

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.  
Larsen

---

2022

## Test 2260: John Deere 9R 490

Nebraska Tractor Test Lab

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](#)

---

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 OECD TRACTOR TEST 2260—SUMMARY 1223

## JOHN DEERE 9R 490 DIESEL

### 18 SPEED

#### POWER TAKE-OFF PERFORMANCE

| Power<br>HP<br>(kW)                     | Crank<br>shaft<br>speed<br>rpm | Diesel<br>Consumption |                       | D.E.F.<br>Consumption |                 | Mean Atmospheric<br>Conditions                                                         |
|-----------------------------------------|--------------------------------|-----------------------|-----------------------|-----------------------|-----------------|----------------------------------------------------------------------------------------|
|                                         |                                | Gal/hr<br>(l/h)       | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | Gal/hr<br>(l/h) |                                                                                        |
| MAXIMUM POWER AND FUEL CONSUMPTION      |                                |                       |                       |                       |                 |                                                                                        |
| SEE NOTE 1 - PAGE 2                     |                                |                       |                       |                       |                 |                                                                                        |
| Rated Engine Speed—(PTO speed—1109 rpm) |                                |                       |                       |                       |                 |                                                                                        |
| 321.89<br>(240.04)                      | 2100                           | 18.37<br>(69.53)      | 0.401<br>(0.244)      | 17.52<br>(3.45)       | 0.72<br>(2.73)  | Fuel used during active exhaust<br>regeneration-1.15 gal (4.36 l)<br>(see note 2, p.2) |
| Standard Power Take-off Speed(1000 rpm) |                                |                       |                       |                       |                 |                                                                                        |
| 363.03<br>(270.71)                      | 1895                           | 19.68<br>(74.51)      | 0.381<br>(0.232)      | 18.44<br>(3.63)       | 0.76<br>(2.89)  |                                                                                        |
| Maximum Power (1 hour)                  |                                |                       |                       |                       |                 |                                                                                        |
| 368.35<br>(274.68)                      | 1800                           | 19.75<br>(74.75)      | 0.377<br>(0.229)      | 18.66<br>(3.67)       | 0.74<br>(2.81)  |                                                                                        |

#### VARYING POWER AND FUEL CONSUMPTION

|                    |      |                  |                    |                 |                |                       |
|--------------------|------|------------------|--------------------|-----------------|----------------|-----------------------|
| 321.89<br>(240.04) | 2100 | 18.37<br>(69.53) | 0.401<br>(0.244)   | 17.52<br>(3.45) | 0.72<br>(2.73) | Air temperature       |
| 280.40<br>(209.09) | 2150 | 16.75<br>(63.42) | 0.420<br>(0.256)   | 16.74<br>(3.30) | 0.75<br>(2.85) | 73°F (23°C)           |
| 210.20<br>(156.75) | 2150 | 13.66<br>(51.69) | 0.457<br>(0.278)   | 15.39<br>(3.03) | 0.62<br>(2.35) | Relative humidity     |
| 140.03<br>(104.42) | 2150 | 11.28<br>(42.71) | 0.567<br>(0.345)   | 12.41<br>(2.45) | 0.49<br>(1.87) | 47%                   |
| 70.09<br>(52.27)   | 2150 | 8.57<br>(32.43)  | 0.860<br>(0.523)   | 8.18<br>(1.61)  | 0.30<br>(1.14) | Barometer             |
| 1.01<br>(0.76)     | 2150 | 5.77<br>(21.85)  | 40.034<br>(24.352) | 0.18<br>(0.03)  | 0.37<br>(1.41) | 28.70" Hg (97.19 kPa) |

