

# NEBRASKA OECD TRACTOR TEST 2179 - SUMMARY 1103

## JOHN DEERE 7210R DIESEL e23 TRANSMISSION

Chassis Serial numbers 89001 and higher

### 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) |  |
| <b>MAXIMUM POWER AND FUEL CONSUMPTION</b>       |                                |                       |                       |                       |                 |  |
| <b>Rated Engine Speed—(PTO speed—1067 rpm)</b>  |                                |                       |                       |                       |                 |  |
| 182.22<br>(135.88)                              | 2099                           | 10.37<br>(39.24)      | 0.398<br>(0.242)      | 17.58<br>(3.46)       | 0.23<br>(0.88)  | Fuel used during active exhaust<br>regeneration-0.61 gal (2.32 l)<br>(see note 1, p.2) |
| <b>Standard Power Take-off Speed (1000 rpm)</b> |                                |                       |                       |                       |                 |  |
| 199.07<br>(148.45)                              | 1967                           | 11.01<br>(41.68)      | 0.387<br>(0.235)      | 18.08<br>(3.56)       | 0.27<br>(1.03)  |  |
| <b>Maximum Power (1 hour)</b>                   |                                |                       |                       |                       |                 |  |
| 205.32<br>(153.11)                              | 1702                           | 11.02<br>(41.70)      | 0.375<br>(0.228)      | 18.64<br>(3.67)       | 0.27<br>(1.03)  |  |

### VARYING POWER AND FUEL CONSUMPTION

|                    |      |                  |                   |                 |                |                       |
|--------------------|------|------------------|-------------------|-----------------|----------------|-----------------------|
| 182.22<br>(135.88) | 2099 | 10.37<br>(39.24) | 0.398<br>(0.242)  | 17.58<br>(3.46) | 0.23<br>(0.88) | Air temperature       |
| 159.05<br>(118.60) | 2153 | 9.42<br>(35.65)  | 0.414<br>(0.252)  | 16.89<br>(3.33) | 0.19<br>(0.71) | 73°F (23°C)           |
| 119.98<br>(89.47)  | 2165 | 7.52<br>(28.46)  | 0.438<br>(0.267)  | 15.96<br>(3.14) | 0.15<br>(0.56) | Relative humidity     |
| 80.29<br>(59.88)   | 2172 | 6.00<br>(22.71)  | 0.523<br>(0.318)  | 13.39<br>(2.64) | 0.11<br>(0.42) | 33%                   |
| 40.56<br>(30.25)   | 2182 | 4.35<br>(16.48)  | 0.751<br>(0.457)  | 9.32<br>(1.83)  | 0.07<br>(0.27) | Barometer             |
| 1.73<br>(1.29)     | 2192 | 2.63<br>(9.95)   | 10.605<br>(6.451) | 0.66<br>(0.13)  | 0.09<br>(0.36) | 28.94" Hg (97.99 kPa) |

