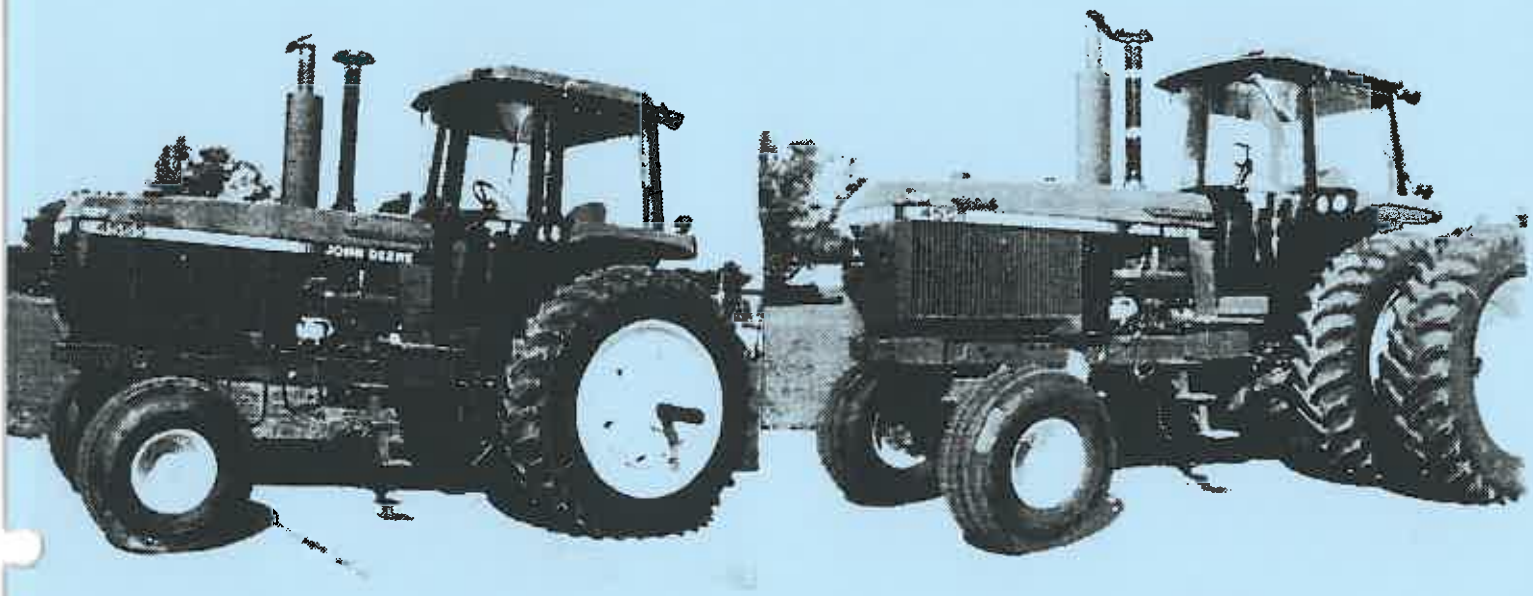
OECD APPROVAL # 1249
Date of approval: March 29, 1990

CENTER FOR AGRICULTURAL EQUIPMENT
DEPARTMENT OF AGRICULTURAL ENGINEERING
INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES
UNIVERSITY OF NEBRASKA - EAST CAMPUS
LINCOLN, NEBRASKA 68583-0832, USA

# REPORT ON TEST IN ACCORDANCE WITH OECD STANDARD CODE FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTOR PERFORMANCE

## RESTRICTED TEST-CODE II

## JOHN DEERE 4555 QUAD-RANGE (2 WD)



MANUFACTURED BY: John Deere Waterloo Works
P.O.Box 3500
Waterloo, Iowa 50706, USA

NEBRASKA TEST NO.1629

Test date: September 1989

This test report provides the results of the tests conducted in accordance with the OECD Standard Test Code for the Official Testing of Agricultural Tractor Performance - C(87)53 Final - Annex II, Restricted Code.

This report has been approved by the OECD Coordinating Centre in Paris (CEMAGREF) on March 29, 1990

John Deere 4555 Quad-Range OECD # 1249

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# SPECIFICATIONS OF TRACTOR.

| | |
|---|---|
| Manufacturers name/address | : John Deere Tractor Works<br>P.O. Box 3500<br>Waterloo, Iowa |
| Submitted for test by | : The manufacturer |
| Selected for test by | : The manufacturer in agreement with the test station. |
| Place of running in | : John Deere P.E.C.<br>Waterloo, Iowa |
| Duration of running in | : 70.0 hours. |
| Location of Test | : Center for Agricultural Equipment, Lincoln, Nebraska, USA. |

## TRACTOR SPECIFICATIONS.

| | |
|---|---|
| Make | John Deere |
| Model | 4555 |
| Type | Unit construction |
| Number of driving wheels | 2 |
| Serial Number | *RW4555H001833* |
| 1st Serial number | *RW4555H001001* |

## ENGINE.

| | |
|---|---|
| Make | John Deere |
| Model | 6076TRW07 |
| Type | Diesel, turbocharged. |
| Serial Number | *RG6076T109807* |
| **Cylinders** | |
| Number/Disposition | 6 in-line, vertical |
| Bore/stroke | 115.8 mm x 120.7 mm<br>(4.56 in x 4.75 in) |
| Capacity | 7634 ml (466 cu in) |
| Compression Ratio | 16.0 - 1 |
| Arrangement of valves | Overhead |
| Cylinder liners | Wet, replacable |
| **Super charging** | |
| Make/Model/Type | Air Research/RE29308/<br>exhaust gas driven |
| Pressure | 100-125 kPa (15-18 psi)<br>at rated speed and load |
| **Fuel System** | |
| Feed system | Transfer pump integral<br>with injection pump |
| Make/Type/Model of filters | Stanadyne/RE27091/<br>paper element |
| Fuel Tank capacity | 386 liter (102 US gallons) |

| | |
|---|---|
| Make/Model/Type Injection Pump | Nippondenso/RE36654/in line |
| Pump Serial number | 1J0272 |
| Production setting of pump | |
| Flow Rate (Rated Eng.Spd | 28.4 +/- 1.3 kg/hr |
| & Full Load) | 62.6 +/- 2.8 kg/hr |
| Make/Model/Type Injectors | Nippondenso/RE30084/21 mm |
| Injection pressure | 29.0 MPa (4200 psi) |
| Timing | 27 degrees before TDC |
| **Governor** | |
| Make/Model/Type | Nippondenso/RSV200/mechanical |
| Governed engine speed range | From 800 to 2400 rev/min |
| Rated engine speed | 2200 rev/min |
| High-idle speed range | 2375 +/-25 rev/min |
| **Air Cleaner.** | |
| Pre-cleaner | |
| Make/Model/Type | Donaldson/plastic mesh chaff screen |
| Air intake location | top of air stack |
| Primary Cleaner | |
| Make/Model/Type | Donaldson/AR80652/ pleated paper |
| Secondary element | |
| Make/Model/Type | Donaldson/AR80653/ pleated paper |
| Maintenance indicator | Dash mounted light and horn |
| **Lubrication system.** | |
| Type of feed pump | Full pressure, positive displacement |
| Type of filters | Full flow with bypass |
| Number | 1 |
| Oil cooler | Heat exchanger with engine coolant |
| **Cooling system.** | |
| Type of coolant | Liquid |
| Type of pump | Centrifugal |
| Fan specification | Belt driven, variable speed |
| Number of fan blades | 8 |
| Fan diameter | 660 mm (26.0 in) |
| Coolant system capacity | 30.3 l (32 qt) |
| Type of temperature control | 2 thermostats and variable speed fan |
| Superpressure system | 69 kPa (10 psi) |
| **Starting system.** | |
| Make/Model/Type of starter | Nippondenso/RE38336/electric |
| Power Rating | 4.75 kW (6.4 hp) |
| Cold starting aid | Ether spray in intake manifold. |
| Safety device | Electrical lockout on gearshift |

| | |
|---|---|
| **Electrical system.** | |
| Voltage & grounding. | 12 Volt DC;negative ground |
| Generator | |
| Make/Model/Type | Nippondenso/RE37201/belt driven |
| Power rating | 120 Amp @ 2200 engine rev/min. |
| Batteries | |
| Number & connection | 2-12 V batteries in parallel |
| Rating | 175 Ampere-hours per battery at 20 hour rating<br>925 cold crank Amps per battery |
| **Exhaust system.** | |
| Make/Model/Type | Donaldson/RE35449/ expansion chamber |
| Location | Above hood, left of centerline |

## TRANSMISSION.

| | |
|---|---|
| **Clutch. (travel)** | |
| Make/Model/Type | John Deere/multiple plate oil cooled |
| Number of plates | 2 |
| Plate diameter | 304.8 mm (12.0 in) |
| Method of operation | Hydraulically actuated by foot pedal. |
| **Gear Box.** | |
| Make/Model/Type | John Deere/Quad-Range |
| Arrangement | countershaft and planetary design consisting of:<br>one 8 speed gearbox with 4 non-synchronized ranges and 2 synchronized speeds in each range<br>one 2 speed planetary gearset with a multiple wet disc clutch and brake |
| Number of gears | 16 forward and 6 reverse controlled by 2 hand levers |
| Oil cooler | Heat exchanger with air |
| Available options | None |
| **Rear axle and final drives.** | |
| Make/Model/Type | John Deere/crown wheel and pinion, differential and planetary reduction |
| Differential Lock | |
| Type | Hydraulic |
| Method of engagement | Foot pedal |
| Method of disengagement | Self disengaging with brake |
| **Front Axle and final drives.** | |
| Make/Type | John Deere/not propelled |