Maximum Torque - 1171 lb.-ft. (1587 Nm) at 1499 rpm

Maximum Torque Rise - 45.4%

Torque rise at 1679 engine rpm - 42%

Power increase at 1800 engine rpm - 14.4%

#### DRAWBAR PERFORMANCE (Unballasted)

##### FUEL CONSUMPTION CHARACTERISTICS

| Power<br>Hp<br>(kW)                                                     | Drawbar<br>pull<br>lbs<br>(kN) | Speed<br>mph<br>(km/h) | Crank-<br>shaft<br>speed<br>rpm | Slip<br>% | Fuel Consumption<br>lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | D.E.F.<br>Consumption<br>lb/hp.hr<br>(kg/kW.h) | Temp. °F (°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|-------------------------------------------------------------------------|--------------------------------|------------------------|---------------------------------|-----------|-------------------------------------------|-----------------------|------------------------------------------------|--------------------------------------|--------------------|-------------------------------|
| <b>Power at Rated Engine Speed—7th Gear- Manual mode</b>                |                                |                        |                                 |           |                                           |                       |                                                |                                      |                    |                               |
| 382.11<br>(284.94)                                                      | 27824<br>(123.77)              | 5.15<br>(8.29)         | 2099                            | 2.5       | 0.426<br>(0.259)                          | 16.50<br>(3.25)       | 0.014<br>(0.009)                               | 206<br>(97)                          | 59<br>(15)         | 28.92<br>(97.93)              |
| <b>75% of Pull at Rated Engine Speed—7th Gear - Manual mode</b>         |                                |                        |                                 |           |                                           |                       |                                                |                                      |                    |                               |
| 296.96<br>(221.44)                                                      | 20844<br>(92.72)               | 5.34<br>(8.59)         | 2165                            | 1.9       | 0.450<br>(0.274)                          | 15.63<br>(3.08)       | 0.022<br>(0.013)                               | 207<br>(97)                          | 70<br>(21)         | 28.97<br>(98.10)              |
| <b>50% of Pull at Rated Engine Speed—7th Gear- Manual mode</b>          |                                |                        |                                 |           |                                           |                       |                                                |                                      |                    |                               |
| 201.21<br>(150.04)                                                      | 13907<br>(61.86)               | 5.43<br>(8.73)         | 2188                            | 1.4       | 0.504<br>(0.306)                          | 13.97<br>(2.75)       | 0.026<br>(0.016)                               | 207<br>(97)                          | 69<br>(21)         | 28.97<br>(98.10)              |
| <b>75% of Pull at Reduced Engine Speed—5.3 mph (8.6 km/h)-Auto mode</b> |                                |                        |                                 |           |                                           |                       |                                                |                                      |                    |                               |
| 296.46<br>(221.07)                                                      | 20953<br>(93.20)               | 5.31<br>(8.55)         | 1422                            | 1.9       | 0.398<br>(0.242)                          | 17.67<br>(3.45)       | 0.035<br>(0.022)                               | 201<br>(94)                          | 69<br>(21)         | 28.97<br>(98.10)              |
| <b>50% of Pull at Reduced Engine Speed—5.5 mph (8.8 km/h)-Auto mode</b> |                                |                        |                                 |           |                                           |                       |                                                |                                      |                    |                               |
| 201.81<br>(150.49)                                                      | 13875<br>(61.72)               | 5.45<br>(8.77)         | 1454                            | 1.4       | 0.431<br>(0.262)                          | 16.31<br>(3.21)       | 0.024<br>(0.015)                               | 196<br>(91)                          | 69<br>(21)         | 28.97<br>(98.10)              |

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

**Dates of tests:** October 6 - 12, 2022

**Manufacturer:** John Deere Tractor Works, 3500 East Donald St., P.O. Box 270, Waterloo Ia, 50704-0270

**CONSUMABLE Fluids, OIL and TIME: Fuel** No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8447 **Fuel weight** 7.034 lbs/gal (0.843 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil** SAE 10W-30 **API service classification** CJ-4 **Transmission, hydraulic and final drive lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 25.0 hours

**ENGINE: Make** John Deere **Diesel Type** six cylinder vertical with one turbocharger, air to air aftercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** \*RG6136U000924\* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.197" x 6.496" (132.0 mm x 165.0 mm) **Compression ratio** 15.9 to 1 **Displacement** 826 cu in (13548 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** radiator for crankcase oil, radiator for transmission/hydraulic oil also feeding front and rear axles **Fuel filter** two paper cartridges **Fuel cooler** radiator for returned fuel **Exhaust** DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) integrated within a vertical muffler **Cooling medium temperature control** 1 thermostat and variable speed fan

