January 2004

Test 1837A: New Holland TC 55DA Diesel

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NEBRASKA TRACTOR TEST 1837A
NEW HOLLAND TC 55DA DIESEL
12 SPEED

Location of Test: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832
Dates of Test: April 29-30, 2004
Manufacturer: CNH America LLC, 700 State Street, Racine, Wi. 53404

FUEL, OIL and TIME: Fuel
No. 2 Diesel
Specific gravity converted to 60°/60° F (15°/15°C)
0.8432
Fuel weight
7.021 lbs/gal (0.841 kg/l)

Oil
SAE 15W40
API service classification CF-4/SG

Transmission and hydraulic lubricant
New Holland M2C134D fluid
Front axle lubricant
New Holland M2C134D fluid

Total time engine was operated
11.0 hours

ENGINE: Make ISM Diesel Type four cylinder vertical with turbocharger Serial No. 27999
Crankshaft lengthwise Rated engine speed
2700 rpm
Bore and stroke 3.307” x 3.937” (84.0 mm x 100.0 mm)
Compression ratio 22.4 to 1
Displacement
135 cu in (2216 ml)
Starting system
12 volt
Lubrication
pressure
Air cleaner
two paper elements
Oil filter
one full flow cartridge
Oil cooler
engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil
Fuel filter
one paper element
Muffler
underhood
Exhaust
horizontal

ENGINE OPERATING PARAMETERS: Fuel rate:
25.5 - 28.0 lb/h (11.6 - 12.7 kg/h)
High idle:
2850 - 2950 rpm
Turbo boost:
nominal 8.0 - 10.1 psi (55 - 70 kPa)
as measured 9.4 psi (65 kPa)

CHASSIS: Type front wheel assist Serial No. HX10016
Tread width
rear 52.8” (1341 mm)
to 76.3” (1939 mm)
front 56.4” (1432 mm)
Wheelbase
74.8” (1900 mm)
Hydraulic control system direct engine drive
Transmission selective gear fixed ratio
Nominal travel speeds mph (km/h)
fifth 3.98
sixth 4.61
eighth 5.21

Clutch single dry disc operated by foot pedal
Brakes single wet disc operated by two foot pedals which can be locked together
Steering hydrostatic

POWER TAKE-OFF PERFORMANCE

<table>
<thead>
<tr>
<th>Power HP (kW)</th>
<th>Crankshaft speed rpm</th>
<th>Gal/hr</th>
<th>lb/gal/hr</th>
<th>Hp.hr/gal</th>
<th>Mean Atmospheric Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.01 (35.80)</td>
<td>2700</td>
<td>3.95</td>
<td>0.577</td>
<td>12.17</td>
<td>75°F (24°C)</td>
</tr>
<tr>
<td>47.80 (35.65)</td>
<td>2475</td>
<td>3.06</td>
<td>0.558</td>
<td>13.05</td>
<td>4%</td>
</tr>
</tbody>
</table>

VARYING POWER AND FUEL CONSUMPTION

<table>
<thead>
<tr>
<th>Power</th>
<th>Crankshaft speed rpm</th>
<th>Gal/hr</th>
<th>lb/gal/hr</th>
<th>Hp.hr/gal</th>
<th>Mean Atmospheric Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.01</td>
<td>2700</td>
<td>3.95</td>
<td>0.577</td>
<td>12.17</td>
<td>Air temperature</td>
</tr>
<tr>
<td>42.46</td>
<td>2801</td>
<td>3.50</td>
<td>0.579</td>
<td>12.12</td>
<td>75°F (24°C)</td>
</tr>
<tr>
<td>32.17</td>
<td>2841</td>
<td>2.82</td>
<td>0.616</td>
<td>11.41</td>
<td>Relative humidity</td>
</tr>
<tr>
<td>21.75</td>
<td>2871</td>
<td>2.26</td>
<td>0.731</td>
<td>9.61</td>
<td>34%</td>
</tr>
<tr>
<td>10.88</td>
<td>2913</td>
<td>1.75</td>
<td>1.130</td>
<td>6.21</td>
<td>Barometer</td>
</tr>
<tr>
<td>0.61</td>
<td>2938</td>
<td>1.37</td>
<td>15.732</td>
<td>0.45</td>
<td>28.8°F (87.66 kPa)</td>
</tr>
</tbody>
</table>