Maximum torque - 673 lb.-ft. (912 Nm) at 1501 rpm

Maximum torque rise - 47.6%

Torque rise at 1680 engine rpm - 42%

Power increase at 1702 engine rpm - 12.7%

### DRAWBAR PERFORMANCE UNBALLASTED - FRONT DRIVE ENGAGED 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) | D.E.F.<br>Consumption<br>lb/hp.hr<br>(kg/kW.h) | Temp. °F(°C)     | Barom.<br>inch<br>Hg<br>(kPa)   |
|---|--------------------------------|------------------------|---------------------------------|-----------|---|--|------------------|---------------------------------|
| <b>Power at Rated Engine Speed—10th Gear-Manual mode</b>                |                                |                        |                                 |           |   |  |                  |                                 |
| 170.77<br>(127.34)  | 12588<br>(55.99)               | 5.09<br>(8.19)         | 2099                            | 2.5       | 0.421<br>(0.256)                          | 16.60<br>(3.27)                                | 0.012<br>(102)   | 215<br>(62)<br>28.97<br>(98.10) |
| <b>75% of Pull at Rated Engine Speed—10th Gear-Manual mode</b>          |                                |                        |                                 |           |   |  |                  |                                 |
| 132.60<br>(98.88)   | 9438<br>(41.98)                | 5.27<br>(8.48)         | 2158                            | 1.8       | 0.450<br>(0.274)                          | 15.53<br>(3.06)                                | 0.011<br>(0.007) | 215<br>(69)<br>28.92<br>(97.93) |
| <b>50% of Pull at Rated Engine Speed—10th Gear-Manual mode</b>          |                                |                        |                                 |           |   |  |                  |                                 |
| 89.64<br>(66.84)  | 6303<br>(28.04)                | 5.33<br>(8.58)         | 2169                            | 1.1       | 0.513<br>(0.312)                          | 13.63<br>(2.68)                                | 0.013<br>(0.008) | 215<br>(69)<br>28.93<br>(97.97) |
| <b>75% of Pull at Reduced Engine Speed—5.3 mph (8.6 km/h)-Auto mode</b> |                                |                        |                                 |           |   |  |                  |                                 |
| 132.75<br>(98.99)   | 9486<br>(42.19)                | 5.25<br>(8.45)         | 1400                            | 1.8       | 0.401<br>(0.244)                          | 17.45<br>(3.44)                                | 0.013<br>(0.008) | 215<br>(68)<br>28.92<br>(97.93) |
| <b>50% of Pull at Reduced Engine Speed—5.3 mph (8.6 km/h)-Auto mode</b> |                                |                        |                                 |           |   |  |                  |                                 |
| 89.38<br>(66.65)  | 6341<br>(28.21)                | 5.29<br>(8.51)         | 1224                            | 1.1       | 0.416<br>(0.253)                          | 16.79<br>(3.31)                                | 0.019<br>(0.012) | 214<br>(71)<br>28.83<br>(97.63) |

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

**Dates of tests:** September 5 - 8, 2017

**Manufacturer:** John Deere Tractor Works, 3500 East Donald Street, 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)** 0.8400 **Fuel weight** 6.994 lbs/gal (0.838 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil SAE 15W-40 API service classification** CJ-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Front axle lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 23.5 hours

**ENGINE: Make** John Deere **Diesel Type** six cylinder vertical with turbocharger, air to air aftercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** \*PE6068U051259\* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.19 x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 17.2 to 1 **Displacement** 414 cu in (6788 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 and prestrainer **Fuel cooler** radiator for pump return fuel **Exhaust** DOC (diesel oxidation catalyst), SCR (selective catalyst reduction) and regenerative DPF (diesel particulate filter) integrated within a vertical muffler **Cooling medium temperature control** 2 thermostats and variable speed fan

**ENGINE OPERATING PARAMETERS: Fuel rate:** 67.9 - 73.4 lb/h (30.8 - 33.3 kg/h) **High idle:** 2150 - 2250 rpm **Turbo boost:** nominal 25.4 - 28.3 psi (175 - 195 kPa) as measured 26.7 psi (184 kPa)

**CHASSIS: Type** front wheel assist with duals **Serial No.** \*1RW7210REHS093003\* **Tread width** rear 60.0" (1524 mm) to 128.9" (3272 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 115.2" (2925 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 1.50 (2.42) second 1.74 (2.80) third 2.01 (3.23) fourth 2.32 (3.73) fifth 2.67 (4.29) sixth 3.08 (4.96) seventh 3.53 (5.68) eighth 4.08 (6.56) ninth 4.66 (7.50) tenth 5.38 (8.66) eleventh 6.21 (10.00) twelfth 7.15 (11.51) thirteenth 8.26 (13.29) fourteenth 9.45 (15.21) fifteenth 10.92 (17.57) sixteenth 12.68