Gear ratios and travel speeds.
(Tire dynamic radius of 892 mm (35.1 in) ISO 4251/1-1984)

| Gear Number | Number of engine revolutions for one revolution of the driving wheels | Nominal travel speed at rated engine speed of 2200 rev/min [km/h] | [mph] |
|---|---|---|---|
| Forward | | | |
| A1 | 218.25 | 3.39 | 2.11 |
| A2 | 171.88 | 4.30 | 2.67 |
| A3 | 120.81 | 6.12 | 3.80 |
| B1 | 97.65 | 7.58 | 4.71 |
| A4 | 95.12 | 7.78 | 4.83 |
| C1 | 83.11 | 8.90 | 5.53 |
| B2 | 76.90 | 9.62 | 5.97 |
| C2 | 65.46 | 11.30 | 7.02 |
| B3 | 54.04 | 13.69 | 8.50 |
| D1 | 51.29 | 14.42 | 8.95 |
| C3 | 46.00 | 16.08 | 9.99 |
| B4 | 42.55 | 17.39 | 10.80 |
| D2 | 40.40 | 18.31 | 11.37 |
| C4 | 36.23 | 20.42 | 12.68 |
| D3 | 28.38 | 26.07 | 16.19 |
| D4 | 22.35 | 33.10 | 20.56 |
| Reverse | | | |
| AR1 | 115.79 | 6.39 | 3.97 |
| AR2 | 91.17 | 8.11 | 5.04 |
| BR1 | 51.79 | 14.28 | 8.87 |
| CR1 | 44.08 | 16.78 | 10.42 |
| BR2 | 40.79 | 18.14 | 11.26 |
| CR2 | 34.72 | 21.31 | 13.23 |

## POWER - TAKE - OFF.

### Main Power-Take-Off.

| | |
|---|---|
| Type | Independent |
| Method of engagement | Hydraulically actuated multi-plate wet clutch operated by hand lever, independent of main drive clutch. |
| Number of shafts | One |

### Standard PTO. 1000 rev/min.

| | |
|---|---|
| Location | Rear of tractor, vertical center plane. |
| Diameter of shaft | 44.5 mm (1.75 inch) |
| Number of splines | 20; conforms to ISO 500/1979 |
| Height above ground | 714 mm (28.1 in) |
| Distance from median plane of tractor | 0 mm |
| Distance behind rear axle | 559 mm (22.0 in) |
| PTO Speed @ rated engine speed | 998 rev/min |
| Engine speed @ Std. PTO Speed | 2205 rev/min |
| Engine speed/PTO speed ratio | 2.2045 |
| Direction of rotation when viewed from shaft end | Clockwise. |

## POWER LIFT.

| | |
|---|---|
| Make | John Deere |
| Type of hydraulic system | Hydraulic lift with variable mix of draft and position control; Lower link sensing with adjustable speed of drop<br>Closed center |
| Number/Type of cylinders | One internal with one optional external, all single acting |
| Type of linkage lock for transport | Hydraulic |
| Relief valve setting | 17.5 +/- 0.30 MPa<br>2535 +/- 45 psi |
| Opening pressure of cylinder safety valve | 20.7 MPa (3000 psi) |
| Lift pump type | Radial piston,variable delivery constant pressure |
| Power transmission to pump | Direct drive |
| Type/Number of filters | paper element/one |
| Location of oil reservoir | Transmission housing |
| Number/Type/Location of tapping points. | 3 pairs of ISO standard coup - lings at rear of tractor. (a 4th set is optional) |
| Max. oil volume available for external cylinders | 6.0 l (6.3 qt)<br>13.0 l (13.7 qt) with 7.0 l (7.4 qt) allowable overfill |

## THREE POINT LINKAGE.

- Category 3 in conformity with ISO 730/1-1977
- Category adaptor - Quick coupler

THREE POINT LINKAGE.

Figure 1.1

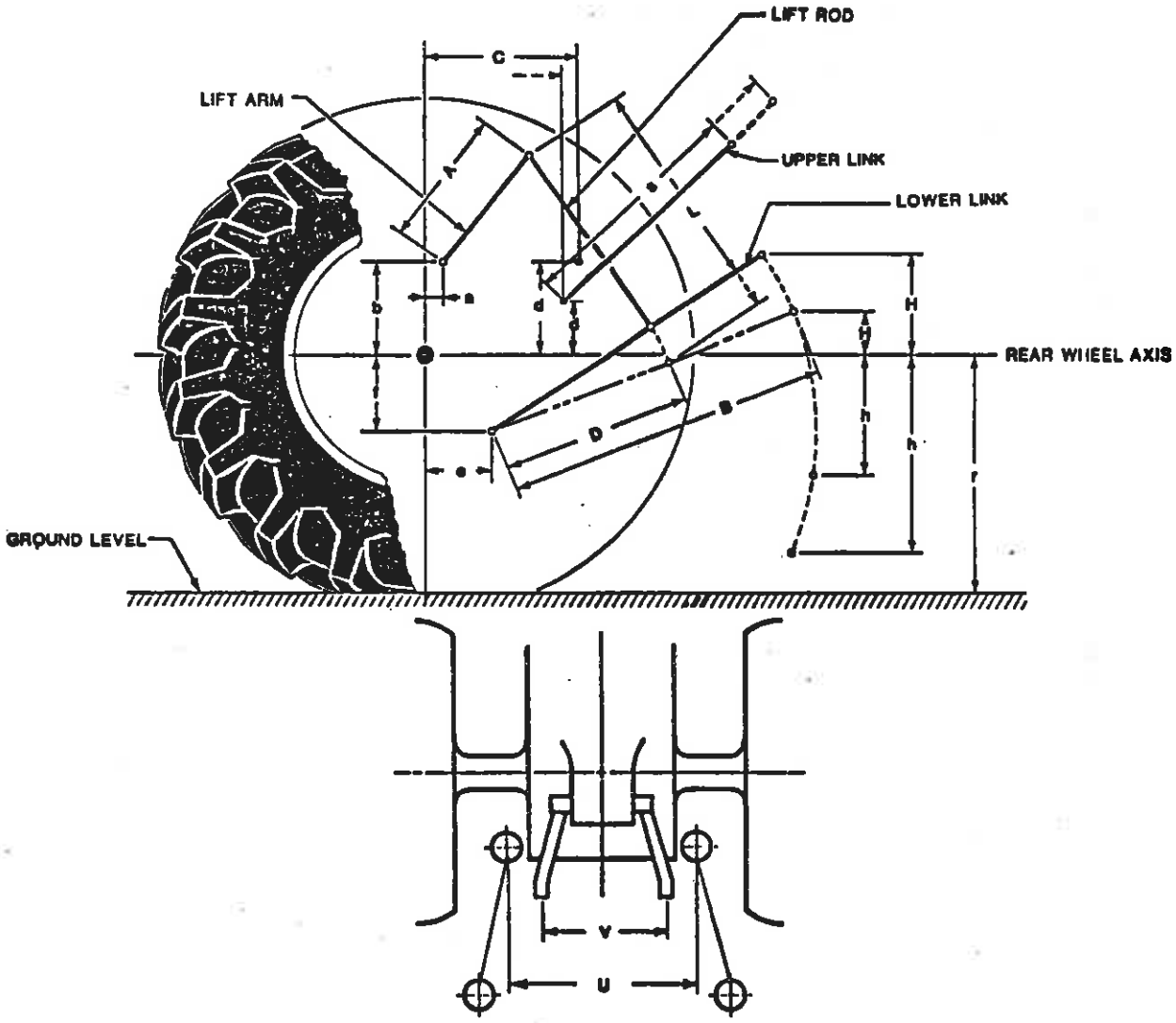



Figure 1.2

Table 1.1 -*Linkage geometry dimensions.

| | | Dimension or range [mm] | Dimension or range [in] | Settings used on test [mm] | Settings used on test [in] |
|---|---|---|---|---|---|
| Lift category | | III | | | |
| Rear Tire - Radius Index | (r) | 892 | 35.1 | | |
| Front Tire - Radius Index | (r') | 684 | 26.9 | | |
| Length of lift arms | (A) | 468 | 18.4 | same | |
| Length of lower links | (B) | 968 | 38.1 | same | |
| Distance of lift arm pivot from: horizontal | (a) | 0 | 0 | same | |
| rear wheel axis: vertical | (b) | 327 | 12.9 | same | |
| Horizontal distance between the 2 lower link points | (u) | 582 | 22.9 | same | |
| Horizontal distance between the 2 lift arm end points | (v) | 746 | 29.4 | same | |
| Length of upper link | (S) | 705 to 825 | 27.8 to 32.5 | 714 | 28.1 |
| Distance of upper link pivot from: horizontal | (c) | 384 | 15.1 | same | |
| rear wheel axis: vertical | (d) | 172 | 6.8 | same | |
| Distance of lower link pivot from: horizontal | (e) | 156 | 6.1 | same | |
| rear wheel axis: vertical | (f) | 330 | 13.0 | same | |
| Distance of lower link pivot points to lift rod pivot pts on lower links. | (D) | 716 | 28.2 | same | |
| Length of lift rods | (L) | 860 to 947 | 33.8 to 37.3 | 947 | 37.3 |
| Height of lower hitch points relative to rear wheel axis In low position | (h) | 526 to 648 | 20.7 to 25.5 | 660 | 26.0 |
| In high position | (H) | 160 to 254 | 6.3 to 10.0 | 162 | 6.4 |
| Height above ground of lower hitch points when locked in transport position. | | 1050 to 1145 | 41.4 to 45.1 | 1054 | 41.5 |

*Assuming (r) with a dynamic tire index of 892 mm (35.1 in)
ISO 4251/1-1984

## SWINGING DRAWBAR.

| | |
|---|---|
| Type | Oscillating |
| Height above ground | Minimum:455 mm (17.9)<br>Maximum:580 mm (22.9) |
| Adjustments | Inverting drawbar and repositioning clevis. |
| Distance of hitch point from rear wheel axis,horizontal | 1003 mm(39.5 in),1067 mm(42.0 in) |
| Distance of hitch point from PTO shaft end | |
| Vertical | 127 mm (5.0 in),222 mm (8.7 in) |
| Horizontal | 444 mm (17.5 in),508 mm (20.0 in) |
| Lateral adjustment; Right hand | 229 mm (9.0 in) |
| Left hand | 229 mm (9.0 in) |
| Distance of pivot point from rear wheel axis; horizontal | 511 mm (20.1 in) forward. |
| Diamater of drawbar pin hole | 37 mm (1.5 in) |
| Maximum vertical static permissible load | 16.4 kN (3650 lb) |