Maximum Torque: 122 lb-ft. (165 Nm) at 1657 rpm
Maximum Torque Rise: 30.6%
Torque rise at 2203 rpm: 20%

TRACTOR SOUND LEVEL WITHOUT CAB

<table>
<thead>
<tr>
<th>Gear</th>
<th>Disengaged</th>
<th>Engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>89.0</td>
<td>89.0</td>
<td></td>
</tr>
<tr>
<td>--</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

TIRES AND WEIGHT

<table>
<thead>
<tr>
<th>Test</th>
<th>Rear Tires–No., size, ply &amp; psi (kPa)</th>
<th>Front Tires–No., size, ply &amp; psi (kPa)</th>
<th>Height of Drawbar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rear: 18.4-24; 8:12 (85)</td>
<td>Front: 12-16.5; 8:12 (85)</td>
<td>17.0 in (435 mm)</td>
</tr>
<tr>
<td></td>
<td>3035 lb (1377 kg)</td>
<td>1825 lb (823 kg)</td>
<td>4860 lb (2205 kg)</td>
</tr>
</tbody>
</table>

Tested Without Ballast

| Two 18.4-24; 8:12 (85) |
| 3035 lb (1377 kg) |
| 1825 lb (823 kg) |
| 4860 lb (2205 kg) |

Unladen tractor mass
4685 lb (2125 kg)
THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: I, II
Quick Attach: None
Maximum Force Exerted Through Whole Range: 2776 lbs (12.3 kN) Category I
2430 lbs (10.8 kN) Category II

i) Opening pressure of relief valve: NA

ii) Pump delivery rate at minimum pressure
and rated engine speed: 10.9 GPM (41.3 l/min)

iii) Pump delivery rate at maximum hydraulic power: 10.7 GPM (40.5 l/min)

Delivery pressure: 1965 psi (135 bar)
Power: 12.3 HP (9.1 kW)

THREE POINT HITCH PERFORMANCE

<table>
<thead>
<tr>
<th>Category</th>
<th>Observed Maximum Pressure psi/ (bar)</th>
<th>Location</th>
<th>Hydraulic Oil Temperature °F/°C</th>
<th>Location</th>
<th>Quick Attach</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>2565/177</td>
<td>Lift Cylinder</td>
<td>178/81</td>
<td>Hydraulic Sump</td>
<td>None</td>
</tr>
<tr>
<td>II</td>
<td>2550/176</td>
<td>Lift Cylinder</td>
<td>178/81</td>
<td>Hydraulic Sump</td>
<td>None</td>
</tr>
</tbody>
</table>

SAE Static Test—System pressure 2320 psi (160 Bar)

<table>
<thead>
<tr>
<th>Category</th>
<th>Hitch Point Distance to Ground Level (in/mm)</th>
<th>Lift Force on Frame lb/ (kN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>8.1/203 14.0/356 20.1/511 25.9/658 32.1/815</td>
<td>(17.0) (16.2) (15.3) (14.1) (12.4)</td>
</tr>
<tr>
<td>II</td>
<td>8.0/203 14.0/356 20.1/511 25.9/658 32.1/815</td>
<td>(17.0) (16.2) (15.3) (14.1) (12.4)</td>
</tr>
</tbody>
</table>

REPAIRS AND ADJUSTMENTS: The fuel tank was found to be leaking following the PTO tests.

NOTE: The performance results on this report were obtained from tests carried out on the Case IH DX 55 Diesel.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. This tractor did not meet the manufacturer’s claims of 3465 lb (1571 kg) 3 point hitch lift at 24” nor 11.6 GPM (43.9 lpm) hydraulic flow. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 104°F (40°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1837A, November 1, 2004

Leonard L. Bashford
Director

M.F. Kocher
V.I. Adamchuk
W.P. Campbell
Board of Tractor Test Engineers

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director

New Holland TC55DA Diesel