**DRAWBAR PERFORMANCE**  
**UNBALLASTED - FRONT DRIVE ENGAGED**  
**MANUAL MODE - 2100 ENGINE RPM**  
**DRAWBAR 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) | D.E.F<br>Consumption<br>lb/hp.hr<br>(kg/kW.h) | Temp. <sup>o</sup> F(°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |                  |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|---|---|---|--------------------|-------------------------------|------------------|
| 5th Gear            |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 131.97<br>(98.41)   | 21510<br>(95.68)               | 2.31<br>(3.71)         | 2154                            | 13.6      | 0.494<br>(0.300)                          | 14.17<br>(2.79)                               | 0.013<br>(0.008)                                | 215<br>(102)       | 68<br>(20)                    | 28.87<br>(97.77) |
| 6th Gear            |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 148.61<br>(110.81)  | 21022<br>(93.51)               | 2.65<br>(4.26)         | 2124                            | 13.1      | 0.475<br>(0.289)                          | 14.71<br>(2.90)                               | 0.013<br>(0.008)                                | 216<br>(102)       | 53<br>(12)                    | 28.89<br>(97.83) |
| 7th Gear            |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 165.51<br>(123.42)  | 19353<br>(86.08)               | 3.21<br>(5.17)         | 2099                            | 6.4       | 0.438<br>(0.266)                          | 15.97<br>(3.15)                               | 0.011<br>(0.007)                                | 216<br>(102)       | 56<br>(13)                    | 28.89<br>(97.83) |
| 8th Gear            |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 168.99<br>(126.01)  | 16683<br>(74.21)               | 3.80<br>(6.12)         | 2100                            | 4.0       | 0.429<br>(0.261)                          | 16.30<br>(3.21)                               | 0.011<br>(0.007)                                | 215<br>(102)       | 62<br>(17)                    | 28.89<br>(97.83) |
| 9th Gear            |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 169.27<br>(126.22)  | 14481<br>(64.41)               | 4.38<br>(7.05)         | 2100                            | 3.2       | 0.425<br>(0.259)                          | 16.46<br>(3.24)                               | 0.011<br>(0.007)                                | 216<br>(102)       | 59<br>(15)                    | 28.97<br>(98.10) |
| 10th Gear           |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 170.77<br>(127.34)  | 12588<br>(55.99)               | 5.09<br>(8.19)         | 2099                            | 2.5       | 0.421<br>(0.256)                          | 16.60<br>(3.27)                               | 0.012<br>(0.007)                                | 215<br>(102)       | 62<br>(16)                    | 28.97<br>(98.10) |
| 11th Gear           |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 168.52<br>(125.66)  | 10705<br>(47.62)               | 5.90<br>(9.50)         | 2100                            | 2.1       | 0.427<br>(0.259)                          | 16.40<br>(3.23)                               | 0.011<br>(0.007)                                | 216<br>(102)       | 64<br>(18)                    | 28.97<br>(98.10) |
| 12th Gear           |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 169.86<br>(126.66)  | 9352<br>(41.60)                | 6.81<br>(10.96)        | 2100                            | 1.8       | 0.422<br>(0.257)                          | 16.56<br>(3.26)                               | 0.012<br>(0.007)                                | 216<br>(102)       | 64<br>(18)                    | 28.97<br>(98.10) |
| 13th Gear           |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 168.02<br>(125.29)  | 7981<br>(35.50)                | 7.90<br>(12.71)        | 2100                            | 1.6       | 0.427<br>(0.260)                          | 16.39<br>(3.23)                               | 0.011<br>(0.007)                                | 217<br>(103)       | 66<br>(19)                    | 28.96<br>(98.07) |
| 14th Gear           |                                |                        |                                 |           |   |   |   |                    |                               |                  |
| 166.37<br>(124.06)  | 6889<br>(30.64)                | 9.06<br>(14.57)        | 2100                            | 1.3       | 0.430<br>(0.262)                          | 16.26<br>(3.20)                               | 0.011<br>(0.007)                                | 217<br>(103)       | 67<br>(20)                    | 28.96<br>(98.07) |

**TRACTOR SOUND LEVEL WITH CAB**

|                                       | Front Wheel Drive<br>Engaged<br>dB(A) | Disengaged<br>dB(A) |
|---------------------------------------|---------------------------------------|---------------------|
| At no load in 9th gear                | 66.9                                  | 66.8                |
| Transport speed - no load - 21st gear |                                       | 69.2                |
| Bystander in 21st gear                |                                       | 83.4                |

**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**

Four 480/80R46;\*\*\*;12(85)  
Two 420/90R30;\*\*\*;14(95)  
19.5 in (495 mm)  
14790 lb (6709 kg)  
7675 lb (3481 kg)  
22465 lb(10190 kg)

