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Test 1622: John Deere 4955 and 4960 Powershift Diesel 15-Speed

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1622—SUMMARY 060

JOHN DEERE 4955 POWERSHIFT DIESEL

ALSO JOHN DEERE 4960 POWERSHIFT DIESEL

15 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—998 rpm)					
202.73 (151.18)	2200	11.02 (41.72)	0.376 (0.229)	18.39 (3.62)	

Maximum Power (2 Hours)					
210.00 (156.60)	1951	10.95 (41.44)	0.360 (0.219)	19.18 (3.78)	

VARYING POWER AND FUEL CONSUMPTION

202.73 (151.18)	2200	11.02 (41.72)	0.376 (0.229)	18.39 (3.62)	Air temperature 74°F (23°C)
177.23 (132.16)	2266	10.03 (37.95)	0.391 (0.238)	17.68 (3.48)	
134.91 (100.60)	2297	7.99 (30.23)	0.409 (0.249)	16.89 (3.33)	Relative humidity 48%
91.46 (68.20)	2330	6.12 (23.17)	0.462 (0.281)	14.95 (2.94)	
46.05 (34.34)	2356	4.30 (16.27)	0.645 (0.392)	10.72 (2.11)	Barometer 28.69" Hg (97.14 kPa)
0.77 (0.57)	2368	2.39 (9.04)	21.517 (13.088)	0.32 (0.06)	

Maximum Torque 670 lb.-ft (909 Nm) at 1350 rpm

Maximum Torque Rise 38.5%

Torque Rise at 1000 engine rpm 11%

DRAWBAR PERFORMANCE

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—12th Gear									
176.48 (131.60)	7486 (33.30)	8.84 (14.23)	2197	2.66	0.434 (0.264)	15.93 (3.14)	186 (86)	50 (10)	28.77 (97.43)
75% of Pull at Maximum Power—12th Gear									
137.77 (102.73)	5614 (24.97)	9.20 (14.81)	2277	2.30	0.473 (0.287)	14.63 (2.88)	184 (84)	64 (18)	28.75 (97.36)
50% of Pull at Maximum Power—12th Gear									
93.98 (70.08)	3748 (16.67)	9.40 (15.13)	2312	1.65	0.534 (0.325)	12.95 (2.55)	182 (83)	65 (18)	28.74 (97.32)
75% of Pull at Reduced Engine Speed—13th Gear									
137.83 (102.78)	5620 (25.00)	9.20 (14.80)	1839	2.20	0.451 (0.274)	15.33 (3.02)	187 (86)	64 (18)	28.75 (97.36)
50% of Pull at Reduced Engine Speed—13th Gear									
93.79 (69.94)	3742 (16.65)	9.40 (15.13)	1868	1.56	0.497 (0.303)	13.90 (2.74)	180 (82)	68 (20)	28.74 (97.32)

Location of Test: Center for Agricultural Equip-
ment, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: April-June, 1989

Manufacturer: John Deere Waterloo Works, P.O.
Box 3500, Waterloo, Iowa 50704

FUEL OIL and TIME: Fuel No. 2 Diesel Cetane
No. 51.1 Specific gravity converted to 60°/60°F
(15°/15°C) 0.8301 Fuel weight 6.912 lbs/gal (0.828
kg/l) Oil SAE 15W40 API service classification
CD/SD To motor 4.828 gal (18.277 l) Drained from
motor 4.483 gal (16.969 l) Transmission and hy-
draulic lubricant John Deere HyGard fluid Front
axle lubricant John Deere GL-5 Gear Lubricant
85W-140 Total time engine was operated 37.5
hours.

