

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

---

2009

## Test 1961: John Deere 5095M Diesel

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

---

Nebraska Tractor Test Lab, "Test 1961: John Deere 5095M Diesel" (2009). *Nebraska Tractor Tests*. 2338. <https://digitalcommons.unl.edu/tractormuseumlit/2338>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# NEBRASKA TRACTOR TEST 1961

## JOHN DEERE 5095M DIESEL

### 16 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—566 rpm)					
80.34 (59.91)	2200	5.19 (19.63)	0.454 (0.276)	15.49 (3.05)	
Standard Power Take-off Speed(540 rpm)					
83.03 (61.91)	2100	5.11 (19.33)	0.433 (0.263)	16.26 (3.20)	
Maximum Power(1 hour)					
84.42 (62.95)	1950	4.97 (18.81)	0.414 (0.252)	16.99 (3.35)	

#### VARYING POWER AND FUEL CONSUMPTION

80.34 (59.91)	2200	5.19 (19.63)	0.454 (0.276)	15.49 (3.05)	Air temperature
71.19 (53.09)	2292	4.92 (18.64)	0.487 (0.296)	14.46 (2.85)	75°F (24°C)
54.05 (40.31)	2321	4.19 (15.84)	0.545 (0.331)	12.92 (2.54)	Relative humidity
36.43 (27.16)	2346	3.17 (11.99)	0.612 (0.372)	11.50 (2.26)	35%
18.41 (13.72)	2371	2.28 (8.64)	0.873 (0.531)	8.06 (1.59)	Barometer
0.61 (0.46)	2391	1.42 (5.38)	16.353 (9.947)	0.43 (0.08)	28.64"Hg (96.99 kPa)

Maximum torque - 250 lb.-ft. (339 Nm) at 1549 rpm  
Maximum torque rise - 30.4%  
Torque rise at 1800 rpm - 22%  
Power increase at 1950 rpm - 5%

#### TRACTOR SOUND LEVEL WITH CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 7th(B3) gear	78.7	78.7
Transport in 16th (D4) gear		78.0
Bystander in 16th (D4) gear		83.2

#### TIRES AND WEIGHT

Rear tires—No., size, ply & psi (kPa)  
Front tires—No., size, ply & psi (kPa)  
Height of drawbar  
Static weight with operator—Rear  
— Front  
— Total

#### Tested without ballast

Two 18.4R30; \*\*, 12 (85)  
Two 12.4R24; \*\*\*, 12 (85)  
16.0 in (405 mm)  
5305 lb (2406 kg)  
3110 lb (1411 kg)  
8415 lb (3817 kg)

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

**Dates of tests:** October 5 - 13, 2009

**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) 0.8450 Fuel weight 7.036 lbs/gal (0.843 kg/l) Oil SAE 15W40 API service classification CJ-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 four cylinder vertical with turbocharger and air to air intercooler Serial No. \*PE4045L078801\* Crankshaft lengthwise Rated engine speed 2200 Bore and stroke 4.19" x 5.00" (106.5 mm x 127.0 mm) Compression ratio 19.0 to 1 Displacement 276 cu in (4525 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator 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 Fuel cooler radiator for return fuel Muffler underhood Exhaust vertical Cooling medium temperature control one thermostat and variable speed fan

**ENGINE OPERATING PARAMETERS:** Fuel rate: 36.0 - 39.6 lb/h (16.3 - 18.0 kg/h) High idle: 2325 - 2425 rpm Turbo boost: nominal 10.1 - 11.6 psi (70 - 80 kPa) as measured 10.8 psi (75 kPa)