(20.41) seventeenth 14.65 (23.57) eighteenth 16.91 (27.22) nineteenth 19.54 (31.44) twentieth 22.47 (36.17) twenty-first 25.96 (41.78) twenty-second 26.10 (42.00) twenty-third 26.10 (42.00) electronically limited reverse 1.41 (2.27), 1.88 (3.02), 2.50 (4.02), 3.30 (5.31), 3.77 (6.07), 5.03 (8.10), 6.69 (10.76), 8.84 (14.22), 11.86 (19.08), 15.81 (25.45), 18.64 (30.00), 18.64 (30.00) electronically limited **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1763 engine rpm or 1000 rpm at 1967 or 1756 engine rpm **Unladen tractor mass** 22290 lb (10111 kg)

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

**NOTE 1:** The manufacturer declares that the average time between active regenerations is 50 hours. A 1% power increase was observed during the active regeneration.

**NOTE 2:** The performance data on this report applies to tractor with chassis serial numbers that end with 89001 and higher equipped with a single turbo engine.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. This tractor fell 1.2% short of meeting the manufacturer's remote hydraulic flow claim of 59 GPM (223.3 l/min) with the 85 cc pump. 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. **2179**, Nebraska Summary 1103, October 17, 2017.

Roger M. Hoy  
Director

M.F. Kocher  
S.K. Pitla  
P.J. Jasa  
Board of Tractor Test Engineers

**DRAWBAR PERFORMANCE**  
**UNBALLASTED - FRONT DRIVE ENGAGED - 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      |                       | D.E.F<br>Consumption  | Temp. °F(°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|-----------------------|-----------------------|-----------------------|-------------------------------------|--------------------|-------------------------------|
|                     |                                |                        |                                 |           | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | lb/hp.hr<br>(kg/kW.h) |                                     |                    |                               |
| 3.5 mph (5.6 km/h)  |                                |                        |                                 |           |                       |                       |                       |                                     |                    |                               |
| 165.62<br>(123.50)  | 18877<br>(83.97)               | 3.29<br>(5.29)         | 1616                            | 5.5       | 0.408<br>(0.248)      | 17.12<br>(3.37)       | 0.014<br>(0.008)      | 214<br>(101)                        | 58<br>(14)         | 28.89<br>(97.83)              |
| 4.0 mph (6.4 km/h)  |                                |                        |                                 |           |                       |                       |                       |                                     |                    |                               |
| 169.00<br>(126.02)  | 16585<br>(73.77)               | 3.82<br>(6.15)         | 1599                            | 4.0       | 0.400<br>(0.243)      | 17.49<br>(3.44)       | 0.015<br>(0.009)      | 214<br>(101)                        | 66<br>(19)         | 28.89<br>(97.83)              |
| 4.3 mph (7.0 km/h)  |                                |                        |                                 |           |                       |                       |                       |                                     |                    |                               |
| 168.61<br>(125.73)  | 14840<br>(66.01)               | 4.26<br>(6.86)         | 1532                            | 3.3       | 0.401<br>(0.244)      | 17.44<br>(3.44)       | 0.012<br>(0.007)      | 214<br>(101)                        | 61<br>(16)         | 28.97<br>(98.10)              |
| 5.2 mph (8.4 km/h)  |                                |                        |                                 |           |                       |                       |                       |                                     |                    |                               |
| 170.22<br>(126.93)  | 12545<br>(55.80)               | 5.09<br>(8.19)         | 1580                            | 2.5       | 0.396<br>(0.241)      | 17.66<br>(3.48)       | 0.012<br>(0.007)      | 214<br>(101)                        | 63<br>(17)         | 28.97<br>(98.10)              |
| 6.0 mph (9.6 km/h)  |                                |                        |                                 |           |                       |                       |                       |                                     |                    |                               |
| 168.72<br>(125.81)  | 10837<br>(48.20)               | 5.84<br>(9.40)         | 1563                            | 2.1       | 0.397<br>(0.241)      | 17.63<br>(3.47)       | 0.013<br>(0.008)      | 215<br>(102)                        | 65<br>(18)         | 28.97<br>(98.10)              |
| 6.9 mph (11.2 km/h) |                                |                        |                                 |           |                       |                       |                       |                                     |                    |                               |
| 169.44<br>(126.35)  | 9293<br>(41.34)                | 6.84<br>(11.01)        | 1594                            | 1.8       | 0.395<br>(0.240)      | 17.70<br>(3.49)       | 0.014<br>(0.008)      | 215<br>(102)                        | 67<br>(19)         | 28.97<br>(98.10)              |
| 8.1 mph (13.0 km/h) |                                |                        |                                 |           |                       |                       |                       |                                     |                    |                               |
| 167.60<br>(124.98)  | 7896<br>(35.12)                | 7.96<br>(12.81)        | 1601                            | 1.5       | 0.398<br>(0.242)      | 17.57<br>(3.46)       | 0.014<br>(0.009)      | 216<br>(102)                        | 66<br>(19)         | 28.96<br>(98.07)              |
| 9.2 mph (14.8 km/h) |                                |                        |                                 |           |                       |                       |                       |                                     |                    |                               |
| 166.67<br>(124.28)  | 6878<br>(30.59)                | 9.09<br>(14.63)        | 1570                            | 1.1       | 0.399<br>(0.243)      | 17.52<br>(3.45)       | 0.011<br>(0.007)      | 217<br>(103)                        | 67<br>(20)         | 28.94<br>(98.00)              |