## STEERING

| | |
|---|---|
| Make/Model/Type | John Deere/Hydrostatic |
| Method of operation | Steering wheel |
| Pump | Same as main hydraulic pump |
| Ram(s) | Two internal |
| Working pressure | Same as main hydraulic pressure |

## BRAKES.

Service brake.

| | |
|---|---|
| Make/Model/Type | John Deere/oil immersed disc |
| Method of operation | Hydraulically actuated from main system; operated by two pedals which can be locked together. |

Parking brake.

| | |
|---|---|
| Type | Transmission lock |
| Method of operation | Gear selector lever. |

Trailering brake(optional)

| | |
|---|---|
| Type | Hydraulic |

## WHEELS.

| | |
|---|---|
| Number. | |
| Front | Two; Driving and steering |
| Rear | Two or four; Driving |
| Wheelbase | 3010 mm (118.5 in) |

Track width adjustment

| | Minimum [mm] | Minimum [in] | Maximum [mm] | Maximum [in] | Adjustment method |
|---|---|---|---|---|---|
| Front | 1550 | 61.0 | 2160 | 85.0 | Adjustable front alxe |
| Rear | 1574 | 62.0 | 2938 | 115.7 | Rack and pinion axle reversing wheels and offset lug rims |

## PROTECTIVE STRUCTURE.

| | |
|---|---|
| Make/Model/Type | John Deere/SG025/ Sound-Gard Cab |
| Manufacturer's name/address | John Deere Waterloo, Iowa |
| Protective device | Cab, not tiltable. |
| OECD approval number | CSS 010/3 |

## DRIVER'S SEAT.

| | |
|---|---|
| Make/Model/Type | John Deere/HydraCushioned |
| Type of damping and suspension | Gas charged accumulator and spring loaded attenuator |
| Range of adjustment | |
| Longitudinal | 150 mm (5.9 in) |
| Vertical | 64 mm (2.5 in) |
| Rotation | 25 degrees each way |

## LIGHTING.

| | Height above ground of center [mm] | Height above ground of center [in] | Size [mm] | Distance from out - side edge to median plane of tractor. [mm] | Distance from out - side edge to median plane of tractor. [in] |
|---|---|---|---|---|---|
| Headlights | 1735 | 68.3 | 50 x 125 | 317 | 12.5 |
| | 1945 | 76.6 | 100 dia. | 978 | 38.5 |
| Rearlights | 2810 | 110.6 | 100 dia. | 813 | 32.0 |
| | 2130 | 83.9 | 100 dia. | 813 | 32.0 |
| Rear reflectors | 2980 | 117.3 | 50 x 197 | 554 | 21.8 |
| | 1970 | 77.6 | 50 x 190 | 870 | 34.3 |

## TEST CONDITIONS.

Overall dimensions.

| | | |
|---|---|---|
| Length | | 4975 mm (195.9 in) |
| Width | Minimum | 2758 mm (108.6 in) |
| | Maximum | 2997 mm (118.0 in) |
| Height - Top of cab | | 3085 mm (121.5 in) |
| - Top of exhaust | | 3190 mm (125.6 in) |
| Ground clearance. (unballasted) | | 420 mm (16.5 in) |
| Clearance-limiting part | | Hitch sway blocks |

Tractor Mass (with cab,full fuel tank).

| | | without driver [kg] | [lb] | with driver [kg] | [lb] |
|---|---|---|---|---|---|
| Unballasted | Front | 2186 | 4820 | 2186 | 4820 |
| | Rear | 4999 | 11020 | 5073 | 11185 |
| | Total | 7185 | 15840 | 7259 | 16005 |
| Ballasted | Front | 2184 | 4815 | 2184 | 4815 |
| | Rear | 6319 | 13930 | 6393 | 14095 |
| | Total | 8503 | 18745 | 8577 | 18910 |

Ballast.

| | Number of weights | Mass (total) [kg] | [lb] | Water [kg] | [lb] |
|---|---|---|---|---|---|
| Front | none | | | none | |
| Rear | 2 | 454 | 1000 | none | |
| Duals (rear) | 2 | 776 | 1710 | | |
| Additional test equipment | | 88 | 195 | | |

Tire Specifications.

| | Front | Rear |
|---|---|---|
| Make | Goodyear | Goodyear |
| Dimensions | 14L-16.1 | 18.4R42 |
| Ply rating | (10 ply) | 2 star (10 ply) |
| Type | Rib | Radial |
| Max.load (tire manufacturer) | 1740 kg/tire (3830 lb/tire) | 3320 kg/tire (7400 lb/tire) |
| Max.load(tractor manufacturer) | 1740 kg/tire) (3830 lb/tire) | 3320 kg/tire (7400 lb/tire) |
| Inflation pressure (tire mfr) | 303 kPa(44 psi) | 166 kPa(24 psi) |
| Dynamic Radius Index | 457 mm(18.0 in) | 892 mm (35.1 in) |
| Chosen track width - singles | 1550 mm(61.0 in) | 1675 mm (66.0 in) |
| - duals | | 3250 mm(128.0 in) |

Oils and Lubrication.

Capacity and change interval:

| | Capacity liter | Capacity quart | Oil change hrs | Filter change hrs |
|---|---|---|---|---|
| Engine (w/o filter) | 21 | 22 | 250 | 250 |
| Gear Box (includes rear axle and rear final drive) | 101.8 | 108 | 1500 | Annually |
| Hydraulic system | common with gear box | | | |

Oil and Lubricant specifications:

| | Recommended | Used during test |
|---|---|---|
| Engine oil | | |
| Type | John Deere Torq-Gard Supreme | same |
| Viscosity | 102 cSt | |
| Classification | API - CD Mil-L-2104D | |
| Transmission | | |
| Type | John Deere Hy-Gard | same |
| Viscosity | 58 cSt | |
| Classification | NA | |
| Hydraulic fluid | same as transmission oil | same |
| Steering oil | same as transmission oil | same |
| Grease | | |
| Number of lubrication points | 23 | |

Fuel

| | |
|---|---|
| Type/grade | Diesel Fuel "Premier";grade 2-D |
| Density (Pto test) | 0.828 g/cubic-cm (6.912 lb/gallon) at 15 'C (59 'F) |
| (Drawbar test) | same as Pto test. |
| Cetane number | 51.1 |
| Viscosity | 2.31 cSt at 38 'C (100 'F) |

Remarks: This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures.

## COMPULSORY TESTS.

### (1) MAIN POWER TAKE-OFF PERFORMANCE (1000 rev/min).

Date of tests : 19 September 1989
Location of tests : Center for Agricultural Equipment, University of Nebraska, Lincoln, Nebraska.
Type of Dynamometer: Eaton Dynamatic 2025 D.G.

| Power kW (hp) | Speeds engine rev/min | Speeds PTO rev/min | Fuel Consumption hourly l/h (gal/h) | Fuel Consumption hourly kg/h (lb/h) | Fuel Consumption specific kg/kW.h (lb/hp.h) | Specific energy kW.h/l (hp.h/gal) |
|---|---|---|---|---|---|---|
| 1.1 Maximum Power- 2 hour test. | | | | | | |
| 121.20 (162.53) | 1950 | 885 | 33.67 (8.90) | 27.88 (61.24) | 0.230 (0.378) | 3.60 (18.27) |
| 1.2 Power at rated engine speed (1 hour). | | | | | | |
| 116.95 (156.83) | 2200 | 998 | 34.11 (9.01) | 28.24 (62.26) | 0.241 (0.397) | 3.43 (17.41) |
| 1.3 Maximum power at standard PTO speed (1000 rev/min). | | | | | | |
| 116.95 (156.83) | 2200 | 998 | 34.11 (9.01) | 28.24 (62.26) | 0.241 (0.397) | 3.43 (17.41) |

1.4 Part Loads – governor hand lever set for maximum power at rated engine speed

| Power kW (hp) | Speeds engine rev/min | Speeds PTO rev/min | Fuel Consumption hourly l/h (gal/h) | Fuel Consumption hourly kg/h (lb/h) | Fuel Consumption specific kg/kW.h (lb/hp.h) | Specific energy kW.h/l (hp.h/gal) |
|---|---|---|---|---|---|---|
| i. Torque corresponding to maximum power at rated engine speed. | | | | | | |
| 116.95 (156.83) | 2200 | 998 | 34.11 (9.01) | 28.24 (62.26) | 0.241 (0.397) | 3.43 (17.41) |
| ii. 85% of the torque obtained in (i) | | | | | | |
| 102.28 (137.16) | 2264 | 1027 | 30.90 (8.16) | 25.58 (56.40) | 0.250 (0.411) | 3.31 (16.80) |
| iii. 75% of the torque defined in (ii) | | | | | | |
| 77.93 (104.51) | 2299 | 1043 | 25.47 (6.73) | 21.09 (46.50) | 0.271 (0.445) | 3.06 (15.53) |
| iv. 50% of the torque defined in (ii) | | | | | | |
| 52.77 (70.77) | 2331 | 1058 | 20.05 (5.30) | 16.60 (36.60) | 0.315 (0.517) | 2.63 (13.36) |
| v. 25% of the torque defined in (ii) | | | | | | |
| 26.59 (35.65) | 2358 | 1070 | 14.79 (3.91) | 12.25 (27.00) | 0.461 (0.757) | 1.80 (9.12) |
| vi. unloaded | | | | | | |
| 0.96 (1.29) | 2388 | 1083 | 2.52 (9.53) | 7.89 (17.40) | 8.213 (13.501) | 0.10 (0.51) |

