type of suspension: | adjustable spring |
| D | - Type of damping: | shock absorber |
| | - Range of adjustment | |
| C | . Longitudinally: | 150 mm |
| C | . Vertically: | 60 mm |

### 1.14.3 Passenger seat

| | | |
|---|---|---|
| C | - Location: | on the left of the driving seat |
| C | - Capacity: | 1 |

## *1.15 Lighting*

| | | Height above ground of centre | Size | Distance from outside edge of lights to median plane of tractor |
|---|---|---|---|---|
| | | mm | mm | mm |
| C | Headlights | 1080 | 170x100 | 90 |
| C | Sidelights | 1580 | 110x70 | 680 |
| C | Rearlights | 1450 | 155x650 | 680 |
| C | Reflectors | 1450 | 45x55 | 640 |

## 2. TEST CONDITIONS

### 2.1 Overall dimensions

| | Length | Width | | Height at top of | |
|---|---|---|---|---|---|
| | | Minimum | Maximum | Protective structure | Exhaust pipe |
| | mm | mm | mm | mm | mm |
| Ballasted | 3919 | 1867 | 2428 | 2410 | 2290 |
| Unballasted | 3662 | | | | |

### 2.2 Ground clearance

- Height: 353 mm
- Clearance-limiting part: front differential: drawbar bracket

### 2.3 Tractor mass

- Tractor tested: mass with cab CS33

| | Ballasted | | Unballasted | |
|---|---|---|---|---|
| | Without driver | With driver | Without driver | With driver |
| | kg | kg | kg | kg |
| Front | 1265 | 1280 | 905 | 920 |
| Rear | 1910 | 1970 | 1780 | 1840 |
| Total | 3175 | 3250 | 2685 | 2760 |

### 2.4 Ballast

| | Weights | | Water |
|---|---|---|---|
| | Number | Total mass | |
| | | kg | kg |
| Front | 5 | 285 | none |
| Rear | 4 | 200 | none |
| Optional | none | none | none |

## 2.6 Tyres and track width specifications

| | Front | Rear |
|---|---|---|
| Tyres | | |
| - make | TAURUS | TAURUS |
| - type | Point 8 | Point 8 |
| - dimensions | 7.50-16 | 16.9 R30 |
| - ply rating | 103 A6 | 137 A8 |
| - type of casing | Radial | Radial |
| - maximum load (tyre manufacturer's) | 8.75 kN | 22.5 kN |
| - maximum load (tractor manufacturer's) | 8.75 kN | 17.5 kN |
| - inflation pressure (tyre manufacturer's) | 370 kPa | 160 kPa |
| - dynamic radius index | 375 | 695 |
| Chosen track width | 1440 | 1540 |

**Optional**

| Dimension | |
|---|---|
| Front | Rear |
| 6.00-16 97A6 | 13.6R28 123 A8 |
| 6.50-16 97A6 | 12.4R32 122 A8 |
| 6.50-16 97A6 | 3.80/70R28 127 A8 |
| 7.50-16 103A6 | 420/70R30 134 A8 |
| 7.50-16 103A6 | 14.9R28 128 A8 |
| 7.50-16 103A6 | 14.9R30 129 A8 |
| 6.50-16 97A6 | 12.4R36 124 A8 |
| 7.50-16 103A6 | 16.9R30 137 A8 |
| 7.50-16 103A6 | 480/70R28 140 A8 |
| 7.50-16 103A6 | 380/70R28 127 A8 |
| 7.50-16 103A6 | 420/70R28 133 A8 |

## 2.7 Fuel

- type: AGIP diesel oil, in conformity with national standard
- density at 15°C: 0.838 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 | 7.5 | 300 | 300 |
| Gear box , rear axle, rear final drive, brakes, hydraulic system and | 42 | 300 | 1200 hours and 2 years |

| | | | |
|---|---|---|---|
| steering | | | |
| Front axle | none | none | none |
| Final drive with brakes (front) | none | none | none |

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

| | Recommended | Used during test |
|---|---|---|
| Engine oil<br>Type<br>Viscosity<br>Classification | <br>AKCELA No.<br>15W-40<br>SAE | <br>As recommended |
| Transmission oils, hydraulic fluid and steering oil<br>Type<br>Viscosity<br>Classification | <br>AKCELA NEXPLORE<br>10W-30<br>SAE | <br>As recommended |
| Braking oil<br>Type<br>Viscosity<br>Classification | <br>AKCELA LHM FLUID<br>7308<br>ISO | <br><br>As recommended |