**DRAWBAR PERFORMANCE**  
**UNBALLASTED - FRONT DRIVE ENGAGED - 1700 ENGINE RPM**  
**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) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|---|-----------------------|---|-------------------------------------|--------------------|-------------------------------|
| 5th Gear            |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 131.22<br>(97.85)   | 21607<br>(96.11)               | 2.28<br>(3.67)         | 2154                            | 14.5      | 0.497<br>(0.302)                          | 14.08<br>(2.77)       | 0.013<br>(0.008)                              | 215<br>(102)                        | 69<br>(20)         | 28.87<br>(97.77)              |
| 6th Gear            |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 148.91<br>(111.04)  | 21015<br>(93.48)               | 2.66<br>(4.27)         | 2126                            | 13.0      | 0.475<br>(0.289)                          | 14.72<br>(2.90)       | 0.012<br>(0.007)                              | 216<br>(102)                        | 53<br>(12)         | 28.89<br>(97.83)              |
| 7th Gear            |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 167.69<br>(125.04)  | 19944<br>(88.72)               | 3.16<br>(5.08)         | 2078                            | 7.1       | 0.437<br>(0.266)                          | 16.00<br>(3.15)       | 0.012<br>(0.007)                              | 215<br>(102)                        | 60<br>(15)         | 28.89<br>(97.83)              |
| 8th Gear            |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 178.52<br>(133.12)  | 18979<br>(84.42)               | 3.53<br>(5.68)         | 2005                            | 6.3       | 0.425<br>(0.259)                          | 16.46<br>(3.24)       | 0.012<br>(0.007)                              | 216<br>(102)                        | 66<br>(19)         | 28.87<br>(97.77)              |
| 9th Gear            |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 185.89<br>(138.62)  | 17915<br>(79.69)               | 3.89<br>(6.26)         | 1902                            | 5.2       | 0.419<br>(0.255)                          | 16.71<br>(3.29)       | 0.013<br>(0.008)                              | 216<br>(102)                        | 72<br>(22)         | 28.87<br>(97.77)              |
| 10th Gear           |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 190.06<br>(141.73)  | 16471<br>(73.26)               | 4.33<br>(6.97)         | 1816                            | 4.2       | 0.407<br>(0.248)                          | 17.18<br>(3.38)       | 0.012<br>(0.007)                              | 216<br>(102)                        | 73<br>(23)         | 28.87<br>(97.77)              |
| 11th Gear           |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 191.25<br>(142.62)  | 15212<br>(67.66)               | 4.72<br>(7.59)         | 1700                            | 3.4       | 0.404<br>(0.246)                          | 17.32<br>(3.41)       | 0.012<br>(0.007)                              | 215<br>(102)                        | 64<br>(18)         | 28.97<br>(98.10)              |
| 12th Gear           |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 192.34<br>(143.42)  | 13204<br>(58.73)               | 5.46<br>(8.79)         | 1700                            | 2.7       | 0.400<br>(0.243)                          | 17.48<br>(3.44)       | 0.012<br>(0.007)                              | 216<br>(102)                        | 67<br>(19)         | 28.97<br>(98.10)              |
| 13th Gear           |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 191.53<br>(142.82)  | 11323<br>(50.37)               | 6.34<br>(10.20)        | 1700                            | 2.3       | 0.400<br>(0.244)                          | 17.47<br>(3.44)       | 0.012<br>(0.007)                              | 217<br>(103)                        | 66<br>(19)         | 28.96<br>(98.07)              |
| 14th Gear           |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 193.31<br>(144.15)  | 9953<br>(44.27)                | 7.28<br>(11.72)        | 1700                            | 1.9       | 0.400<br>(0.243)                          | 17.50<br>(3.45)       | 0.013<br>(0.008)                              | 217<br>(103)                        | 68<br>(20)         | 28.94<br>(98.00)              |
| 15th Gear           |                                |                        |                                 |           |   |                       |   |                                     |                    |                               |
| 191.71<br>(142.96)  | 8515<br>(37.88)                | 8.44<br>(13.58)        | 1700                            | 1.7       | 0.403<br>(0.245)                          | 17.37<br>(3.42)       | 0.012<br>(0.007)                              | 217<br>(103)                        | 68<br>(20)         | 28.94<br>(98.00)              |