**CHASSIS:** Type front wheel assist Serial No. \*LV5095M160244\* Tread width rear 59.4" (1508 mm) to 71.4" (1813 mm) front 52.8" (1342 mm) to 77.0" (1957 mm) Wheelbase 85.7" (2178 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.19 (1.91) second 1.52 (2.44) third 1.83 (2.95) fourth 2.19 (3.53) fifth 2.86 (4.61) sixth 3.65 (5.88) seventh 4.43 (7.13) eighth 5.29 (8.52) ninth 7.02 (11.29) tenth 8.95 (14.41) eleventh 10.84 (17.44) twelfth 10.85 (17.46) thirteenth 12.97 (20.88) fourteenth 13.84 (22.27) fifteenth 16.77 (26.99) sixteenth 20.05 (32.27) reverse 1.30 (2.10), 1.67 (2.69), 2.02 (3.25), 2.42 (3.89), 3.16 (5.08), 4.03 (6.48), 4.88 (7.85), 5.83 (9.39), 7.73 (12.44), 9.87 (15.88), 11.94 (19.22), 11.96 (19.25), 14.30 (23.01), 15.25 (24.54), 18.49 (29.75), 22.10 (35.56)

## HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range: 3951 lbs (17.6 kN) (50 mm cylinders)  
4793 lbs (21.3 kN) (56 mm cylinders)

i) Sustained pressure of the open relief valve: 2943 psi (203 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 19.7 GPM (74.6 l/min)

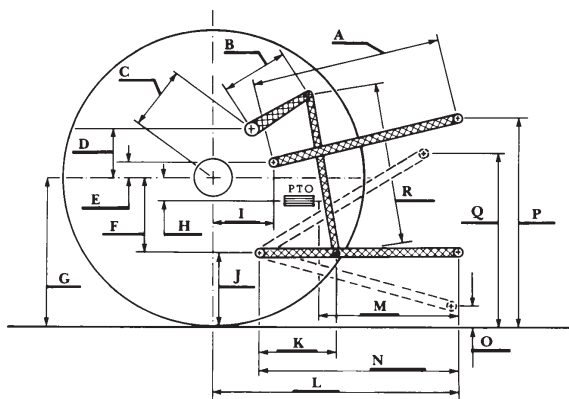
iii) Pump delivery rate at maximum hydraulic power: 19.0 GPM (71.9 l/min)

Delivery pressure: 2759 psi (190 bar)

Power: 30.6 HP (22.8 kW)

## HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	25.6	650
B	12.6	320
C	17.7	449
D	15.0	380
E	14.8	375
F	8.8	223
G	29.3	745
H	0.2	4
I	15.4	390
J	20.5	522
K	17.5	444
L	41.7	1060
M	23.0	585
N	33.1	840
O	7.8	197
P	47.5	1207
Q	33.9	861
R	28.1	715



**Clutch** wet disc hydraulically actuated by foot pedal **Brakes** wet disc hydraulically actuated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2100 engine rpm or 1000 rpm at 2103 engine rpm, Economy PTO 540 rpm at 1645 engine rpm **Unladen tractor mass** 8240 lb (3738 kg)

**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 inlet was maintained at 129°F (54°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1961**, December 18, 2009.

Roger M. Hoy  
Director

M.F. Kocher  
V.I. Adamchuk  
J.A. Smith  
Board of Tractor Test Engineers

### Economy mode

540 PTO rpm @ 1645 engine rpm

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)
43.87 (32.71)	1645	2.71 (10.26)	0.434 (0.264)	16.21 (3.19)
32.94 (24.56)	1645	2.07 (7.84)	0.442 (0.269)	15.91 (3.13)
21.98 (16.39)	1646	1.57 (5.96)	0.504 (0.307)	13.96 (2.75)
11.00 (8.20)	1649	1.09 (4.12)	0.696 (0.423)	10.11 (1.99)
0.57 (0.43)	1645	0.68 (2.56)	8.329 (5.066)	0.84 (0.17)

### Normal mode

540 PTO rpm @ 2100 engine rpm

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)
83.03 (61.91)	2100	5.11 (19.34)	0.433 (0.263)	16.26 (3.20)
32.95 (24.57)	2101	2.59 (9.79)	0.552 (0.336)	12.75 (2.51)
22.00 (16.41)	2105	2.07 (7.84)	0.662 (0.402)	10.64 (2.10)
10.98 (8.19)	2103	1.53 (5.78)	0.978 (0.595)	7.20 (1.42)
0.58 (0.43)	2099	1.09 (4.14)	13.180 (8.017)	0.53 (0.11)



**JOHN DEERE 5095M DIESEL**