1.5 Part Loads – governor hand lever set for maximum power at standard pto speed.

| Power kW (hp) | Speeds engine rev/min | Speeds PTO rev/min | Fuel Consumption hourly l/h (gal/h) | Fuel Consumption hourly kg/h (lb/h) | Fuel Consumption specific kg/kW.h (lb/hp.h) | Specific energy kW.h/l (hp.h/gal) |
|---|---|---|---|---|---|---|
| i. Torque corresponding standard PTO rpm | | | | | | |
| 116.95 (156.83) | 2200 | 998 | 34.11 (9.01) | 28.24 (62.26) | 0.241 (0.397) | 3.43 (17.41) |
| ii. 85% of the torque obtained in (i) | | | | | | |
| 102.28 (137.16) | 2264 | 1027 | 30.90 (8.16) | 25.58 (56.40) | 0.250 (0.411) | 3.31 (16.80) |
| iii. 75% of the torque defined in (ii) | | | | | | |
| 77.93 (104.51) | 2299 | 1043 | 25.47 (6.73) | 21.09 (46.50) | 0.271 (0.445) | 3.06 (15.53) |
| iv. 50% of the torque defined in (ii) | | | | | | |
| 52.77 (70.77) | 2331 | 1058 | 20.05 (5.30) | 16.60 (36.60) | 0.315 (0.517) | 2.63 (13.36) |
| v. 25% of the torque defined in (ii) | | | | | | |
| 26.59 (35.65) | 2358 | 1070 | 14.79 (3.91) | 12.25 (27.00) | 0.461 (0.757) | 1.80 (9.12) |
| vi. Unloaded | | | | | | |
| 0.96 (1.29) | 2388 | 1083 | 9.53 (2.52) | 7.89 (17.40) | 8.213 (13.501) | 0.10 (0.51) |

No-load maximum engine speed 2388 rev/min

Equivalent engine torque:

| | |
|---|---|
| at rated engine speed | 508 Nm (2200 rev/min) |
| at maximum power | 593 Nm (1950 rev/min) |
| at maximum torque | 684 Nm (1451 rev/min) |

Mean atmospheric conditions:

| | |
|---|---|
| Temperature-dry bulb | 24 °C (75 °F) |
| Relative humidity | 56 % |
| Barometric pressure | 97.84 kPa (28.89 in Hg) |

| | | |
|---|---|---|
| Maximum temperatures: | | |
| | Thermostat housing | 91 °C (195 °F) |
| | Engine oil | 108 °C (226 °F) |
| | Fuel at injection pump | 47 °C (117 °F) |
| | Engine air intake | 32 °C (89 °F) |
| | Trans./Hydr. Oil | 59 °C (139 °F) |
| Turbocharger boost pressure: | | |
| | at rated engine speed | 117 kPa (17.0 psi) |
| | at maximum power | 114 kPa (16.5 psi) |

## 2. HYDRAULIC POWER AND LIFTING FORCE.

Date of test: 26 September 1989
Location: CAE/UNL, Lincoln, Nebr.

### 2.1 HYDRAULIC POWER TEST - Hydraulic Pump Performance

| | |
|---|---|
| Sustained pressure with pump stalled | 17.79 MPa (2580 psi) |
| Pump delivery rate @ minimum pressure & rated engine speed | 133.6 l/m (35.3 gpm) |

| | Flow Rate l/min (gal/min) | Pressure MPa (psi) | Power kW (hp) |
|---|---|---|---|
| At 90% of relief valve setting | 32.9 (8.7) | 16.00 (2320) | 8.8 (11.8) |
| At maximum hydraulic power. | 128.3 (33.9) | 12.07 (1750) | 25.8 (34.6) |

| | |
|---|---|
| Tapping point(s) | Two hydraulic outlets combined |
| Hydraulic fluid temperature | |
| in oil reservoir | 71 °C (159 °F) |
| at flow meter | 73 °C (163 °F) |

## 2.2 POWER LIFT TEST.

| | | Hitch Points | Frame |
|---|---|---|---|
| Lower hitch points above ground - down position. | [mm/in] | 257/10.4 | 249/9.8 |
| Vertical movement without load | [mm/in] | 822/32.4 | 940/37.0 |
| Vertical movement with load | [mm/in] | 787/31.0 | 897/35.3 |
| Maximum corrected force through full range | [kN/lbf] | 27.3/6129 | 25.9/5821 |
| Corresponding pressure | [kPa/psi] | 12066/1750 | |
| Moment about rear axle | [kN.m/ft.lb] | 34.1/25127 | 48.1/35511 |
| Maximum mast tilt angle | [degrees] | -- | 9.6 |

Lifting height relative to the horizontal position of lower links

| | | | | | | |
|---|---|---|---|---|---|---|
| [mm] | -312 | -305 | -226 | -127 | 0 | 102 |
| [in] | -12.3 | -12.0 | -8.9 | -5.0 | 0 | 4.0 |

Corrected lift forces.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| hitch points | [kN] | -- | 27.3 | 29.2 | 30.9 | 33.0 | 33.9 |
| | [lb] | -- | 6129 | 6557 | 6936 | 7414 | 7621 |
| at frame | [kN] | 27.2 | -- | 28.1 | 28.8 | 29.5 | 29.5 |
| | [lb] | 6114 | -- | 6307 | 6486 | 6643 | 6629 |

Lifting height relative to the horizontal position of lower links

| | | | | | |
|---|---|---|---|---|---|
| [mm] | 203 | 305 | 406 | 483 | 584 |
| [in] | 8.0 | 12.0 | 16.0 | 19.0 | 23.0 |

Corrected lift forces.

| | | | | | | |
|---|---|---|---|---|---|---|
| hitch points | [kN] | 34.9 | 35.7 | 36.3 | 37.7 | -- |
| | [lb] | 7850 | 8029 | 8164 | 8480 | -- |
| at frame | [kN] | 29.0 | 28.0 | -- | 26.9 | 25.9 |
| | [lb] | 6521 | 6286 | -- | 6057 | 5821 |

## THREE POINT LIFT PERFORMANCE
(With 44 mm. lift assist cylinder)
(for settings used see p.8)

| | | Hitch Points | Frame |
|---|---|---|---|
| Lower hitch points above ground - down position. | [mm/in] | 257/10.1 | 244/9.6 |
| Vertical movement without load | [mm/in] | 822/32.4 | 940/37.0 |
| Vertical movement with load | [mm/in] | 787/31.0 | 899/35.4 |
| Maximum corrected force through full range | [kN/lbf] | 30.9/6957 | 29.4/6614 |
| Corresponding pressure | [kPa/psi] | 12066/1750 | |
| Moment about rear axle | [kN.m/ft.lb] | 38.7/28524 | 54.7/40347 |
| Maximum mast tilt angle | [degrees] | -- | 9.4 |

Lifting height relative to the horizontal position of lower links

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | [mm] | -318 | -305 | -229 | -127 | 0 | 102 |
| | [in] | -12.5 | -12.0 | -9.0 | -5.0 | 0 | 4.0 |
| Corrected lift forces. | | | | | | | |
| hitch points | [kN] | -- | 30.9 | 32.8 | 35.4 | 37.8 | 39.1 |
| hitch points | [lb] | -- | 6957 | 7379 | 7950 | 8500 | 8800 |
| at frame | [kN] | 30.8 | -- | 32.2 | 33.0 | 33.9 | 33.9 |
| at frame | [lb] | 6930 | -- | 7236 | 7429 | 7629 | 7629 |

Lifting height relative to the horizontal position of lower links

| | | | | | | |
|---|---|---|---|---|---|---|
| [mm] | 203 | 305 | 406 | 483 | 582 | |
| [in] | 8.0 | 12.0 | 16.0 | 19.0 | 22.9 | |
| Corrected lift forces. | | | | | | |
| hitch points [kN] | 39.9 | 40.4 | 41.3 | 42.5 | -- | |
| hitch points [lb] | 8971 | 9079 | 9293 | 9559 | -- | |
| at frame [kN] | 33.3 | 32.0 | -- | 30.8 | 29.4 | |
| at frame [lb] | 7486 | 7186 | -- | 6914 | 6614 | |

## THREE POINT LIFT PERFORMANCE
(With 55 mm. lift assist cylinder)
(for settings used see p.8)

| | Hitch Points | Frame |
|---|---|---|
| Lower hitch points above ground - down position. [mm/in] | 257/10.1 | 250/9.8 |
| Vertical movement without load [mm/in] | 822/32.4 | 940/37.0 |
| Vertical movement with load [mm/in] | 787/31.0 | 894/35.2 |
| Maximum corrected force through full range [kN/lbf] | 33.3/7479 | 31.4/7057 |
| Corresponding pressure [kPa/psi] | 12066/1750 | |
| Moment about rear axle [kN.m/ft.lb] | 41.6/30662 | 58.4/43049 |
| Maximum mast tilt angle [degrees] | -- | 9.4 |

Lifting height relative to the horizontal position of lower links

| | | | | | | |
|---|---|---|---|---|---|---|
| [mm] | -312 | -305 | -229 | -127 | 0 | 102 |
| [in] | -12.3 | -12.0 | -9.0 | -5.0 | 0 | 4.0 |
| Corrected lift forces. | | | | | | |
| hitch points [kN] | -- | 33.3 | 35.5 | 38.2 | 40.7 | 41.7 |
| hitch points [lb] | -- | 7479 | 7979 | 8586 | 9150 | 9386 |
| at frame [kN] | 32.9 | -- | 33.8 | 35.7 | 36.2 | 36.2 |
| at frame [lb] | 7392 | -- | 7602 | 8036 | 8129 | 8136 |

Lifting height relative to the horizontal position of lower links

| | | | | | |
|---|---|---|---|---|---|
| [mm] | 203 | 305 | 406 | 478 | 582 |
| [in] | 8.0 | 12.0 | 16.0 | 18.8 | 22.9 |
| Corrected lift forces. | | | | | |
| hitch points [kN] | 42.9 | 43.4 | 44.1 | 45.7 | -- |
| hitch points [lb] | 9636 | 9764 | 9921 | 10274 | -- |
| at frame [kN] | 34.8 | 33.6 | -- | 32.2 | 31.4 |
| at frame [lb] | 7826 | 7546 | -- | 7231 | 7057 |

