NEBRASKA TRACTOR TEST 1770
JOHN DEERE 5105 DIESEL
8 SPEED

Location of Test: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832
Dates of Test: May 2 - 17, 2000
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)
0.8487
Fuel weight 7.067 lbs/gal (0.847 kg/l)
Oil
SAE 15W40
API service classification CG-4
Transmission and hydraulic lubricant
John Deere Hy-Gard Fluid
Front axle lubricant
SAE 80W90 API GL-5
Total time engine was operated 11.5 hours

ENGINE: Make
John Deere Diesel
Type
three cylinder vertical
Serial No.*PE3029D072454*
Crankshaft lengthwise
Rated engine speed 2300
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 element and one polyester felt element
Oil filter one full flow cartridge
Fuel filter one paper element
Muffler underhood
Exhaust vertical
Cooling medium temperature control one thermostat

ENGINE OPERATING PARAMETERS: Fuel rate: 15.8 - 17.8 lb/h (7.2 - 8.1 kg/h) High idle: 2475 - 2525 rpm

CHASSIS: Type front wheel assist
Serial No.*LV5105B110157*
Tread width rear 55.8" to 71.7" (1417 mm to 1820 mm) front 52.8" to 75.0" (1340 mm to 1904 mm)
Wheelbase 76.8" (1950 mm)
Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.94 (3.13) second 2.78 (4.48) third 3.93 (6.33) fourth 5.51 (8.87) fifth 6.44 (10.36) sixth 9.72 (15.64) seventh 13.74 (22.11) eighth 19.26 (31.00) reverse 2.32 (3.74), 3.52 (5.64), 4.70 (7.56), 6.58 (10.59) Clutch single dry disc operated by foot pedal Brakes single wet disc mechanically operated by two foot pedals which can be locked together Steering hydrostatic
Power take-off 540 rpm at 2199 engine rpm
Unladen tractor mass 4500 lb (2041 kg)
THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II
Quick Attach: None
Maximum Force Exerted Through Whole Range: 3173 lbs (14.1 kN)

i) Opening pressure of relief valve: NA
   Sustained pressure of the open relief valve: 2820 psi (194 bar)
   and rated engine speed:
   Pump delivery rate at minimum pressure:
   hydraulic power:
   Delivery pressure: 2500 psi (172 bar)
   Power: 13.9 HP (10.4 kW)

ii) Pump delivery rate at maximum hydraulic power:

iii) Pump delivery rate at minimum pressure and rated engine speed:

Observed Maximum Pressure psi. (bar)
Location: hydraulic service port
Hydraulic oil temperature: o F (o C)
Location: hydraulic sump
Category: II
Quick Attach: none

REPAIRS AND ADJUSTMENTS: The hydraulic relief valve was replaced.

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 inlet was maintained at 122 o F (50°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1770, July 7, 2000.

Leonard L. Bashford
Director

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

HITCH DIMENSIONS AS TESTED - NO LOAD

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