NEBRASKA TRACTOR TEST 1754
JOHN DEERE 5210 DIESEL
9 SPEED

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832
Dates of tests: October 12-19, 1998
Manufacturer: John Deere Commercial Products Inc., 700 Horizon South Parkway, Grovetown, Ga. USA, 30813

FUEL, OIL AND TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8506 Fuel weight 7.082 lbs/gal (0.849 kg/l)
Oil SAE 10W30 API service classification CE/CF-4 Transmission and hydraulic lubricant John Deere Hy-Gard Fluid
Front axle lubricant SAE 80W90 API GL-5
Total time engine was operated 14.5 hours

ENGINE: Make John Deere Diesel Type three cylinder vertical
Serial No. *PE 3029D 00742*
Crankshaft lengthwise
Rated engine speed 2400 rpm
Bore and stroke 4.19” x 4.33” (106.4 mm x 110.0 mm)
Compression ratio 17.4 to 1
Displacement 179 cu in (2934 ml)
Starting system 12 volt
Lubrication pressure
Air cleaner one paper 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 a sediment bowl
Muffler underhood
Exhaust vertical
Cooling medium one thermostat

POWER TAKE-OFF PERFORMANCE

<table>
<thead>
<tr>
<th>Power (HP)</th>
<th>Crankshaft speed rpm</th>
<th>Gal/hr</th>
<th>Bhp/hr</th>
<th>Hp.hr/gal</th>
<th>Mean Atmospheric Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>46.16 (34.42)</td>
<td>2400 (10.76)</td>
<td>2.84 (0.25)</td>
<td>16.24 (3.20)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MAXIMUM POWER AND FUEL CONSUMPTION

<table>
<thead>
<tr>
<th>Varying Power and Fuel Consumption</th>
<th>Rated Engine Speed (PTO speed—545 rpm)</th>
<th>Air Temperature</th>
<th>Relative Humidity</th>
<th>Barometer</th>
</tr>
</thead>
<tbody>
<tr>
<td>46.16 (34.42)</td>
<td>2400 (10.76)</td>
<td>2.91 (0.25)</td>
<td>16.24 (3.20)</td>
<td>41.00 (10.76)</td>
</tr>
<tr>
<td>31.19 (23.26)</td>
<td>2537 (8.18)</td>
<td>2.16 (0.298)</td>
<td>14.44 (2.84)</td>
<td>48%</td>
</tr>
<tr>
<td>20.79 (15.50)</td>
<td>2559 (6.41)</td>
<td>1.69 (0.351)</td>
<td>12.27 (2.42)</td>
<td>41.00 (10.76)</td>
</tr>
<tr>
<td>10.47 (7.80)</td>
<td>2599 (3.21)</td>
<td>0.85 (14.742)</td>
<td>0.29 (0.06)</td>
<td>29.08°Hg (98.48 kPa)</td>
</tr>
</tbody>
</table>

Maximum Torque - 130 lb.-ft. (177 Nm) at 1350 rpm
Maximum Torque Rise - 28.9%
Torque rise at 1902 engine rpm - 15%

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ENGINE OPERATING PARAMETERS: Fuel rate: 19.5 - 21.6 lb/h (8.8 - 9.8 kg/h)
High idle: 2550 - 2600 rpm

CHASSIS: Type: front wheel assist
Serial No. *LV5210S-122877*
Tread width rear 53.8” (1366 mm) to 69.7” (1770 mm) front 51.7” (1313 mm) to 75.9” (1927 mm)
Wheelbase 80.7” (2050 mm)
Hydraulic control system direct engine drive
Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.27 (2.05) second 1.84 (2.96) third 2.50 (4.03) fourth 3.01 (4.84) fifth 4.34 (6.98) sixth 5.92 (9.52) seventh 8.25 (13.28) eighth 11.92 (19.18) ninth 16.25 (26.15) reverse 2.14 (3.44), 5.05 (8.13), 13.87 (22.32)
Clutch single dry disc operated by foot pedal
Brakes single wet disc hydraulically operated by two foot pedals which can be locked together
Steering hydrostatic
Power take-off 540 rpm at 2376 engine rpm

UNLADEN TRACTOR MASS

<table>
<thead>
<tr>
<th>Tractor Sound Level without Cab</th>
<th>Front Wheel Drive Engaged dB(A)</th>
<th>Disengaged dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At no load in 5th (B2) gear</td>
<td>89.4</td>
<td>89.6</td>
</tr>
<tr>
<td>Bystander in 9th (C3) gear</td>
<td></td>
<td>83.3</td>
</tr>
</tbody>
</table>

TIRES AND WEIGHT

<table>
<thead>
<tr>
<th>Tires and Weight</th>
<th>Tested Without Ballast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear Tires—No., size, ply &amp; psi (kPa)</td>
<td>Two 16.9-28;6;12 (85)</td>
</tr>
<tr>
<td>Front Tires—No., size, ply &amp; psi (kPa)</td>
<td>Two 9.5-24;6;12 (85)</td>
</tr>
<tr>
<td>Height of Drawbar</td>
<td>17.0 in (430 mm)</td>
</tr>
<tr>
<td>Static Weight with operator—Rear</td>
<td>3165 lb (1436 kg)</td>
</tr>
<tr>
<td>= Front</td>
<td>2070 lb (939 kg)</td>
</tr>
<tr>
<td>= Total</td>
<td>5235 lb (2373 kg)</td>
</tr>
</tbody>
</table>

UNLADEN TRACTOR MASS 5070 lb (2300 kg)
THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II
Quick Attach: None
Maximum Force Exerted Through Whole Range: 2905 lbs (12.9 kN)

i) Opening pressure of relief valve: NA
Sustained pressure of the open relief valve: 2930 psi (202 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed:
   Delivery pressure: 2600 psi (179 bar)
   Power: 15.9 HP (11.9 kW)

iii) Pump delivery rate at maximum hydraulic power:
   Delivery pressure: 2600 psi (179 bar)
   Power: 15.9 HP (11.9 kW)

THREE POINT HITCH PERFORMANCE

<table>
<thead>
<tr>
<th>Observed Maximum Pressure psi (bar)</th>
<th>2830 (195)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>remote outlet</td>
</tr>
<tr>
<td>Hydraulic oil temperature: °F (°C)</td>
<td>170 (77)</td>
</tr>
<tr>
<td>Category:</td>
<td>II</td>
</tr>
<tr>
<td>Quick attach:</td>
<td>none</td>
</tr>
</tbody>
</table>

ASAE Static Test—System pressure 2750 psi (190 Bar)

| Hitch point distance to ground level in (mm) | 8.0 (203) | 15.0 (381) | 22.0 (559) | 29.0 (737) | 36.0 (914) |
| Lift force on frame lb (kN) | 4686 | 4713 | 4025 | 4178 | 3619 |

SAE Static Test—System pressure 2550 psi (176 Bar)

| Hitch point distance to ground level in (mm) | 8.0 (203) | 15.0 (381) | 22.0 (559) | 29.0 (737) | 36.0 (914) |
| Lift force on frame lb (kN) | 4345 | 4370 | 4299 | 3874 | 3356 |

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 130°F (54°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1754, October 28, 1998.

Leonard L. Bashford
Director

M.F. Kocher
R.D. Grisso Jr.
G.J. Hofman
Board of Tractor Test Engineers

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

HITCH DIMENSIONS AS TESTED - NO LOAD