## 3. DRAWBAR POWER AND FUEL CONSUMPTION (UNBALLASTED TRACTOR)

### OECD Drawbar Data (SI)

Date of tests: 21-Sep-89 22-Sep-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1629

| Gear | Power | Pull | Speed | Engine Speed | Slip | SFC | | Temperature, deg C | | | | | Rel hum | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | kW | kN | km/h | rev/min | % | kg/kW.h | kW.h/l | Fuel | Coolant | Oil | Dry | Wet | % | kPa |
| I. Maximum Power (unballasted @ 1950 rev/min) Tire pressure: 152 kPa, rear 303 kPa, front<br>Drawbar height: 597 mm | | | | | | | | | | | | | | |
| 2nd(A2) | 61.38 | 57.80 | 3.82 | 2297 | 14.15% | 0.337 | 2.45 | 45 | 82 | 101 | 14 | 11 | 70% | 97.97 |
| 3rd(A3) | 86.05 | 57.98 | 5.34 | 2264 | 14.35% | 0.310 | 2.67 | 47 | 83 | 103 | 14 | 11 | 70% | 97.93 |
| 4th(B1) | 101.49 | 52.13 | 7.01 | 2198 | 6.64% | 0.279 | 2.97 | 49 | 84 | 103 | 18 | 16 | 82% | 97.87 |
| 5th(A4) | 102.28 | 53.17 | 6.92 | 2151 | 7.96% | 0.275 | 3.01 | 49 | 84 | 102 | 19 | 17 | 82% | 97.87 |
| 6th(C1) | 103.33 | 49.27 | 7.55 | 2020 | 6.79% | 0.272 | 3.05 | 50 | 86 | 104 | 19 | 17 | 82% | 97.87 |
| 7th(B2) | 105.90 | 48.33 | 7.89 | 1950 | 6.71% | 0.264 | 3.14 | 48 | 86 | 104 | 21 | 17 | 67% | 97.87 |
| 8th(C2) | 106.67 | 40.75 | 9.42 | 1952 | 5.27% | 0.262 | 3.16 | 49 | 86 | 104 | 21 | 17 | 67% | 97.87 |
| 9th(B3) | 105.16 | 32.79 | 11.54 | 1948 | 3.94% | 0.265 | 3.13 | 48 | 86 | 103 | 21 | 18 | 75% | 97.8 |
| 10th(D1) | 105.24 | 31.07 | 12.19 | 1949 | 3.77% | 0.266 | 3.12 | 47 | 86 | 103 | 22 | 18 | 68% | 97.87 |
| 11th(C3) | 105.27 | 27.73 | 13.66 | 1949 | 3.27% | 0.265 | 3.13 | 47 | 86 | 103 | 22 | 18 | 68% | 97.87 |

### OECD Drawbar Data (US)

Date of tests: 21-Sep-89 22-Sep-89 Fuel density: 6.910 lb/gal
Type of track: Concrete Test # 1629

| Gear | Power | Pull | Speed | Engine Speed | Slip | SFC | | Temperature, deg F | | | | | Rel hum | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | hp | lb | mph | rpm | % | lb/hp-hr | hp-hr/gal | Fuel | Coolant | Oil | Dry | Wet | % | in Hg |
| I. Maximum Power (unballasted @ 1950 rev/min) Tire pressure: 22 psi, rear 44 psi, front<br>Drawbar height: 23.5 in | | | | | | | | | | | | | | |
| 2nd(A2) | 82.31 | 12995 | 2.38 | 2297 | 14.15% | 0.555 | 12.46 | 114 | 180 | 215 | 58 | 52 | 70% | 28.93 |
| 3rd(A3) | 115.40 | 13035 | 3.32 | 2264 | 14.35% | 0.509 | 13.58 | 116 | 182 | 217 | 57 | 51 | 70% | 28.92 |
| 4th(B1) | 136.10 | 11719 | 4.36 | 2198 | 6.64% | 0.458 | 15.09 | 120 | 183 | 217 | 64 | 60 | 82% | 28.90 |
| 5th(A4) | 137.16 | 11954 | 4.30 | 2151 | 7.96% | 0.452 | 15.28 | 120 | 184 | 216 | 66 | 62 | 82% | 28.90 |
| 6th(C1) | 138.57 | 11077 | 4.69 | 2020 | 6.79% | 0.447 | 15.46 | 122 | 187 | 219 | 67 | 62 | 82% | 28.90 |
| 7th(B2) | 142.01 | 10866 | 4.90 | 1950 | 6.71% | 0.434 | 15.93 | 119 | 188 | 220 | 69 | 63 | 67% | 28.90 |
| 8th(C2) | 143.04 | 9161 | 5.86 | 1952 | 5.27% | 0.430 | 16.07 | 120 | 187 | 219 | 69 | 63 | 67% | 28.90 |
| 9th(B3) | 141.02 | 7373 | 7.17 | 1948 | 3.94% | 0.435 | 15.88 | 119 | 187 | 217 | 70 | 64 | 75% | 28.90 |
| 10th(D1) | 141.13 | 6985 | 7.58 | 1949 | 3.77% | 0.437 | 15.83 | 116 | 187 | 218 | 72 | 65 | 68% | 28.90 |
| 11th(C3) | 141.17 | 6235 | 8.49 | 1949 | 3.27% | 0.435 | 15.88 | 117 | 187 | 218 | 72 | 65 | 68% | 28.90 |

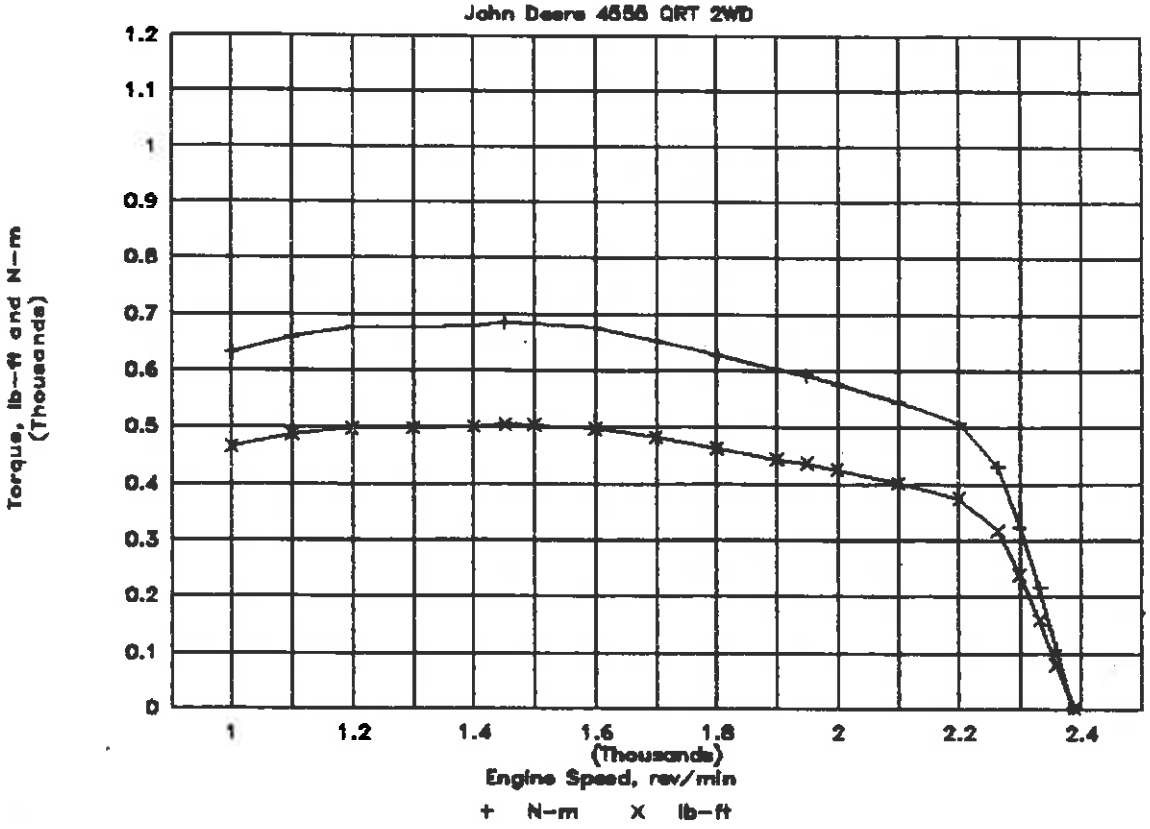
Date of tests: 21-Sep-89 22-Sep-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1629

| Gear | Power | Pull | Speed | Engine Speed | Slip | SFC | | Temperature, deg C | | | | | Rel hum | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | kW | kN | km/h | rev/min | % | kg/kW.h | kW.h/l | Fuel | Coolant | Oil | Dry | Wet | % | kPa |
| II. Part Loads (unballasted) | | | | | | Tire pressure: | | 152 kPa, rear | | | 303 kPa, front | | | |
| | | | Drawbar height: | 597 mm | | | | | | | | | | |
| II.1 in selected gear at maximum power | | | | | | | | | | | | | | |
| 8th(C2) | 106.67 | 40.75 | 9.42 | 1952 | 5.27% | 0.262 | 3.16 | 49 | 86 | 104 | 21 | 17 | 67% | 97.87 |
| II.1.1 75% of pull at maximum power at rated speed | | | | | | | | | | | | | | |
| 8th 75% | 82.09 | 26.31 | 11.23 | 2275 | 3.01% | 0.289 | 2.86 | 43 | 83 | 100 | 24 | 19 | 62% | 97.83 |
| II.1.2 50% of pull at maximum power at rated speed | | | | | | | | | | | | | | |
| 8th 50% | 56.22 | 17.55 | 11.53 | 2311 | 2.15% | 0.330 | 2.51 | 43 | 82 | 101 | 24 | 19 | 62% | 97.83 |
| II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1 | | | | | | | | | | | | | | |
| 10th 75% | 82.15 | 26.32 | 11.24 | 1782 | 3.01% | 0.269 | 3.08 | 42 | 84 | 101 | 24 | 19 | 62% | 97.83 |
| II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2 | | | | | | | | | | | | | | |
| 10th 50% | 56.05 | 17.51 | 11.53 | 1811 | 2.15% | 0.294 | 2.82 | 41 | 81 | 100 | 24 | 19 | 62% | 97.83 |
| II.2 in selected gear nearest to 7.5 km/h | | | | | | | | | | | | | | |
| 4th(B1) | 101.49 | 52.13 | 7.01 | 2198 | 6.64% | 0.279 | 2.97 | 49 | 84 | 103 | 18 | 16 | 82% | 97.87 |
| II.2.1 75% of pull at maximum power at rated speed | | | | | | | | | | | | | | |
| 4th 75% | 80.57 | 39.10 | 7.42 | 2284 | 4.94% | 0.293 | 2.82 | 44 | 84 | 102 | 22 | 18 | 68% | 97.87 |
| II.2.2 50% of pull at maximum power at rated speed | | | | | | | | | | | | | | |
| 4th 50% | 55.54 | 26.06 | 7.67 | 2320 | 3.10% | 0.329 | 2.52 | 43 | 82 | 101 | 23 | 19 | 69% | 97.87 |
| II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1 | | | | | | | | | | | | | | |
| 7th 75% | 80.55 | 39.09 | 7.42 | 1800 | 4.94% | 0.267 | 3.10 | 42 | 84 | 102 | 22 | 18 | 68% | 97.87 |
| II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2 | | | | | | | | | | | | | | |
| 7th 50% | 55.63 | 26.06 | 7.68 | 1829 | 3.10% | 0.290 | 2.86 | 42 | 81 | 100 | 23 | 19 | 69% | 97.87 |