**ENGINE OPERATING PARAMETERS: Fuel rate:** PTO (390 engine hp) 124.7 - 135.1 lb/h (56.5 - 61.3 kg/h) Drawbar operations (490 engine hp) 155.1 - 168.1 lb/h (70.4 - 76.2 kg/h) **High idle:** 2150 - 2250 rpm (2125 - 2175 rpm with PTO engaged) **Turbo boost:** nominal 24.0 - 26.5 psi (165 - 183 kPa) as measured 25.0 psi (172 kPa)

**CHASSIS: Type** four wheel drive with duals **Serial No.** \*1RW9490DLNA075248\* **Tread width** rear 134.1" (3406 mm) to 143.6" (3648 mm), front 134.1" (3406 mm) to 143.6" (3648 mm) **Wheelbase** 154.0" (3912 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled power shift **Nominal travel speeds mph (km/h)** first 2.56 (4.12) second 3.16 (5.09) third 3.48 (5.60) fourth 3.91 (6.29) fifth 4.30 (6.92) sixth 4.82 (7.76) seventh 5.31 (8.55) eighth 5.91 (9.51) ninth 6.56 (10.55) tenth 7.29 (11.73) eleventh 8.03 (12.92) twelfth 8.84 (14.22) thirteenth 9.91 (15.95) fourteenth 10.91 (17.55) fifteenth 13.47 (21.68) sixteenth 16.63 (26.76) seventeenth 20.38 (32.79) eighteenth 24.86 (40.00) (electronically limited)

### MAXIMUM POWER IN SELECTED GEARS

### MAXIMUM POWER IN SELECTED GEARS

| Power<br>Hp<br>(kW) | Drawbar<br>pull<br>lbs<br>(kN) | Speed<br>mph<br>(km/h) | Crank-<br>shaft<br>speed<br>rpm | Slip<br>% | Fuel Consumption<br>lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | D.E.F.<br>Consumption<br>lb/hp.hr<br>(kg/kW.h) | Temp.°F<br>cool-<br>ing<br>med | (°C)<br>Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|-------------------------------------------|-----------------------|------------------------------------------------|--------------------------------|----------------------------|-------------------------------|
| 297.16<br>(221.59)  | 45706<br>(203.31)              | 2.44<br>(3.93)         | 2162                            | 7.3       | 1st Gear<br>0.469<br>(0.286)              | 14.98<br>(2.95)       | 0.024<br>(0.015)                               | 206<br>(96)                    | 51<br>(11)                 | 29.26<br>(99.09)              |
| 350.29<br>(261.21)  | 44254<br>(196.85)              | 2.97<br>(4.78)         | 2131                            | 7.1       | 2nd Gear<br>0.456<br>(0.277)              | 15.43<br>(3.04)       | 0.019<br>(0.012)                               | 207<br>(97)                    | 53<br>(11)                 | 29.26<br>(99.09)              |
| 367.06<br>(273.72)  | 42379<br>(188.51)              | 3.25<br>(5.23)         | 2104                            | 6.7       | 3rd Gear<br>0.443<br>(0.269)              | 15.89<br>(3.13)       | 0.019<br>(0.012)                               | 207<br>(97)                    | 54<br>(12)                 | 29.26<br>(99.07)              |
| 377.20<br>(281.28)  | 38085<br>(169.41)              | 3.72<br>(5.98)         | 2100                            | 4.5       | 4th Gear<br>0.434<br>(0.264)              | 16.22<br>(3.20)       | 0.017<br>(0.010)                               | 207<br>(97)                    | 55<br>(13)                 | 29.24<br>(99.02)              |
| 378.51<br>(282.25)  | 34265<br>(152.42)              | 4.14<br>(6.66)         | 2100                            | 3.1       | 5th Gear<br>0.432<br>(0.263)              | 16.30<br>(3.21)       | 0.016<br>(0.010)                               | 206<br>(97)                    | 64<br>(18)                 | 28.93<br>(97.95)              |
| 375.63<br>(280.11)  | 30180<br>(134.25)              | 4.67<br>(7.52)         | 2100                            | 2.7       | 6th Gear<br>0.434<br>(0.264)              | 16.22<br>(3.19)       | 0.014<br>(0.009)                               | 207<br>(97)                    | 67<br>(19)                 | 28.93<br>(97.97)              |
| 382.11<br>(284.94)  | 27824<br>(123.77)              | 5.15<br>(8.29)         | 2099                            | 2.5       | 7th Gear<br>0.426<br>(0.259)              | 16.50<br>(3.25)       | 0.014<br>(0.009)                               | 206<br>(97)                    | 59<br>(15)                 | 28.92<br>(97.93)              |
| 380.23<br>(283.54)  | 24813<br>(110.37)              | 5.75<br>(9.25)         | 2100                            | 2.2       | 8th Gear<br>0.429<br>(0.261)              | 16.41<br>(3.23)       | 0.014<br>(0.009)                               | 206<br>(97)                    | 58<br>(14)                 | 28.92<br>(97.93)              |
| 377.64<br>(281.61)  | 22182<br>(98.67)               | 6.39<br>(10.28)        | 2100                            | 2.1       | 9th Gear<br>0.430<br>(0.262)              | 16.35<br>(3.22)       | 0.015<br>(0.009)                               | 207<br>(97)                    | 68<br>(20)                 | 28.94<br>(98.00)              |
| 374.85<br>(279.52)  | 19766<br>(87.92)               | 7.11<br>(11.44)        | 2098                            | 1.9       | 10th Gear<br>0.434<br>(0.264)             | 16.21<br>(3.19)       | 0.021<br>(0.013)                               | 208<br>(98)                    | 69<br>(21)                 | 28.94<br>(98.00)              |
| 374.63<br>(279.36)  | 17890<br>(79.58)               | 7.86<br>(12.64)        | 2100                            | 1.7       | 11th Gear<br>0.434<br>(0.264)             | 16.22<br>(3.19)       | 0.021<br>(0.013)                               | 208<br>(98)                    | 69<br>(21)                 | 28.95<br>(98.04)              |
| 376.69<br>(280.90)  | 16335<br>(72.66)               | 8.65<br>(13.92)        | 2100                            | 1.6       | 12th Gear<br>0.431<br>(0.262)             | 16.30<br>(3.21)       | 0.021<br>(0.013)                               | 208<br>(98)                    | 69<br>(21)                 | 28.96<br>(98.07)              |