## Shiftable PTO Performance

### Economy mode

1003 PTO rpm @ 1763 engine rpm

| Power<br>HP<br>(kW) | Crank<br>shaft<br>speed<br>rpm | Diesel<br>Consumption<br>Gal/hr<br>(l/h) | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | D.E.F.<br>Consumption<br>Gal/hr<br>(l/h) |
|---------------------|--------------------------------|--|-----------------------|-----------------------|--|
| 200.10<br>(149.21)  | 1764                           | 10.51<br>(39.80)                         | 0.367<br>(0.224)      | 19.03<br>(3.75)       | 0.30<br>(1.15)                           |
| 150.25<br>(112.04)  | 1764                           | 8.09<br>(30.62)                          | 0.377<br>(0.229)      | 18.57<br>(3.66)       | 0.25<br>(0.94)                           |
| 99.94<br>(74.52)    | 1763                           | 5.77<br>(21.85)                          | 0.404<br>(0.246)      | 17.31<br>(3.41)       | 0.16<br>(0.61)                           |
| 50.15<br>(37.40)    | 1764                           | 3.74<br>(14.16)                          | 0.522<br>(0.317)      | 13.40<br>(2.64)       | 0.09<br>(0.33)                           |
| 1.39<br>(1.04)      | 1762                           | 1.86<br>(7.04)                           | 9.319<br>(5.669)      | 0.75<br>(0.15)        | 0.07<br>(0.27)                           |

### Normal mode

1000 PTO rpm @ 1967 engine rpm

| Power<br>HP<br>(kW) | Crank<br>shaft<br>speed<br>rpm | Diesel<br>Consumption<br>Gal/hr<br>(l/h) | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | D.E.F.<br>Consumption<br>Gal/hr<br>(l/h) |
|---------------------|--------------------------------|--|-----------------------|-----------------------|--|
| 199.38<br>(148.68)  | 1967                           | 11.01<br>(41.66)                         | 0.386<br>(0.235)      | 18.12<br>(3.57)       | 0.28<br>(1.05)                           |
| 150.13<br>(111.95)  | 1975                           | 8.56<br>(32.40)                          | 0.399<br>(0.243)      | 17.54<br>(3.46)       | 0.20<br>(0.74)                           |
| 100.00<br>(74.57)   | 1972                           | 6.29<br>(23.80)                          | 0.440<br>(0.267)      | 15.91<br>(3.13)       | 0.13<br>(0.48)                           |
| 50.07<br>(37.34)    | 1968                           | 4.19<br>(15.86)                          | 0.585<br>(0.356)      | 11.95<br>(2.35)       | 0.08<br>(0.30)                           |
| 1.35<br>(1.00)      | 1970                           | 2.33<br>(8.80)                           | 12.070<br>(7.342)     | 0.58<br>(0.11)        | 0.11<br>(0.41)                           |

## HYDRAULIC PERFORMANCE

CATEGORY: III

Quick Attach: Yes

OECD Static test

Maximum force exerted through whole range:

lift cylinders  
12408 lbs (55.2 kN) (2 x 90 mm)  
15324 lbs (68.2 kN) (2 x 100 mm)

i) Sustained pressure at compensator cutoff:

|  |                    |                    |                    |
|--|--------------------|--------------------|--------------------|
|  | <u>45 cc pump</u>  | <u>63 cc pump</u>  | <u>85 cc pump</u>  |
|  | 2985 psi (206 bar) | 2922 psi (201 bar) | 2931 psi (202 bar) |