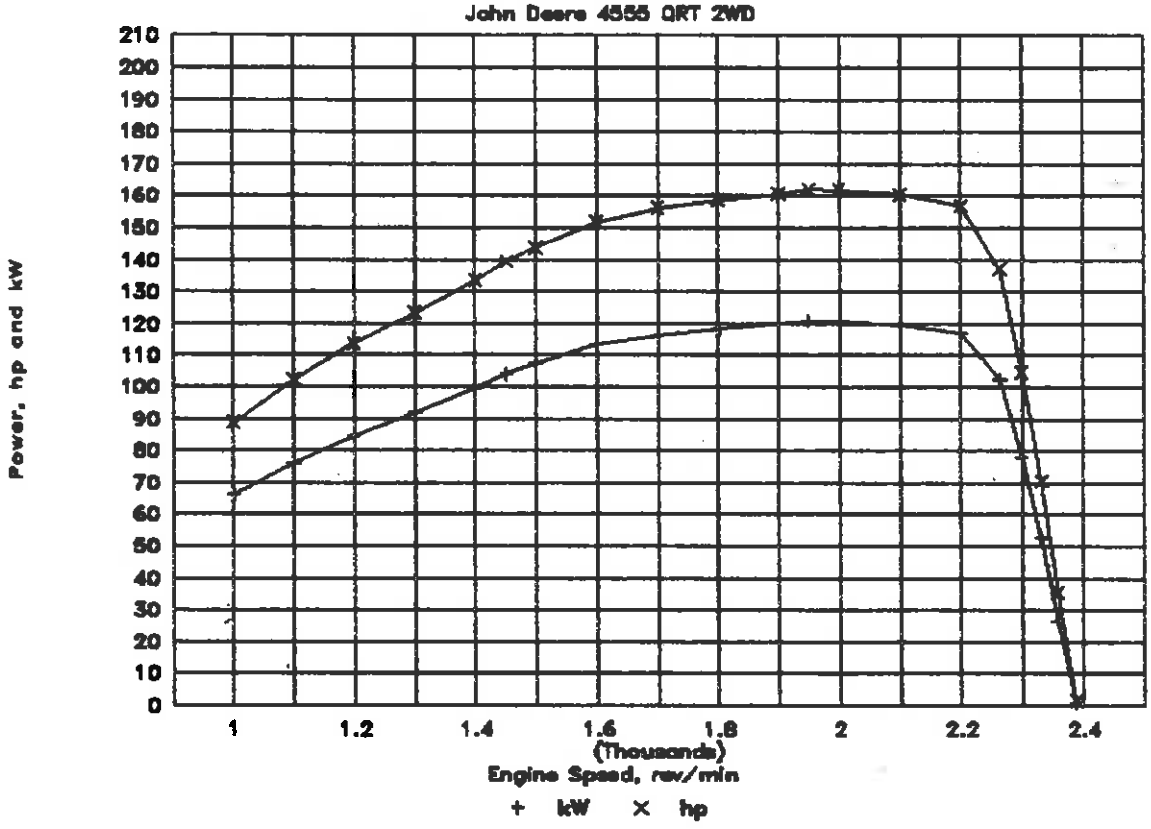
Date of tests: 21-Sep-89 22-Sep-89 Fuel density: 6.910 lb/gal
Type of track: Concrete Test # 1629

| Gear | Power | Pull | Speed | Engine Speed | Slip | SFC | | Temperature, deg F | | | | | Rel hum | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | hp | lb | mph | rpm | % | lb/hp-hr | hp-hr/gal | Fuel | Coolant | Oil | Dry | Wet | % | in Hg |
| II. Part Loads (unballasted @ 2200 rev/min) Tire pressure: 22 psi, rear 44 psi, front<br>Drawbar height: 23.5 in | | | | | | | | | | | | | | |
| II.1 in selected gear at maximum power | | | | | | | | | | | | | | |
| 8th(C2) | 143.04 | 9161 | 5.86 | 1952 | 5.27% | 0.430 | 16.07 | 120 | 187 | 219 | 69 | 63 | 67% | 28.90 |
| II.1.1 75% of pull at maximum power at rated speed | | | | | | | | | | | | | | |
| 8th 75% | 110.08 | 5914 | 6.98 | 2275 | 3.01% | 0.475 | 14.53 | 110 | 182 | 213 | 75 | 67 | 62% | 28.89 |
| II.1.2 50% of pull at maximum power at rated speed | | | | | | | | | | | | | | |
| 8th 50% | 75.39 | 3947 | 7.16 | 2311 | 2.15% | 0.542 | 12.75 | 110 | 180 | 215 | 75 | 67 | 62% | 28.89 |
| II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1 | | | | | | | | | | | | | | |
| 10th 75% | 110.17 | 5918 | 6.98 | 1782 | 3.01% | 0.442 | 15.65 | 107 | 184 | 215 | 75 | 67 | 62% | 28.89 |
| II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2 | | | | | | | | | | | | | | |
| 10th 50% | 75.17 | 3936 | 7.16 | 1811 | 2.15% | 0.483 | 14.31 | 105 | 179 | 212 | 75 | 67 | 62% | 28.89 |
| II.2 in selected gear nearest to 4.6 mph | | | | | | | | | | | | | | |
| 4th(B1) | 136.10 | 11719 | 4.36 | 2198 | 6.64% | 0.458 | 15.09 | 120 | 183 | 217 | 64 | 60 | 82% | 28.90 |
| II.2.1 75% of pull at maximum power at rated speed | | | | | | | | | | | | | | |
| 4th 75% | 108.05 | 8791 | 4.61 | 2284 | 4.94% | 0.482 | 14.34 | 112 | 184 | 216 | 72 | 65 | 68% | 28.90 |
| II.2.2 50% of pull at maximum power at rated speed | | | | | | | | | | | | | | |
| 4th 50% | 74.48 | 5859 | 4.77 | 2320 | 3.10% | 0.541 | 12.78 | 110 | 180 | 214 | 73 | 66 | 69% | 28.90 |
| II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1 | | | | | | | | | | | | | | |
| 7th 75% | 108.02 | 8789 | 4.61 | 1800 | 4.94% | 0.439 | 15.73 | 108 | 183 | 215 | 72 | 65 | 68% | 28.90 |
| II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2 | | | | | | | | | | | | | | |
| 7th 50% | 74.60 | 5860 | 4.77 | 1829 | 3.10% | 0.476 | 14.50 | 108 | 178 | 213 | 74 | 66 | 69% | 28.90 |