### TRACTOR SOUND LEVEL WITH CAB

|                                       |      |
|---------------------------------------|------|
| At no load in 6th gear                | 71.3 |
| Transport speed - no load - 18th gear | 73.3 |
| Bystander in 18th gear                | 86.6 |

Horizontal distance of drawbar hitch point behind rear wheel axis - 44.0"(1377 mm), 49.9"(1268 mm)

## TIRES, BALLAST 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

Four 650/85R38;\*\*\*;9(60)

Four 650/85R38;\*\*\*;9(60)

22.5 in (570 mm)

19775 lb (8970 kg)

27025 lb(12258 kg)

46800 lb(21228 kg)

reverse 2.56 (4.12), 3.48 (5.60), 3.91 (6.29), 5.31 (8.55), 5.91 (9.51), 8.03 (12.92) **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically actuated by foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 1895 engine rpm **Unladen tractor mass** 46625 lb (21149 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE 1.** In stationary PTO operation, this model operates in a derated power mode. With stationary PTO operation, using FieldCruise™, an isochronous governor is utilized. All PTO tests were conducted with FieldCruise™ engaged.

**NOTE 2.** The manufacturer declares that the average time between active regenerations is over 50 hours. No power change was observed during the active exhaust regeneration.

**NOTE 3:** The John Deere 9R 490 T.E.C.U. (Tractor Electronic Control Unit) is compliant with ISOBUS 11783.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The drawbar pull in 1st gear was limited to avoid excessive power hop. The manufacturer's remote hydraulic flow claim of 42.0 GPM (*159 l/min*) with the optional 3/4" coupler set was not verified. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2260**, Nebraska Summary 1223, February 9, 2023.