### 2.8.3 Grease

- number of lubrication points: 15

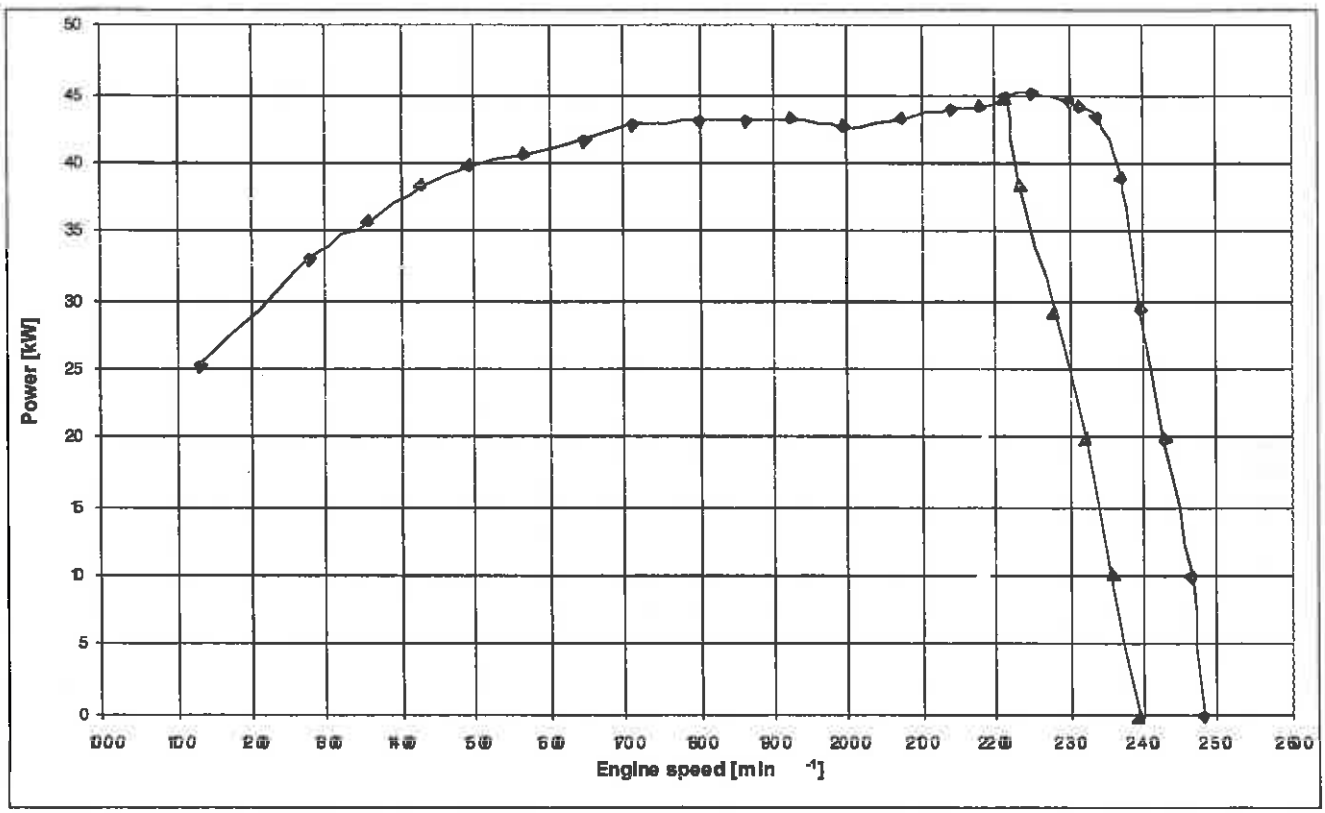
## 3. COMPULSORY TEST RESULTS

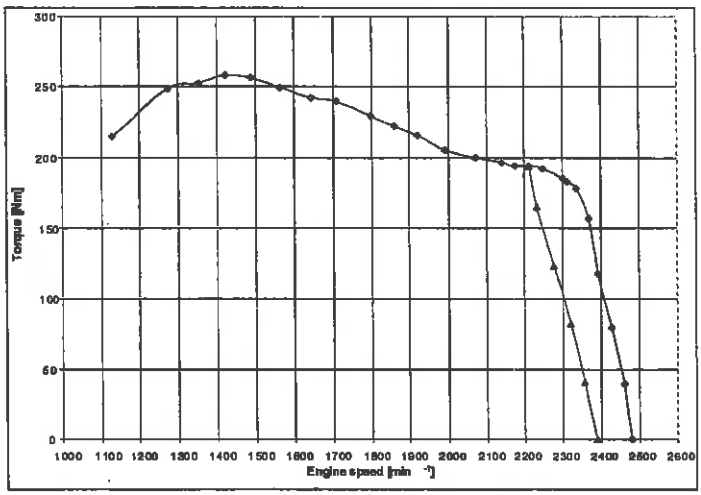
### 3.1 Main power take-off

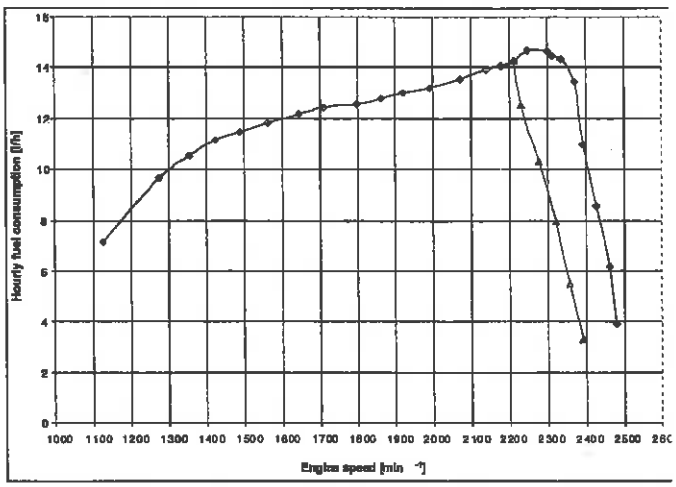
- Date and location of tests: 24.02.2004, Cadriano (BO) - Italy
- Type of dynamometer bench: Schenck U1 - 40