**three outlet sets combined**

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

|  |                        |                        |                        |
|--|------------------------|------------------------|------------------------|
|  | 34.5 GPM (130.6 l/min) | 44.3 GPM (167.7 l/min) | 58.3 GPM (220.7 l/min) |
|--|------------------------|------------------------|------------------------|

iii) Pump delivery rate at maximum

hydraulic power:

Delivery pressure:

Power:

|                        |                        |                        |
|------------------------|------------------------|------------------------|
| 33.5 GPM (126.9 l/min) | 42.8 GPM (162.2 l/min) | 57.5 GPM (217.6 l/min) |
| 2845 psi (196 bar)     | 2762 psi (190 bar)     | 2571 psi (177 bar)     |
| 55.6 HP (41.5 kW)      | 69.0 HP (51.5 kW)      | 86.2 HP (64.3 kW)      |

**single outlet set**

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

|  |                        |                        |                        |
|--|------------------------|------------------------|------------------------|
|  | 34.1 GPM (129.1 l/min) | 36.0 GPM (136.1 l/min) | 36.4 GPM (137.9 l/min) |
|--|------------------------|------------------------|------------------------|

iii) Pump delivery rate at maximum

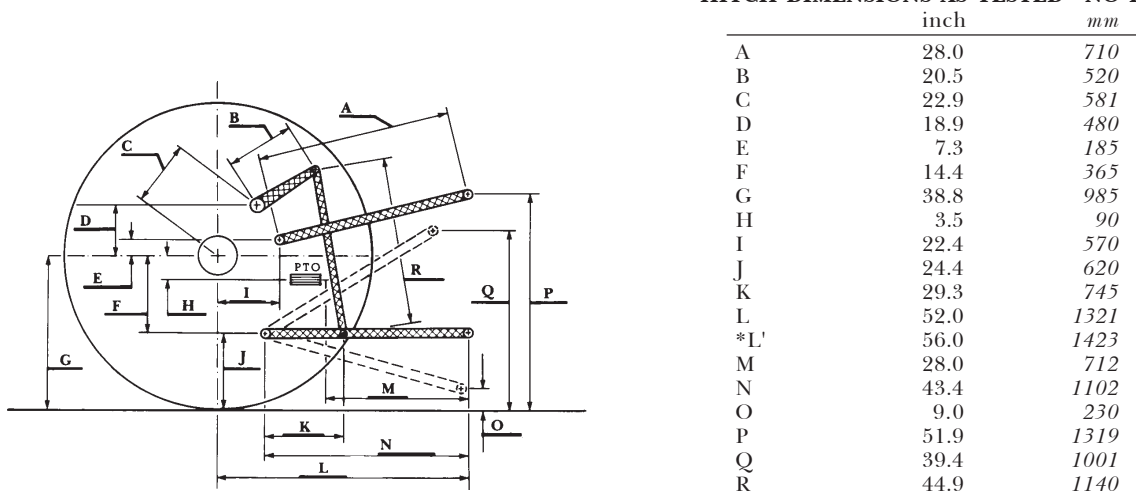
hydraulic power:

Delivery pressure:

Power:

|                        |                        |                        |
|------------------------|------------------------|------------------------|
| 33.3 GPM (126.1 l/min) | 34.3 GPM (129.8 l/min) | 35.4 GPM (134.0 l/min) |
| 2423 psi (167 bar)     | 2380 psi (158 bar)     | 2244 psi (155 bar)     |
| 47.1 HP (35.1 kW)      | 47.6 HP (35.5 kW)      | 46.4 HP (34.6 kW)      |

### HITCH DIMENSIONS AS TESTED—NO LOAD



\*L' to Quick Attach ends

NTTL.(2017) Nebraska OECD tractor test 2179 for John Deere 7210R e23 Diesel.  
Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from <http://tractortestlab.unl.edu>



**JOHN DEERE 7210R DIESEL**  
Institute of Agriculture and Natural Resources  
University of Nebraska–Lincoln