Roger M. Hoy  
Director

P.J. Jasa  
J.D. Luck  
S. Pitla

Board of Tractor Test Engineers

**DRAWBAR PERFORMANCE**  
**UNBALLASTED - AUTO MODE**  
**(Loads based on 2100 engine rpm manual mode performance runs)**  
**DRAWBAR POWER AT SELECTED TRAVEL SPEEDS**

| Power<br>Hp<br>(kW) | Drawbar<br>pull<br>lbs<br>(kN) | Speed<br>mph<br>(km/h) | Crank-<br>shaft<br>speed<br>rpm | Slip<br>% | Fuel Consumption<br>lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | D.E.F.<br>Consumption<br>lb/hp.hr<br>(kg/kW.h) | Temp.°F (°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|-------------------------------------------|-----------------------|------------------------------------------------|-------------------------------------|--------------------|-------------------------------|
| 3.5 mph (5.6 km/h)  |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 367.58<br>(274.10)  | 41719<br>(185.58)              | 3.31<br>(5.32)         | 1729                            | 6.4       | 0.417<br>(0.254)                          | 16.87<br>(3.32)       | 0.019<br>(0.012)                               | 206<br>(96)                         | 55<br>(13)         | 29.25<br>(99.05)              |
| 3.9 mph (6.2 km/h)  |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 376.61<br>(280.84)  | 37911<br>(168.64)              | 3.73<br>(5.99)         | 1548                            | 4.5       | 0.392<br>(0.239)                          | 17.93<br>(3.53)       | 0.026<br>(0.016)                               | 203<br>(95)                         | 55<br>(13)         | 29.23<br>(98.98)              |
| 4.2 mph (6.8 km/h)  |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 378.12<br>(281.96)  | 34243<br>(152.32)              | 4.14<br>(6.66)         | 1528                            | 3.2       | 0.392<br>(0.239)                          | 17.93<br>(3.53)       | 0.027<br>(0.017)                               | 206<br>(97)                         | 65<br>(18)         | 28.93<br>(97.97)              |
| 4.7 mph (7.6 km/h)  |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 375.55<br>(280.05)  | 30243<br>(134.53)              | 4.66<br>(7.50)         | 1542                            | 2.7       | 0.393<br>(0.239)                          | 17.89<br>(3.52)       | 0.028<br>(0.017)                               | 206<br>(97)                         | 68<br>(20)         | 28.94<br>(97.99)              |
| 5.2 mph (8.4 km/h)  |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 381.51<br>(284.49)  | 27724<br>(123.32)              | 5.16<br>(8.30)         | 1704                            | 2.5       | 0.403<br>(0.245)                          | 17.44<br>(3.44)       | 0.018<br>(0.011)                               | 206<br>(97)                         | 61<br>(16)         | 28.93<br>(97.95)              |
| 5.8 mph (9.4 km/h)  |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 380.79<br>(283.95)  | 24622<br>(109.52)              | 5.80<br>(9.33)         | 1717                            | 2.2       | 0.405<br>(0.246)                          | 17.37<br>(3.42)       | 0.020<br>(0.012)                               | 206<br>(97)                         | 59<br>(15)         | 28.92<br>(97.93)              |
| 6.5 mph (10.4 km/h) |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 377.35<br>(281.39)  | 22086<br>(98.32)               | 6.41<br>(10.32)        | 1719                            | 2.0       | 0.406<br>(0.247)                          | 17.32<br>(3.41)       | 0.017<br>(0.011)                               | 207<br>(97)                         | 69<br>(21)         | 28.94<br>(98.00)              |
| 7.2 mph (11.6 km/h) |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 374.04<br>(278.92)  | 19587<br>(87.13)               | 7.16<br>(11.52)        | 1917                            | 1.8       | 0.417<br>(0.253)                          | 16.89<br>(3.33)       | 0.023<br>(0.014)                               | 207<br>(97)                         | 69<br>(21)         | 28.95<br>(98.04)              |
| 8.0 mph (12.8 km/h) |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 374.74<br>(279.44)  | 17958<br>(79.88)               | 7.83<br>(12.60)        | 1902                            | 1.7       | 0.415<br>(0.253)                          | 16.94<br>(3.34)       | 0.021<br>(0.013)                               | 207<br>(97)                         | 69<br>(21)         | 28.96<br>(98.05)              |
| 8.7 mph (14.0 km/h) |                                |                        |                                 |           |                                           |                       |                                                |                                     |                    |                               |
| 375.44<br>(279.97)  | 16209<br>(72.10)               | 8.69<br>(13.98)        | 1880                            | 1.6       | 0.415<br>(0.253)                          | 16.94<br>(3.34)       | 0.023<br>(0.014)                               | 208<br>(98)                         | 69<br>(21)         | 28.96<br>(98.07)              |