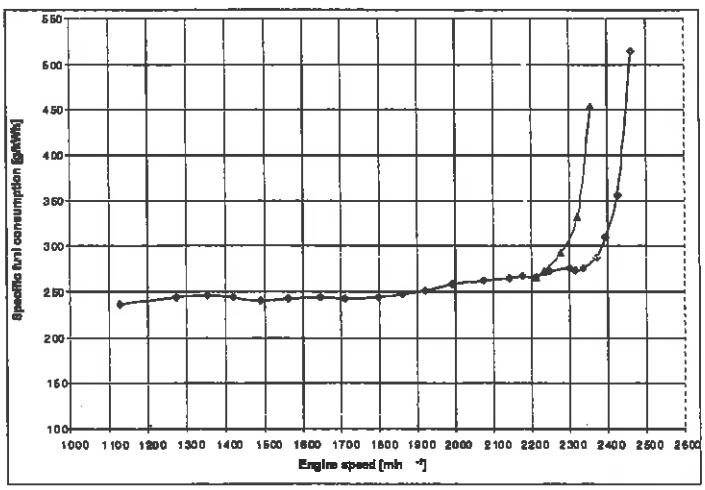
| Power | Speed | | | Fuel consumption | | | Specific energy |
|---|---|---|---|---|---|---|---|
| | Engine | P.T.O. | Fan | Hourly | | Specific | |
| kW | $min^{-1}$ (rev/min) | | | kg/h | l/h | g/kWh | kWh/l |
| 3.1.1 | MAXIMUM POWER - TWO-HOUR TEST | | | | | | |
| 45.2 | 2248 | 552 | 2495 | 12.32 | 14.70 | 272 | 3.08 |
| 3.1.2 | POWER AT RATED ENGINE SPEED | | | | | | |
| 44.6 | 2299 | 565 | 2537 | 12.28 | 14.65 | 275 | 3.04 |
| 3.1.3 | STANDARD POWER TAKE-OFF SPEED [540 ± 10 $min^{-1}$ (rev/min)] | | | | | | |
| 44.9 | 2211 | 543 | 2402 | 11.96 | 14.27 | 266 | 3.15 |
| 3.1.4<br>3.1.4.1 | PART LOADS<br>the torque corresponding to maximum power at rated engine speed | | | | | | |
| 44.6 | 2299 | 565 | 2537 | 12.28 | 14.65 | 275 | 3.04 |
| 3.1.4.2 | 85% of torque defined in 3.1.4.1 | | | | | | |
| 39.1 | 2370 | 582 | 2619 | 11.26 | 13.43 | 288 | 2.91 |
| 3.1.4.3 | 75% of torque defined in 3.1.4.2 | | | | | | |
| 29.6 | 2393 | 588 | 2645 | 9.18 | 10.95 | 310 | 2.70 |
| 3.1.4.4 | 50% of torque defined in 3.1.4.2 | | | | | | |
| 20.1 | 2427 | 596 | 2370 | 7.16 | 8.54 | 356 | 2.35 |
| 3.1.4.5 | 25% of torque defined in 3.1.4.2 | | | | | | |
| 10.1 | 2461 | 605 | 1639 | 5.18 | 6.18 | 515 | 1.63 |
| 3.1.4.6 | unloaded | | | | | | |
| / | 2478 | 609 | 1513 | 3.28 | 3.91 | / | / |
| 3.1.5<br>3.1.5.1 | PART LOADS AT STANDARD POWER TAKE-OFF SPEED [540 ± 10 $min^{-1}$ (rev/min)]<br>the torque corresponding to maximum power | | | | | | |
| 44.9 | 2211 | 543 | 2402 | 11.96 | 14.27 | 266 | 3.15 |
| 3.1.5.2 | 85% of torque defined in 3.1.5.1 | | | | | | |
| 38.6 | 2230 | 548 | 2455 | 10.50 | 12.53 | 272 | 3.08 |
| 3.1.5.3 | 75% of torque defined in 3.1.5.2 | | | | | | |
| 29.4 | 2276 | 559 | 2521 | 8.64 | 10.31 | 293 | 2.86 |
| 3.1.5.4 | 50% of torque defined in 3.1.5.2 | | | | | | |
| 20.1 | 2322 | 570 | 2317 | 6.66 | 7.95 | 332 | 2.52 |
| 3.1.5.5 | 25% of torque defined in 3.1.5.2 | | | | | | |
| 10.2 | 2356 | 579 | 1830 | 4.62 | 5.51 | 454 | 1.85 |
| 3.1.5.6 | unloaded | | | | | | |
| / | 2390 | 587 | 1565 | 2.76 | 3.29 | / | / |