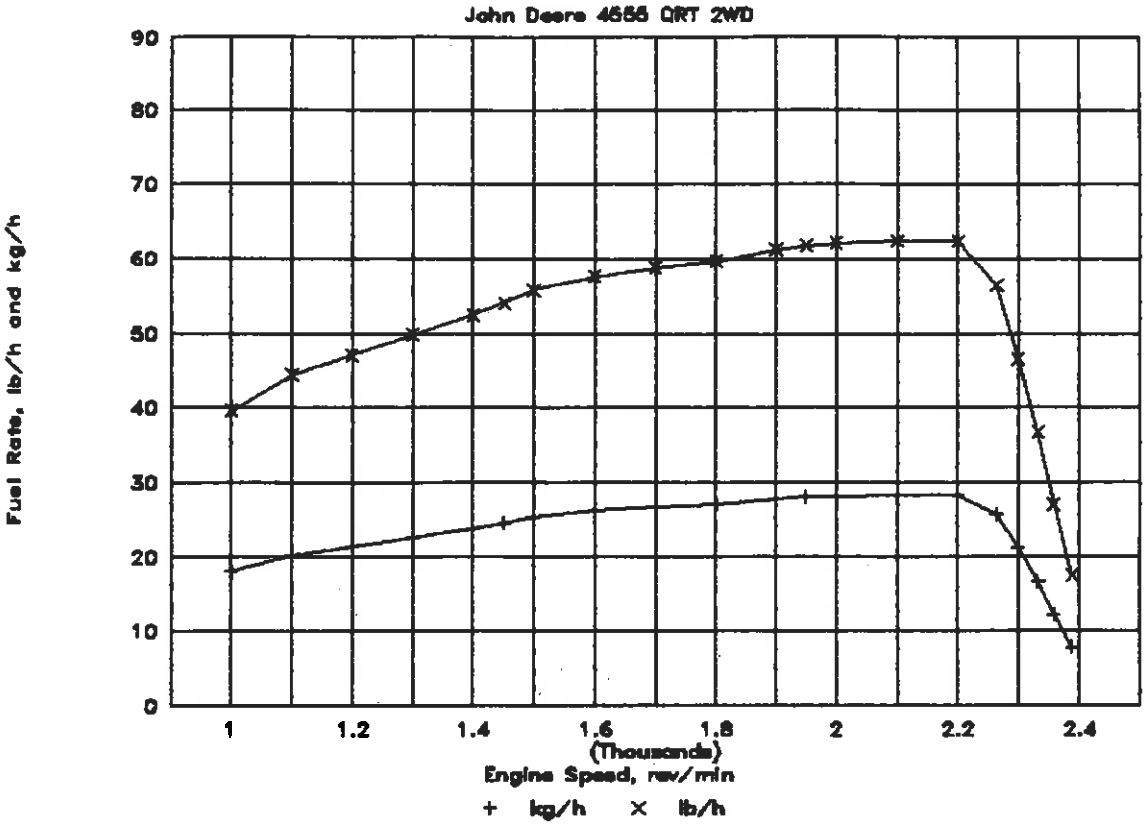
# Equivalent Crankshaft Torque



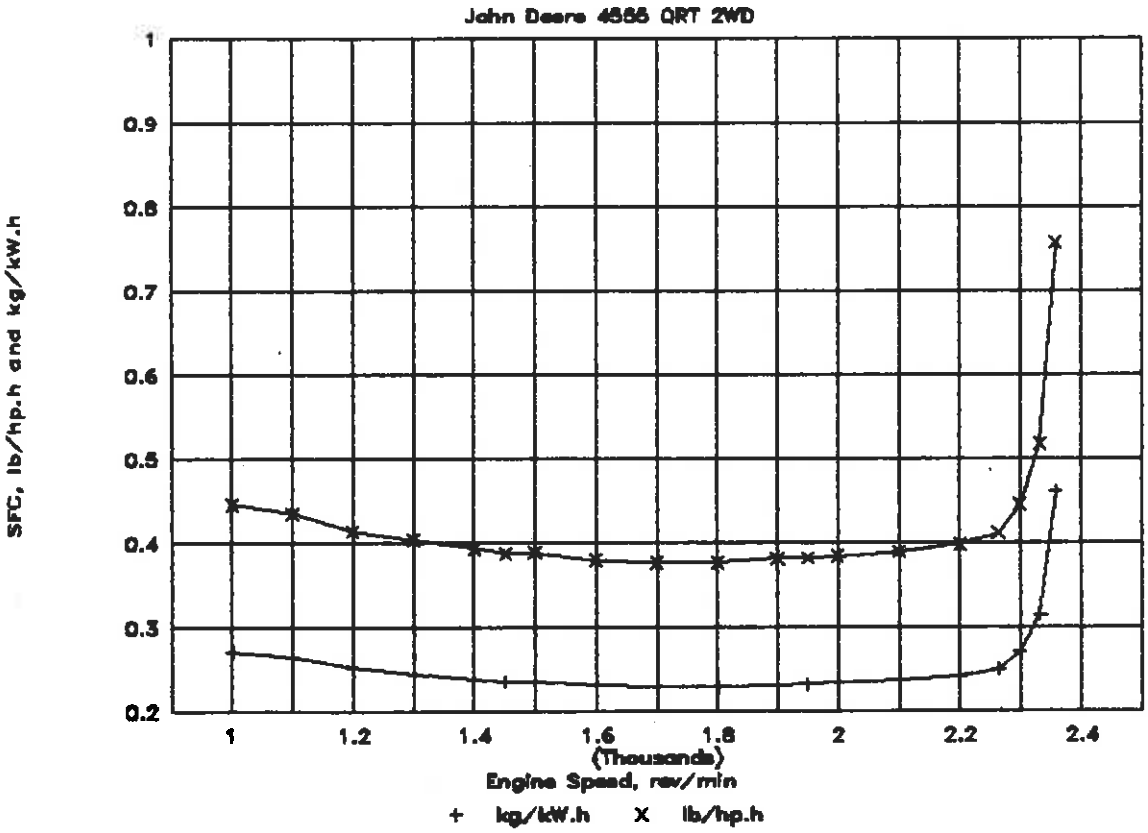

# PTO Power



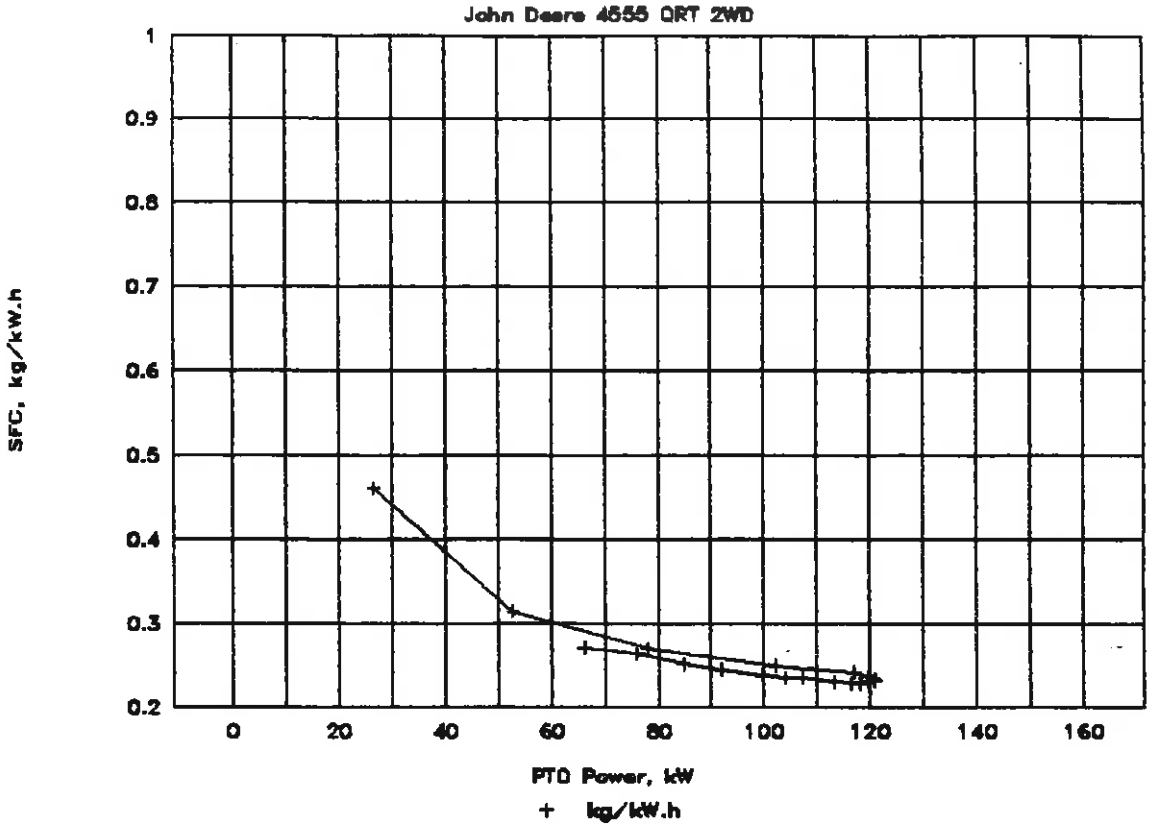
# PTO Fuel Consumption



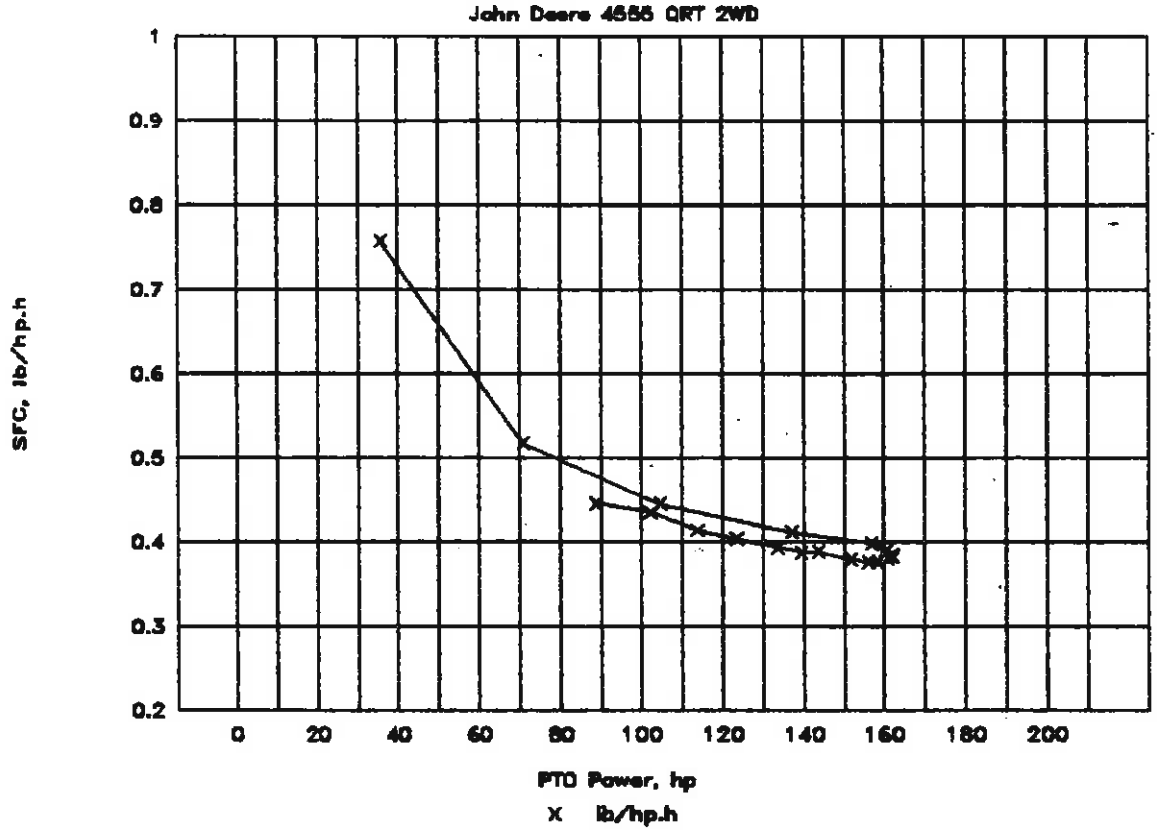

# PTO Specific Fuel Consumption



# SFC vs PTO Power




# SFC vs PTO Power



## 5 OPTIONAL TESTS.

### 5.1 MEASUREMENT OF EXTERNAL NOISE LEVEL.

| | | |
|---|---|---|
| Date of test | : | September 22, 1989 |
| Location of test | : | CAE/UNL, Lincoln, Nebr. |
| Sound level meter | : | B & K 2203 |
| Type of track | : | Concrete oval |
| Gear number | : | 16th(D4) |
| Speed prior to acceleration | : | 26.3 km/h (16.3 mph) |
| Sound level | : | 85.0 dB(A) |

## 5.2 MAXIMUM POWER AT 1950 REV/MIN (BALLASTED TRACTOR)

OECD Drawbar Data (SI)