**DRAWBAR PERFORMANCE**  
**(Unballasted at 1800 RPM, Manual mode)**  
**MAXIMUM POWER IN SELECTED GEARS**

| Power<br>Hp<br>(kW) | Drawbar<br>pull<br>lbs<br>(kN) | Speed<br>mph<br>(km/h) | Crank-<br>shaft<br>speed<br>rpm | Slip<br>% | Fuel Consumption<br>lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | D.E.F.<br>Consumption<br>lb/hp.hr<br>(kg/kW.h) | Temp.°F (°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|-------------------------------------------|-----------------------|------------------------------------------------|-------------------------------------|--------------------|-------------------------------|
| 294.77<br>(219.81)  | 45579<br>(202.74)              | 2.43<br>(3.90)         | 2162                            | 7.6       | 1st Gear<br>0.473<br>(0.288)              | 14.87<br>(2.93)       | 0.025<br>(0.015)                               | 206<br>(96)                         | 51<br>(11)         | 29.27<br>(99.12)              |
| 351.71<br>(262.27)  | 44323<br>(197.16)              | 2.98<br>(4.79)         | 2134                            | 7.0       | 2nd Gear<br>0.455<br>(0.277)              | 15.45<br>(3.04)       | 0.018<br>(0.011)                               | 206<br>(96)                         | 52<br>(11)         | 29.27<br>(99.10)              |
| 369.92<br>(275.85)  | 42689<br>(189.89)              | 3.25<br>(5.23)         | 2100                            | 6.3       | 3rd Gear<br>0.439<br>(0.267)              | 16.02<br>(3.16)       | 0.020<br>(0.012)                               | 206<br>(97)                         | 53<br>(12)         | 29.26<br>(99.09)              |
| 385.92<br>(287.78)  | 40118<br>(178.45)              | 3.61<br>(5.81)         | 2054                            | 5.2       | 4th Gear<br>0.429<br>(0.261)              | 16.41<br>(3.23)       | 0.018<br>(0.011)                               | 208<br>(98)                         | 55<br>(13)         | 29.23<br>(98.98)              |
| 407.86<br>(304.13)  | 39903<br>(177.50)              | 3.84<br>(6.17)         | 1982                            | 5.1       | 5th Gear<br>0.420<br>(0.255)              | 16.76<br>(3.30)       | 0.018<br>(0.011)                               | 207<br>(97)                         | 55<br>(13)         | 29.22<br>(98.95)              |
| 418.77<br>(312.27)  | 37769<br>(168.00)              | 4.16<br>(6.69)         | 1902                            | 4.3       | 6th Gear<br>0.411<br>(0.250)              | 17.11<br>(3.37)       | 0.022<br>(0.013)                               | 207<br>(97)                         | 56<br>(13)         | 29.22<br>(98.93)              |
| 430.62<br>(321.11)  | 36872<br>(164.01)              | 4.38<br>(7.05)         | 1800                            | 3.4       | 7th Gear<br>0.399<br>(0.243)              | 17.63<br>(3.47)       | 0.026<br>(0.016)                               | 206<br>(97)                         | 48<br>(9)          | 29.27<br>(99.12)              |
| 430.93<br>(321.34)  | 33060<br>(147.06)              | 4.89<br>(7.87)         | 1800                            | 2.9       | 8th Gear<br>0.398<br>(0.242)              | 17.68<br>(3.48)       | 0.026<br>(0.016)                               | 206<br>(97)                         | 50<br>(10)         | 29.26<br>(99.09)              |
| 429.96<br>(320.62)  | 29594<br>(131.64)              | 5.45<br>(8.77)         | 1800                            | 2.5       | 9th Gear<br>0.399<br>(0.243)              | 17.62<br>(3.47)       | 0.027<br>(0.016)                               | 205<br>(96)                         | 49<br>(9)          | 29.27<br>(99.12)              |
| 429.97<br>(320.62)  | 26538<br>(118.04)              | 6.08<br>(9.78)         | 1801                            | 2.3       | 10th Gear<br>0.399<br>(0.243)             | 17.64<br>(3.47)       | 0.027<br>(0.017)                               | 206<br>(96)                         | 49<br>(9)          | 29.27<br>(99.12)              |
| 430.38<br>(320.93)  | 24073<br>(107.08)              | 6.70<br>(10.78)        | 1800                            | 2.1       | 11th Gear<br>0.399<br>(0.243)             | 17.63<br>(3.47)       | 0.027<br>(0.016)                               | 206<br>(97)                         | 46<br>(8)          | 29.27<br>(99.12)              |
| 432.97<br>(322.86)  | 21949<br>(97.63)               | 7.40<br>(11.91)        | 1800                            | 1.8       | 12th Gear<br>0.396<br>(0.241)             | 17.76<br>(3.50)       | 0.028<br>(0.017)                               | 206<br>(97)                         | 47<br>(8)          | 29.27<br>(99.12)              |
| 425.87<br>(317.57)  | 19241<br>(85.59)               | 8.30<br>(13.36)        | 1800                            | 1.7       | 13th Gear<br>0.402<br>(0.245)             | 17.48<br>(3.44)       | 0.028<br>(0.017)                               | 206<br>(97)                         | 47<br>(8)          | 29.27<br>(99.12)              |