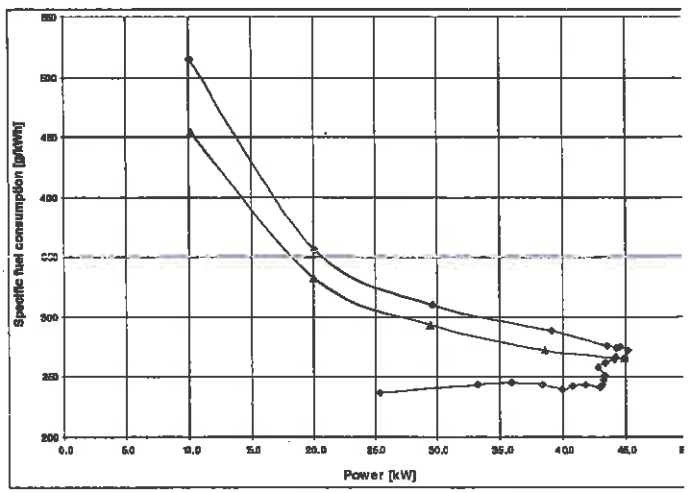
## 3.1.6 Curves as a function of engine speed



### 3.1.7 Other results

| | |
|---|---|
| No load maximum engine speed: | 2478 $min^{-1}$ |
| Torque (equivalent crankshaft) at maximum power | |
| At rated engine speed | 185.3 Nm |
| At two-hour test | 192.2 Nm |
| Maximum torque (equivalent crankshaft) | 257.9 Nm |
| (engine speed) | (1423 $min^{-1}$) |

| | |
|---|---|
| Mean atmospheric conditions: | |
| Temperature | 18 °C |
| Pressure | 101.8 kPa |
| Relative humidity | 51 % |
| Maximum temperature | |
| Coolant | 94 °C |
| Engine oil | 110 °C |
| Fuel | 45 °C |
| Engine air intake | 27 °C |

## 3.2 Hydraulic power and lifting force

- Date of tests: 08.03.2004

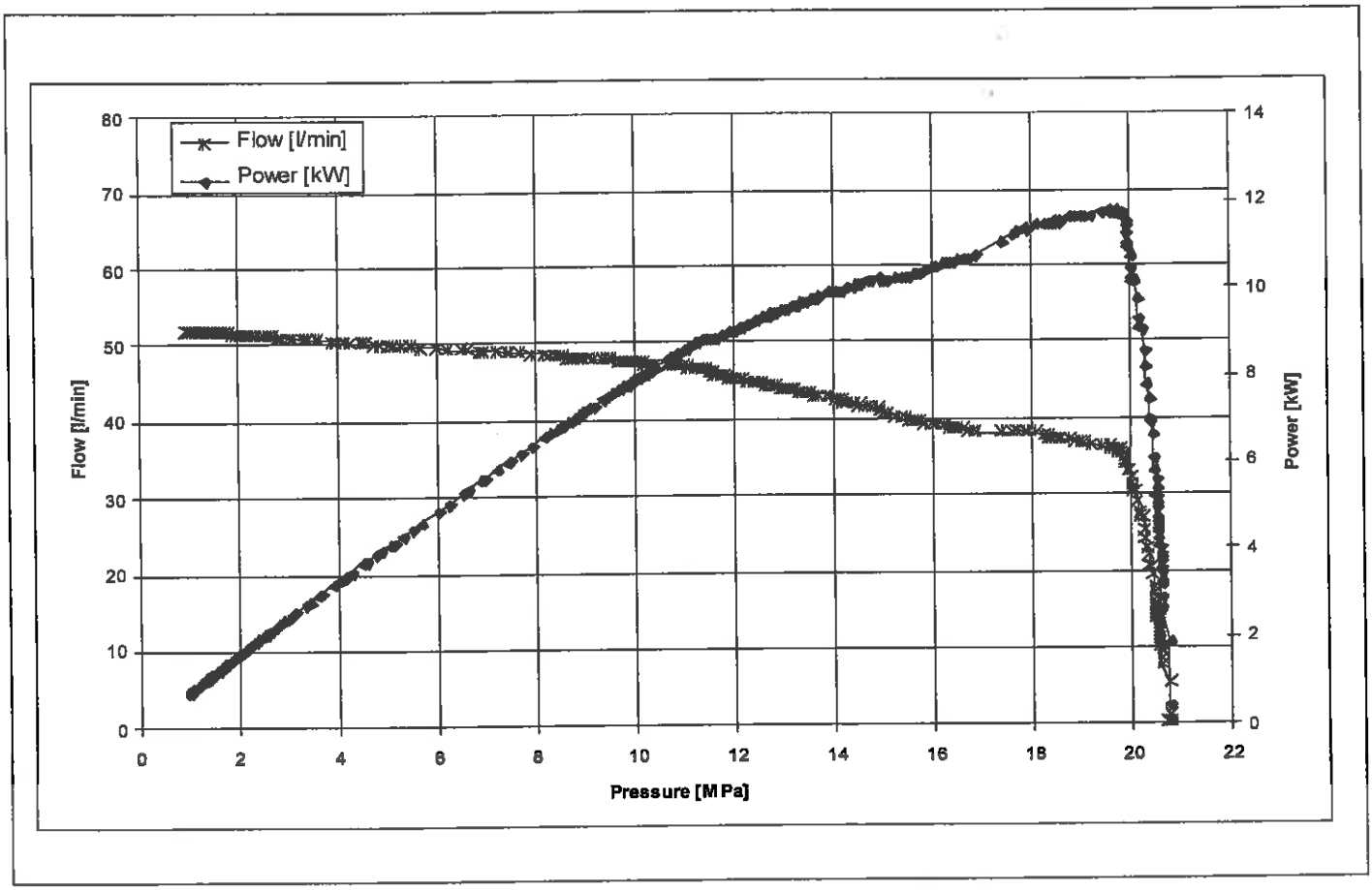
### 3.2.1 Hydraulic power test

#### 3.2.1.1 Hydraulic fluid data

- Hydraulic fluid type: AKCELA NEXPLORE
- Viscosity index: 120
- Viscosity at 65°C: 25 cSt

