### Nebraska Tractor Test 1769
#### White 6410 Diesel

**12 Speed**

**Location of Test:** Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

**Dates of Test:** March 16-17, 2000

**Manufacturer:** AGCO Corporation, Duluth Georgia 30096

**Fuel, Oil and Time:** Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.8487 Fuel weight 7.067 lbs/gal (0.847 kg/l) Oil SAE 15W40 API service classification CE/CF-4 Transmission and hydraulic lubricant AGCO Power Fluid 821 XL fluid Total time engine was operated 10.0 hours

**Engine:**
- Make: Cummins Diesel
- Type: four cylinder vertical with turbocharger
- Serial No.: 21299443
- Crankshaft lengthwise Rated engine speed 2200
- Bore and stroke: 4.016” x 4.724” (102.0 mm x 120.0 mm)
- Compression ratio: 17.0 to 1
- Displacement: 239 cu in (3920 ml)
- Starting system: 12 volt
- Lubrication: Pressure
- Air cleaner: one paper element and one polyester felt element
- Oil filter: one full flow cartridge
- Oil cooler: engine coolant heat exchanger for crankcase oil
- Fuel filter: one paper element and water separator
- Muffler: underhood
- Exhaust: vertical
- Cooling medium: temperature control
- One thermostat

**Chassis:**
- Type: standard
- Serial No.: G08191
- Tread width: rear 56.1” to 83.9” (1425 mm to 2130 mm) front 54.0” to 78.0” (1372 mm to 1981 mm)
- Wheelbase: 96.0” (2438 mm)
- Hydraulic control system: direct engine drive
- Transmission: selective gear fixed ratio
- Nominal travel speeds mph (km/h):
  - First: 1.44 (2.32)
  - Second: 1.73 (2.79)
  - Third: 2.16 (3.48)
  - Fourth: 2.58 (4.16)
  - Fifth: 3.96 (6.38)
  - Sixth: 4.77 (7.68)
  - Seventh: 5.90 (9.49)
  - Eighth: 7.10 (11.42)
  - Ninth: 8.85 (14.24)
  - Tenth: 10.64 (17.13)
  - Eleventh: 16.22 (26.10)
  - Twelfth: 19.51 (31.40)
  - Reverse: 2.16 (3.48), 2.60 (4.19), 8.85 (14.24), 10.64 (17.13)

**Power Take-off Performance**

<table>
<thead>
<tr>
<th>Power (HP)</th>
<th>Crankshaft speed (RPM)</th>
<th>Gal/hr (l/h)</th>
<th>lb/hr (kg/h)</th>
<th>Hp/hr (W/h)</th>
<th>Mean Atmospheric Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>70.40 (52.50)</td>
<td>2200</td>
<td>4.87</td>
<td>0.489</td>
<td>14.46</td>
<td>(14.8 - 16.4 kg/h)</td>
</tr>
<tr>
<td>74.89 (55.85)</td>
<td>2000</td>
<td>4.76</td>
<td>0.449</td>
<td>15.74</td>
<td>(21.8 psi (150 kPa))</td>
</tr>
<tr>
<td>75.25 (56.10)</td>
<td>1901</td>
<td>4.63</td>
<td>0.435</td>
<td>16.24</td>
<td>(3.20)</td>
</tr>
</tbody>
</table>

**Varying Power and Fuel Consumption**

<table>
<thead>
<tr>
<th>Power (HP)</th>
<th>Crankshaft speed (RPM)</th>
<th>Gal/hr (l/h)</th>
<th>lb/hr (kg/h)</th>
<th>Hp/hr (W/h)</th>
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<tbody>
<tr>
<td>70.40 (52.50)</td>
<td>2200</td>
<td>4.87</td>
<td>0.489</td>
<td>14.46</td>
<td>Air temperature</td>
</tr>
<tr>
<td>60.94 (45.44)</td>
<td>2247</td>
<td>4.37</td>
<td>0.507</td>
<td>13.94</td>
<td>76°F (24°C)</td>
</tr>
<tr>
<td>46.14 (34.41)</td>
<td>2278</td>
<td>3.74</td>
<td>0.572</td>
<td>12.35</td>
<td>Relative humidity</td>
</tr>
<tr>
<td>31.39 (23.41)</td>
<td>2310</td>
<td>3.01</td>
<td>0.679</td>
<td>10.42</td>
<td>29%</td>
</tr>
<tr>
<td>15.91 (11.86)</td>
<td>2346</td>
<td>2.38</td>
<td>1.056</td>
<td>6.69</td>
<td>Barometer</td>
</tr>
<tr>
<td>1.13 (0.84)</td>
<td>2377</td>
<td>1.74</td>
<td>10.876</td>
<td>0.65</td>
<td>29.12&quot;Hg (98.62kPa)</td>
</tr>
</tbody>
</table>

**Tractor Sound Level with Cab**

<table>
<thead>
<tr>
<th>Speed (RPM)</th>
<th>Power (HP)</th>
<th>dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>70.40</td>
<td>82.3</td>
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**Engine Operating Parameters:**
- Fuel rate: 32.7 - 36.1 lb/h (14.8 - 16.4 kg/h)
- High idle: 2350 - 2450 rpm
- Turbo boost: nominal 20.0 - 23.5 psi (138 - 162 kPa)

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**Tires and Weight**

<table>
<thead>
<tr>
<th>Tires</th>
<th>No., size, ply &amp; psi (kPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear</td>
<td>Two 18.4R34;**; 16 (110)</td>
</tr>
<tr>
<td>Front</td>
<td>Two 10.00-16; 8; 32 (220)</td>
</tr>
<tr>
<td>Height of Drawbar</td>
<td>17.0 in (430 mm)</td>
</tr>
<tr>
<td>Static Weight with operator</td>
<td>5085 lb (2307 kg)</td>
</tr>
<tr>
<td>Tested Without Ballast</td>
<td>3065 lb (1390 kg)</td>
</tr>
<tr>
<td>Unladen tractor mass</td>
<td>7975 lb (3617 kg)</td>
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THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II
Quick Attach: None                    High lift Option
i) Opening pressure of relief valve: NA                    Combined flow
Maximum Force Exerted Through Whole Range: 3348 lbs (14.9 kN)
Sustained pressure of the open relief valve: 3010 psi (207 bar)
ii) Pump delivery rate at minimum pressure
and rated engine speed:
    10.6 GPM (40.1 l/min)
 iii) Pump delivery rate at maximum hydraulic power:
     7.6 GPM (28.8 l/min)
Delivery pressure: 2870 psi (198 bar)
Power: 12.7 HP (9.5 kW)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump was maintained at 141°F (61°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1769, March 29, 2000.

David L. Morgan
Assistant Director

L. L. Bashford
M. F. Kocher
R. D. Grisso Jr.
Board of Tractor Test Engineers

SAE Static Test System pressure 2990 psi (206 Bar)
Hitch point distance to ground level in. (mm) 9.4 (239) 14.9 (378) 21.9 (556) 28.9 (734) 37.4 (950)
Lift force on frame lb (kN) 4113 (18.3) 4500 (20.0) 4631 (20.6) 4613 (20.5) 4743 (21.1)

High lift Option
SAE Static Test System pressure 2990 psi (206 Bar)
Hitch point distance to ground level in. (mm) 7.7 (196) 14.7 (373) 21.7 (551) 28.7 (729) 35.7 (907)
Lift force on frame lb (kN) 6894 (30.2) 7421 (33.0) 7565 (33.7) 7488 (33.3) 7425 (33.0)

HITCH DIMENSIONS AS TESTED - NO LOAD

White 6410 Diesel

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