**Lugging ability in 11th gear**

| Crankshaft speed rpm | 2099               | 2002               | 1899               | 1799               | 1599               | 1499               | 1300               | 1099               |
|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Pull-lbs<br>(kN)     | 18113<br>(80.57)   | 20363<br>(90.58)   | 22378<br>(99.54)   | 23946<br>(106.51)  | 25923<br>(115.31)  | 25863<br>(115.04)  | 25258<br>(112.35)  | 24296<br>(108.07)  |
| Increase in pull%    | 0                  | 12                 | 24                 | 32                 | 43                 | 43                 | 39                 | 34                 |
| Power-Hp<br>(kW)     | 379.25<br>(282.80) | 406.44<br>(303.08) | 422.94<br>(315.38) | 428.12<br>(319.25) | 411.24<br>(306.66) | 384.45<br>(286.68) | 326.07<br>(243.15) | 265.33<br>(197.85) |
| Speed-mph<br>(km/h)  | 7.85<br>(12.63)    | 7.49<br>(12.05)    | 7.09<br>(11.40)    | 6.70<br>(10.78)    | 5.95<br>(9.58)     | 5.58<br>(8.97)     | 4.84<br>(7.79)     | 4.10<br>(6.60)     |
| Slip %               | 1.6                | 1.7                | 1.9                | 2.0                | 2.2                | 2.2                | 2.1                | 2.1                |

## HYDRAULIC PERFORMANCE

CATEGORY: 4N/4

Quick Attach: Yes

OECD Static test

|                                            |                    |                          |
|--------------------------------------------|--------------------|--------------------------|
| Maximum force exerted through whole range: | <u>Category 4N</u> | <u>lift cylinders</u>    |
|                                            | 16084 lbs(71.5 kN) | (1 x 90 mm and 1x100 mm) |
|                                            | 21408 lbs(95.2 kN) | (2 x 110 mm)             |
|                                            | <u>Category 4</u>  |                          |
|                                            | 15769 lbs(70.1 kN) | (1 x 90 mm and 1x100 mm) |