#### 3.2.1.2 Compulsory Reporting:

| | Pressure | Reservoir oil Temperature °C | | Engine Speed | Flow rate | Power |
|---|---|---|---|---|---|---|
| | MPa | Min. | Max. | $min^{-1}$ | l/min | kW |
| Rated Engine Speed | | | | | | |
| 3.2.1.2.1 Maximum (sustained) pressure with relief valve open as measured at the coupler Pump stalled: No | 20.76 | 60 | 69 | 2382 | | |
| 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: | 18.68 | 66 | | 2430 | 37.21 | 11.49 |
| 3.2.1.2.3 Maximum avaible flow and maximum power from one coupler pair: | 19.54 | 66 | | 2421 | 36.15 | 11.77 |

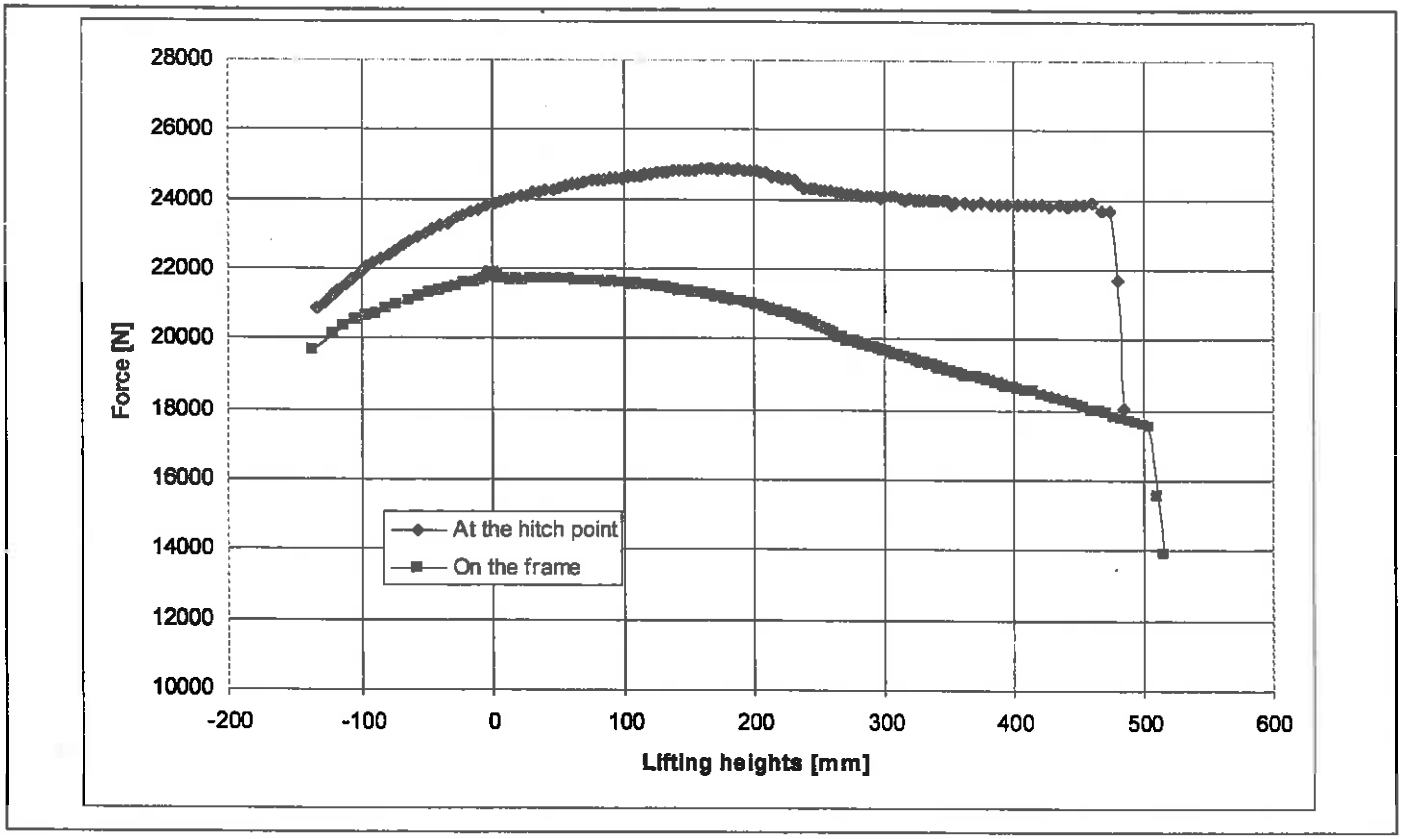



### 3.2.2 Power lift test:

- Linkage settings for test - see Table 2.1 and Figures 2.1 and 2.2.