Date of tests: 28-Sep-89 28-Sep-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1629

| Gear | Power | Pull | Speed | Engine Speed | Slip | SFC | | Temperature, deg C | | | | | Rel hum | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | kW | kN | km/h | rev/min | % | kg/kW.h | kW.h/l | Fuel | Coolant | Oil | Dry | Wet | % | kPa |
| Ib. Maximum Power (ballasted @ 1950 rev/min) Drawbar height: 610 mm | | | | | | | | Tire pressure: 110 kPa, rear (inner) 110 kPa, rear (outer) | | | 303 kPa, front | | | |
| 1st(A1) | 66.38 | 79.10 | 3.02 | 2293 | 13.70% | 0.329 | 2.52 | 46 | 82 | 102 | 13 | 10 | 69% | 98.48 |
| 2nd(A2) | 82.52 | 78.65 | 3.78 | 2269 | 14.17% | 0.310 | 2.67 | 47 | 83 | 103 | 12 | 9 | 70% | 98.48 |
| 3rd(A3) | 104.56 | 70.32 | 5.35 | 2077 | 6.59% | 0.270 | 3.06 | 46 | 85 | 105 | 16 | 12 | 63% | 98.48 |
| 4th(B1) | 106.48 | 59.79 | 6.41 | 1979 | 5.06% | 0.263 | 3.14 | 46 | 86 | 104 | 18 | 12 | 49% | 98.48 |
| 5th(A4) | 107.66 | 59.78 | 6.48 | 1951 | 5.22% | 0.259 | 3.20 | 45 | 86 | 104 | 18 | 13 | 57% | 98.48 |
| 6th(C1) | 106.16 | 50.97 | 7.50 | 1953 | 4.23% | 0.264 | 3.14 | 47 | 86 | 105 | 19 | 13 | 50% | 98.51 |
| 7th(B2) | 109.06 | 48.47 | 8.10 | 1947 | 4.06% | 0.256 | 3.23 | 46 | 86 | 104 | 19 | 13 | 50% | 98.51 |
| 8th(C2) | 108.79 | 40.74 | 9.61 | 1953 | 3.39% | 0.255 | 3.25 | 46 | 87 | 106 | 22 | 15 | 47% | 98.51 |
| 9th(B3) | 106.60 | 32.78 | 11.71 | 1949 | 2.70% | 0.261 | 3.17 | 46 | 87 | 105 | 23 | 16 | 48% | 98.44 |
| 10th(D1) | 105.85 | 30.89 | 12.34 | 1948 | 2.53% | 0.262 | 3.16 | 46 | 87 | 104 | 23 | 16 | 48% | 98.41 |
| 11th(C3) | 106.18 | 27.66 | 13.82 | 1950 | 2.27% | 0.263 | 3.14 | 46 | 87 | 104 | 23 | 16 | 48% | 98.37 |

OECD Drawbar Data (US)

Date of tests: 28-Sep-89 28-Sep-89 Fuel density: 6.910 lb/gal
Type of track: Concrete Test # 1629

| Gear | Power | Pull | Speed | Engine Speed | Slip | SFC | | Temperature, deg F | | | | | Rel hum | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | hp | lb | mph | rpm | % | lb/hp-hr | hp-hr/gal | Fuel | Coolant | Oil | Dry | Wet | % | in Hg |
| Ib. Maximum Power (ballasted @ 1950 rev/min) Drawbar height: 24 in | | | | | | | | Tire pressure: 16 psi, rear (inner) 16 psi, rear (outer) | | | 44 psi, front | | | |
| 1st(A1) | 89.02 | 17784 | 1.88 | 2293 | 13.70% | 0.541 | 12.77 | 115 | 180 | 216 | 56 | 50 | 69% | 29.08 |
| 2nd(A2) | 110.66 | 17681 | 2.35 | 2269 | 14.17% | 0.510 | 13.56 | 116 | 181 | 218 | 53 | 48 | 70% | 29.08 |
| 3rd(A3) | 140.21 | 15808 | 3.33 | 2077 | 6.59% | 0.445 | 15.54 | 115 | 185 | 221 | 60 | 53 | 63% | 29.08 |
| 4th(B1) | 142.79 | 13441 | 3.98 | 1979 | 5.06% | 0.433 | 15.95 | 116 | 187 | 220 | 64 | 54 | 49% | 29.08 |
| 5th(A4) | 144.37 | 13440 | 4.03 | 1951 | 5.22% | 0.426 | 16.23 | 114 | 187 | 220 | 65 | 55 | 57% | 29.08 |
| 6th(C1) | 142.36 | 11460 | 4.66 | 1953 | 4.23% | 0.434 | 15.93 | 116 | 187 | 221 | 66 | 55 | 50% | 29.09 |
| 7th(B2) | 146.25 | 10897 | 5.03 | 1947 | 4.06% | 0.422 | 16.39 | 115 | 188 | 219 | 67 | 56 | 50% | 29.09 |
| 8th(C2) | 145.89 | 9159 | 5.97 | 1953 | 3.39% | 0.419 | 16.48 | 115 | 188 | 223 | 71 | 59 | 47% | 29.09 |
| 9th(B3) | 142.95 | 7370 | 7.27 | 1949 | 2.70% | 0.430 | 16.07 | 115 | 189 | 221 | 73 | 60 | 48% | 29.07 |
| 10th(D1) | 141.94 | 6945 | 7.66 | 1948 | 2.53% | 0.431 | 16.05 | 115 | 189 | 220 | 74 | 61 | 48% | 29.06 |
| 11th(C3) | 142.39 | 6219 | 8.59 | 1950 | 2.27% | 0.433 | 15.96 | 114 | 189 | 219 | 74 | 61 | 48% | 29.05 |

## MAXIMUM POWER AT 2200 REV/MIN (BALLASTED TRACTOR)

### OECD Drawbar Data (SI)

Date of tests: 28-Sep-89 28-Sep-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1629

| Gear | Power | Pull | Speed | Engine Speed | Slip | SFC | | Temperature, deg C | | | | | Rel hum | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | kW | kN | km/h | rev/min | % | kg/kW.h | kW.h/l | Fuel | Coolant | Oil | Dry | Wet | % | kPa |
| Ic. Maximum Power (ballasted @ 2200 rev/min) Drawbar height: 610 mm | | | | | | | | Tire pressure: 110 kPa, rear (inner) 110 kPa, rear (outer) | | | 303 kPa, front | | | |
| 2nd(A2) | 82.39 | 79.06 | 3.75 | 2268 | 14.71% | 0.311 | 2.66 | 46 | 83 | 103 | 11 | 8 | 67% | 98.48 |
| 3rd(A3) | 103.61 | 65.11 | 5.73 | 2198 | 5.55% | 0.273 | 3.03 | 46 | 84 | 103 | 14 | 11 | 70% | 98.48 |
| 4th(B1) | 104.27 | 52.16 | 7.20 | 2202 | 4.31% | 0.270 | 3.06 | 46 | 85 | 104 | 17 | 12 | 55% | 98.48 |
| 5th(A4) | 104.94 | 51.10 | 7.39 | 2203 | 4.23% | 0.267 | 3.10 | 46 | 85 | 103 | 18 | 13 | 57% | 98.48 |
| 6th(C1) | 104.37 | 44.18 | 8.50 | 2200 | 3.56% | 0.270 | 3.06 | 46 | 85 | 104 | 18 | 13 | 57% | 98.48 |
| 7th(B2) | 105.72 | 41.33 | 9.21 | 2199 | 3.39% | 0.268 | 3.09 | 46 | 86 | 104 | 20 | 13 | 44% | 98.51 |
| 8th(C2) | 105.49 | 34.91 | 10.88 | 2198 | 2.79% | 0.267 | 3.10 | 46 | 86 | 104 | 21 | 14 | 46% | 98.51 |
| 9th(B3) | 103.29 | 28.06 | 13.25 | 2198 | 2.18% | 0.273 | 3.03 | 46 | 86 | 104 | 22 | 16 | 54% | 98.48 |

### OECD Drawbar Data (US)

Date of tests: 28-Sep-89 28-Sep-89 Fuel density: 6.910 lb/gal
Type of track: Concrete Test # 1629

| Gear | Power | Pull | Speed | Engine Speed | Slip | SFC | | Temperature, deg F | | | | | Rel hum | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | hp | lb | mph | rpm | % | lb/hp-hr | hp-hr/gal | Fuel | Coolant | Oil | Dry | Wet | % | in Hg |
| Ic. Maximum Power (ballasted @ 2200 rev/min) Drawbar height: 24 in | | | | | | | | Tire pressure: 16 psi, rear (inner) 16 psi, rear (outer) | | | 44 psi, front | | | |
| 2nd(A2) | 110.49 | 17774 | 2.33 | 2268 | 14.71% | 0.511 | 13.51 | 115 | 181 | 217 | 51 | 47 | 67% | 29.0 |
| 3rd(A3) | 138.94 | 14637 | 3.56 | 2198 | 5.55% | 0.449 | 15.39 | 115 | 184 | 218 | 58 | 51 | 70% | 29.08 |
| 4th(B1) | 139.83 | 11725 | 4.47 | 2202 | 4.31% | 0.444 | 15.56 | 115 | 186 | 219 | 63 | 54 | 55% | 29.08 |
| 5th(A4) | 140.72 | 11488 | 4.59 | 2203 | 4.23% | 0.440 | 15.72 | 115 | 185 | 218 | 64 | 55 | 57% | 29.08 |
| 6th(C1) | 139.96 | 9932 | 5.28 | 2200 | 3.56% | 0.445 | 15.54 | 114 | 186 | 220 | 65 | 55 | 57% | 29.08 |
| 7th(B2) | 141.77 | 9291 | 5.72 | 2199 | 3.39% | 0.441 | 15.66 | 114 | 186 | 220 | 68 | 56 | 44% | 29.09 |
| 8th(C2) | 141.47 | 7848 | 6.76 | 2198 | 2.79% | 0.439 | 15.74 | 115 | 186 | 220 | 70 | 58 | 46% | 29.09 |
| 9th(B3) | 138.52 | 6309 | 8.23 | 2198 | 2.18% | 0.449 | 15.40 | 114 | 187 | 220 | 72 | 60 | 54% | 29.08 |

Repairs: None
Remarks: None