### Dual pump system

#### Pump 1

#### Pump 2

three sets combined      two sets combined

|                                                                    |                         |                        |
|--------------------------------------------------------------------|-------------------------|------------------------|
| i) Sustained pressure at compensator cutoff:                       | 2899 psi (200 bar)      | 2906 psi (200 bar)     |
| ii) Pump delivery rate at minimum pressure and rated engine speed: | 58.1 GPM (219.9 l/min)  | 58.3 GPM (220.7 l/min) |
| Combined flow:                                                     | 116.4 GPM (440.6 l/min) |                        |
| iii) Pump delivery rate at maximum                                 |                         |                        |
| hydraulic power:                                                   | 58.1 GPM (219.8 l/min)  | 57.6 GPM (218.0 l/min) |
| Delivery pressure:                                                 | 2494 psi (172 bar)      | 2478 psi (171 bar)     |
| Power:                                                             | 84.5 HP (63.0 kW)       | 83.3 HP (62.1 kW)      |

### single outlet set - 1/2" couplers

|                                                                    |                        |                        |
|--------------------------------------------------------------------|------------------------|------------------------|
| i) Sustained pressure at compensator cutoff:                       | 2899 psi (200 bar)     | 2906 psi (200 bar)     |
| ii) Pump delivery rate at minimum pressure and rated engine speed: | 36.9 GPM (139.7 l/min) | 36.9 GPM (139.8 l/min) |
| iii) Pump delivery rate at maximum                                 |                        |                        |
| hydraulic power:                                                   | 34.5 GPM (130.8 l/min) | 35.3 GPM (133.8 l/min) |
| Delivery pressure:                                                 | 2269 psi (156 bar)     | 2359 psi (163 bar)     |
| Power:                                                             | 45.7 HP (34.1 kW)      | 48.6 HP (36.3 kW)      |

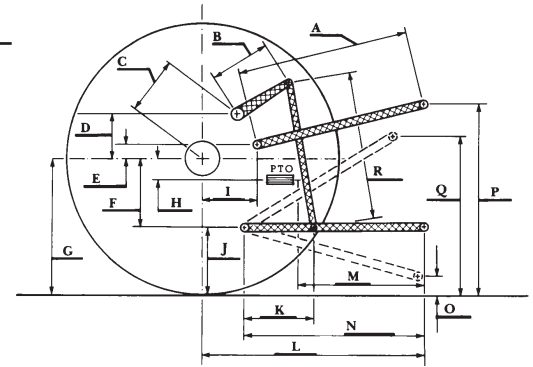
## Category 4N

## Category 4

|     | inch | mm   | inch | mm   |
|-----|------|------|------|------|
| A   | 31.7 | 805  | 30.3 | 770  |
| B   | 19.7 | 500  | 19.7 | 500  |
| C   | 25.0 | 635  | 25.0 | 635  |
| D   | 24.4 | 620  | 24.4 | 620  |
| E   | 12.8 | 325  | 12.8 | 325  |
| F   | 13.8 | 350  | 13.8 | 350  |
| G   | 36.6 | 930  | 36.6 | 930  |
| H   | 2.4  | 60   | 2.4  | 60   |
| I   | 18.7 | 474  | 18.7 | 474  |
| J   | 22.8 | 580  | 22.8 | 580  |
| K   | 30.9 | 785  | 30.9 | 785  |
| L   | 52.8 | 1342 | 52.8 | 1342 |
| *L' | 58.7 | 1491 | 59.6 | 1515 |
| M   | 22.8 | 579  | 22.8 | 579  |
| N   | 45.6 | 1159 | 45.6 | 1159 |
| O   | 9.1  | 230  | 9.1  | 230  |
| P   | 50.8 | 1290 | 50.8 | 1291 |
| Q   | 41.1 | 1045 | 40.9 | 1040 |
| R   | 47.0 | 1195 | 47.2 | 1200 |

\*L' to Quick Attach ends

## HITCH DIMENSIONS AS TESTED—NO LOAD



## RECOMMENDED CITATION FORMAT:

NTTL.(2023).Nebraska OECD Tractor test 2260 for John Deere 9R 490 Diesel.

Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from <http://tractortestlab.unl.edu>



## JOHN DEERE 9R 490 DIESEL

Institute of Agriculture and Natural Resources  
University of Nebraska–Lincoln