| | At the hitch point | On the frame |
|---|---|---|
| Height of lower hitch points above ground in down position: | 373 mm | 357 mm |
| Vertical movement<br>- with lifting force<br>- without lifting force | <br>603 mm<br>636 mm | <br>642 mm<br>719 mm |
| Maximum corrected force exerted through full range | 21.03 kN | 17.54 kN |
| Corresponding pressure of hydraulic fluid | 18.68 MPa | 18.68 MPa |
| Moment about rear-wheel axis | 21.76 kNm | 25.78 kNm |
| Maximum tilt angle of mast from vertical | - | 10 degrees |

| Lifting heights relative to the horizontal plane including the lower link pivot points | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Lifting forces: | | | | | | | | |
| mm | -127 | -100 | 0 | 100 | 200 | 300 | 400 | 476 |
| at the hitch point in kN: | 21.03 | 21.91 | 23.85 | 24.61 | 24.81 | 24.06 | 23.87 | 23.70 |
| Corresponding pressure: 18.68 MPa | | | | | | | | |
| mm | -136 | -100 | 0 | 100 | 200 | 300 | 400 | 506 |
| on the frame in kN: | 19.66 | 20.41 | 21.85 | 21.59 | 21.00 | 19.70 | 18.66 | 17.54 |
| Corresponding pressure: 18.68 MPa | | | | | | | | |


28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
Force [N]
-200
-100
0
100
200
300
400
500
600
Lifting heights [mm]
At the hitch point
On the frame

### 3.3 *Drawbar Power test*

- Date of tests: 22.03.2004; 29.03.2004
- Type of track: concrete

| | Height of drawbar above ground | Tyre inflation pressure | |
|---|---|---|---|
| | | Front | Rear |
| | mm | kPa | kPa |
| Unballasted | 670 | 155 | 120 |
| Ballasted | 670 | 155 | 120 |

| Gear number and range | Power | Drawbar pull | Speed | Engine speed | Slip of wheels | Fan speed | Specific fuel consumption | Specific energy | Temperature | | | Atmospheric conditions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Fuel | Coolant | Engine oil | Teperature | Relative umidity | Pressure |
| | kW | kN | km/h | $min^{-1}$ | % | $min^{-1}$ | g/kWh | kWh/l | °C | °C | °C | °C | % | kPa |
| 3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor) | | | | | | | | | | | | | | |
| ML 1 | 14.40 | 21.51 | 2.41 | 2443 | 14.9 | 2251 | 424 | 1.98 | 57 | 86 | 108 | 17 | 54 | 101.2 |
| MH 1 | 17.34 | 21.30 | 2.93 | 2439 | 15.0 | 1814 | 387 | 2.16 | 55 | 87 | 107 | 16 | 54 | 101.2 |
| ML 2 | 21.29 | 21.59 | 3.55 | 2424 | 15.0 | 2637 | 344 | 2.43 | 56 | 86 | 104 | 17 | 54 | 101.2 |
| MH 2 | 26.00 | 21.67 | 4.32 | 2400 | 15.1 | 1971 | 329 | 2.55 | 57 | 85 | 105 | 18 | 54 | 101.2 |
| ML 3 | 30.78 | 21.48 | 5.16 | 2388 | 15.0 | 2280 | 314 | 2.67 | 57 | 84 | 105 | 17 | 54 | 101.2 |
| MH 3 | 35.00 | 20.42 | 6.17 | 2313 | 13.9 | 2548 | 322 | 2.60 | 56 | 85 | 104 | 16 | 54 | 101.2 |
| ML 4 | 36.17 | 16.91 | 7.70 | 2281 | 10.1 | 2515 | 333 | 2.52 | 56 | 86 | 105 | 17 | 54 | 101.2 |
| H 1 | 36.65 | 15.63 | 8.44 | 2262 | 8.8 | 2508 | 323 | 2.59 | 57 | 85 | 106 | 17 | 54 | 101.2 |
| MH 4 | 37.34 | 13.70 | 9.81 | 2285 | 6.8 | 2513 | 320 | 2.62 | 57 | 85 | 104 | 18 | 54 | .101.2 |
| H 2 | 37.90 | 10.32 | 13.22 | 2278 | 4.8 | 2503 | 313 | 2.68 | 59 | 85 | 105 | 17 | 54 | 101.2 |
| H 3 | 36.97 | 6.77 | 19.66 | 2273 | 3.3 | 2502 | 320 | 2.62 | 58 | 86 | 106 | 16 | 54 | 101.2 |
| 3.3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor) | | | | | | | | | | | | | | |
| L 4 | 11.85 | 22.93 | 1.86 | 2450 | 15.0 | 1550 | 469 | 1.79 | 57 | 85 | 104 | 16 | 56 | 101.2 |
| ML 1 | 15.52 | 23.22 | 2.41 | 2441 | 15.0 | 1436 | 413 | 2.03 | 58 | 84 | 105 | 15 | 56 | 101.2 |
| MH 1 | 18.53 | 22.85 | 2.92 | 2428 | 15.0 | 2372 | 367 | 2.28 | 58 | 85 | 104 | 15 | 56 | 101.2 |
| ML 2 | 22.78 | 23.17 | 3.54 | 2413 | 14.9 | 1982 | 341 | 2.46 | 58 | 86 | 105 | 16 | 56 | 101.2 |
| MH 2 | 27.41 | 22.95 | 4.30 | 2395 | 15.0 | 2339 | 322 | 2.60 | 57 | 85 | 104 | 15 | 56 | 101.2 |
| ML 3 | 32.52 | 22.91 | 5.11 | 2372 | 15.1 | 2422 | 321 | 2.61 | 57 | 84 | 104 | 14 | 56 | 101.2 |
| MH 3 | 34.12 | 20.17 | 6.09 | 2232 | 12.1 | 2450 | 329 | 2.55 | 56 | 85 | 105 | 15 | 56 | 101.2 |
| ML 4 | 36.18 | 16.72 | 7.79 | 2263 | 8.4 | 2488 | 328 | 2.56 | 57 | 86 | 107 | 14 | 56 | 101.2 |
| H 1 | 37.16 | 15.68 | 8.53 | 2263 | 7.8 | 2494 | 320 | 2.62 | 56 | 85 | 106 | 15 | 56 | 101.2 |
| MH 4 | 36.84 | 13.42 | 9.88 | 2284 | 6.1 | 2516 | 322 | 2.60 | 57 | 84 | 107 | 15 | 56 | 101.2 |
| H 2 | 35.13 | 9.67 | 13.08 | 2241 | 4.1 | 2473 | 337 | 2.48 | 54 | 85 | 105 | 16 | 56 | 101.2 |
| 3.3.3 FIVE-HOUR TESTS<br>3.3.3.1 FIVE-HOUR TESTS at 75% of the pull corresponding to maximum power at rated speeed | | | | | | | | | | | | | | |
| MH 3 | 28.84 | 15.16 | 6.85 | 2380 | 7.2 | 2602 | 330 | 2.54 | 54 | 84 | 107 | 18 | 62 | 102.0 |
| 3.3.3.2 FIVE-HOUR TESTS at pull corresponding to 15% of wheelslip, with additional ballast: 950 kg | | | | | | | | | | | | | | |
| ML 3 | 34.45 | 22.80 | 5.44 | 2318 | 7.7 | 2512 | - | - | 55 | 84 | 105 | 19 | 62 | 102.0 |
| Oil consumption during ten hours duration of tests 3.3.3.1 et 3.3.3.2: 13 g/h | | | | | | | | | | | | | | |

## 3.4 Turning area and turning circle

Wheel equipment if several sets of tyres are tested: not applicable

| | Without brakes | |
|---|---|---|
| | Right-hand | Left-hand |
| | m | m |
| Radius of turning area | 3.68 | 3.63 |
| Radius of turning circle | 3.58 | 3.53 |

## 3.5 Location of centre of gravity

- Height above ground 804 mm
- Distance from the vertical plane containing the axis of the rear-wheels 705 mm
- Distance from the median longitudinal plane of the tractor 6 mm (to the left)

## 3.6 Braking

- date of tests 05.04.2004

### 3.6.1 Cold service braking device test

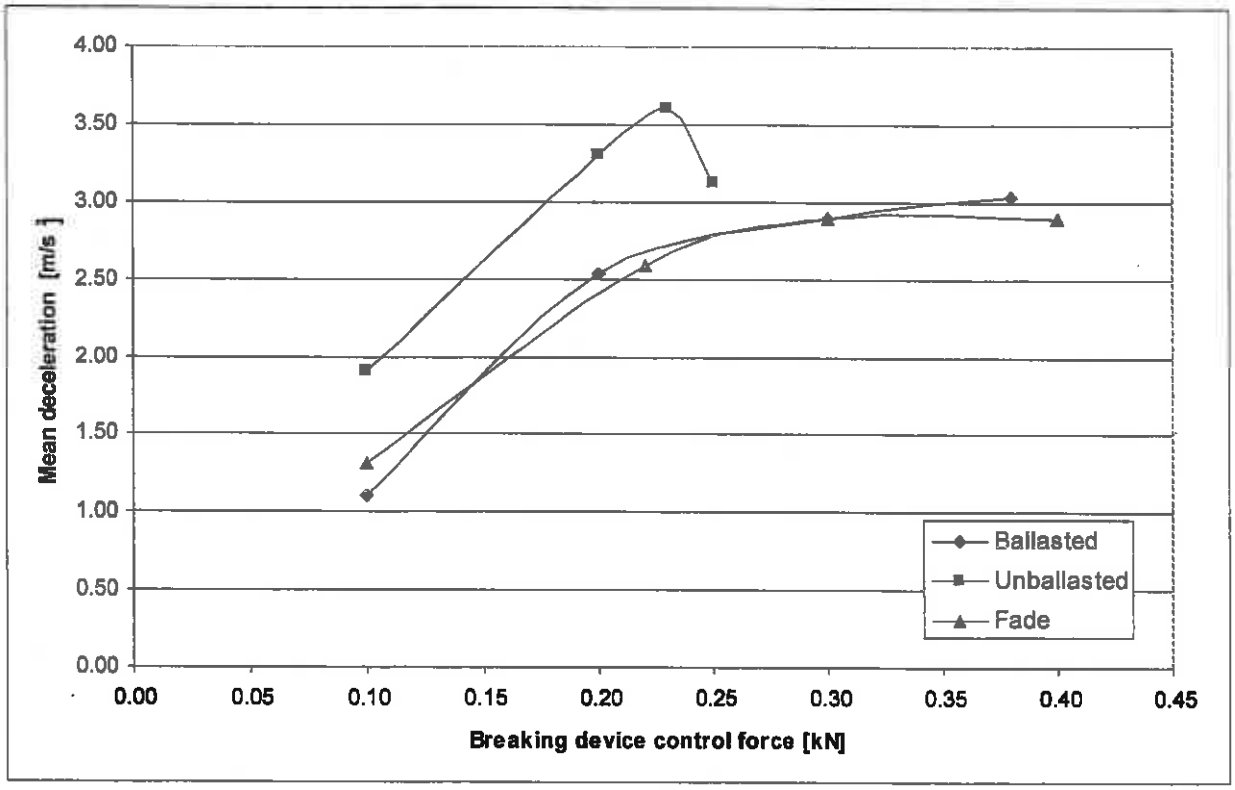
| | Speed before application of brakes | Braking device control force | Mean deceleration | Minimum stopping distance without locking the wheels |
|---|---|---|---|---|
| | km/h | kN | $m/s^2$ | m |
| Ballasted tractor | 32.5 | 0.10 | 1.10 | 37.2 |
| Ballasted tractor | 32.5 | 0.20 | 2.54 | 16.1 |
| Ballasted tractor | 32.5 | 0.30 | 2.90 | 14.1 |
| Ballasted tractor | 32.5 | 0.38 | 3.03 | 13.4 |
| Unballasted tractor | 32.5 | 0.10 | 1.90 | 21.4 |
| Unballasted tractor | 32.5 | 0.20 | 3.31 | 12.2 |
| Unballasted tractor | 32.5 | 0.23 | 3.60 | 11.3 |
| Unballasted tractor | 32.5 | 0.25 | 3.13 | 13.1 |

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

### 3.6.2 Fade test

| Speed before application of brakes | Braking device control force | Mean deceleration | Minimum stopping distance without locking the wheels |
|---|---|---|---|
| km/h | kN | $m/s^2$ | m |
| 32.5 | 0.1 | 1.31 | 31.1 |
| 32.5 | 0.22 | 2.59 | 15.7 |
| 32.5 | 0.30 | 2.90 | 14.1 |
| 32.5 | 0.40 | 2.90 | 14.0 |

- Maximum deviation of tractor from its original course: none
- Abnormal vibration: none
- Brake heating method: the tractor has been driven for 1 km at a speed of 26.0 km/h and the force for actuating the service brake has been 90 N




### 3.6.3 Parking braking device test

| | Uphill | downhill |
|---|---|---|
| Braking device control force | 0.38 kN | 0.40 kN |

## 3.7 *Measurement of external noise*

- Date of tests: 05.04.2004
- Sound level meter: Bruel&Kjaer / 2238
- Type of track: concrete
- Gear number: 4 high
- Travelling speed before acceleration: 24.4 km/h
- Sound level: 81.9 dB (A) (tractor right side)

# 4. OTHER TEST RESULTS

Not covered by OECD approval.

## *4.1 Test procedure for measuring hydraulic lift capacity on agricultural tractors equipped with three-point hitch - SAE J 283, Nov. 1999*

### 4.1.1 Tractor description

See:

Section 1 - Specification of tractor

Section 2 - Test conditions (excepted tyres)

Tested tractor was fitted with 6.50-16 tyres (with maximum overall diameter in service of 788 mm) on the front axle and 12.4R36 tyres (with maximum overall diameter in service of 1529 mm) on the rear axle.

### 4.1.2 Test conditions

Three-point hitch hydraulic system pressure setting: 20.75 MPa

Three-point hitch hydraulic system oil temperature: 45 ± 5 °C

Rated engine speed: 2300 $min^{-1}$

Tests have been performed in accordance with Section 4 - Static lift force of SAE J283. Settings of the three-point hitch specified in the table below. See figure 1.1 and 1.2 for more details on linkage geometry.

| | | 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) | 450 | 450 |
| Length of upper link: | (S) | 555⏲770 | 690 |
| Distance of upper link pivot point from rear wheel axis | | | |
| - horizontally (rearward): | (c) | 340-345 | 340 |
| - vertically: | (d) | 308-361 | 361 |
| 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) | 570⏲690 | 570 |

### 4.1.3 Static lift force

| Position of the hitch | Vertical lift force* | Vertical distance of lower hitch point above ground |
|---|---|---|
| | kN | mm |
| Lowest | 21.51 | 456 |
| 1/5 | 23.53 | 575 |
| 2/5 | 23.39 | 700 |
| 3/5 | 22.21 | 822 |
| 4/5 | 20.70 | 944 |
| Highest | 19.04 | 1066 |

* Reported values are 90% of measured

*Bologna, 24 June 2004*

TEST CARRIED OUT BY

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HEAD OF TESTING STATION

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