ENGINE: Make John Deere Diesel Type six cyl-
inder vertical with turbocharger and inter-
cooler Serial No. *RG6076A103190* Crank-
shaft lengthwise Rated engine speed 2200 Bore
and stroke (as specified) 4.56" × 4.75" (115.8 mm
× 120.7 mm) Compression ratio 16.0 to 1 Dis-
placement 466 cu in (7634 ml) Starting system 12
volt Lubrication pressure Air cleaner two paper
elements 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 prefilter Muffler ver-
tical Cooling medium temperature control 2 ther-
mostats and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel
rate 75.3-82.2 lb/hr (34.2-37.3 kg/hr) High idle
2350-2400 rpm Turbo boost nominal 16-19 psi
(110-131 kPa) as measured 16.7 psi (115 kPa).

CHASSIS: Type front wheel assist Serial No.
RW4955P001024 Tread width rear 64.6" (1642
mm) to 115.7" (2938 mm) front 66.6" (1691 mm) to
87.8" (2230 mm) Wheel base 117.1" (2974 mm) Hy-
draulic control system direct engine drive Trans-
mission selective gear fixed ratio with full range
operator controlled powershift Nominal travel
speeds mph (km/h) first 1.42 (2.29) second 2.03
(3.27) third 2.46 (3.96) fourth 3.09 (4.97) fifth 3.56
(5.72) sixth 4.04 (6.50) seventh 4.65 (7.49) eighth
5.34 (8.60) ninth 6.16 (9.91) tenth 6.99 (11.24)
eleventh 8.05 (12.95) twelfth 9.00 (14.49) thir-
teenth 11.14 (17.93) fourteenth 15.58 (25.08) fif-
teenth 19.29 (31.04) reverse 1.97 (3.17), 2.81 (4.53),
4.27 (6.88), 6.44 (10.36) Clutch multiple wet disc
hydraulically power actuated by foot pedal Brakes
multiple wet disc hydraulically power actuated by
two foot pedals which can be locked together
Steering hydrostatic Power take-off 998 rpm at
2200 engine rpm Unladen tractor mass 18370 lb
(8332 kg).

DRAWBAR PERFORMANCE AT 1950 RPM MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Temp. [°] F cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
6th Gear									
158.13 (117.92)	17021 (75.71)	3.48 (5.61)	2201	14.57	0.480 (0.292)	14.39 (2.83)	186 (85)	52 (11)	28.78 (97.46)
7th Gear									
171.46 (127.86)	15092 (67.13)	4.26 (6.86)	2165	7.80	0.434 (0.264)	15.92 (3.14)	187 (86)	57 (14)	28.78 (97.46)
8th Gear									
172.81 (128.87)	14398 (64.05)	4.50 (7.24)	1952	6.06	0.440 (0.268)	15.71 (3.09)	186 (85)	50 (10)	28.77 (97.43)
9th Gear									
174.49 (130.12)	12463 (55.44)	5.25 (8.45)	1950	4.87	0.434 (0.264)	15.94 (3.14)	188 (87)	50 (10)	28.77 (97.43)
10th Gear									
177.01 (132.00)	11045 (49.13)	6.01 (9.67)	1952	4.08	0.430 (0.262)	16.06 (3.16)	187 (86)	50 (10)	28.77 (97.43)
11th Gear									
176.21 (131.40)	9500 (42.26)	6.96 (11.19)	1949	3.38	0.427 (0.260)	16.18 (3.19)	188 (87)	50 (10)	28.77 (97.43)
12th Gear									
182.82 (136.33)	8760 (38.96)	7.83 (12.60)	1954	3.02	0.411 (0.250)	16.80 (3.31)	188 (86)	50 (10)	28.77 (97.43)
13th Gear									
177.61 (132.44)	6858 (30.50)	9.71 (15.63)	1947	2.48	0.427 (0.260)	16.17 (3.19)	188 (87)	51 (11)	28.78 (97.46)

DRAWBAR PERFORMANCE AT 1950 RPM MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3rd Gear									
145.69 (108.64)	23715 (105.49)	2.30 (3.71)	2264	9.68	0.484 (0.295)	14.27 (2.81)	185 (85)	50 (10)	28.83 (97.63)
4th Gear									
167.70 (125.05)	22457 (99.89)	2.80 (4.51)	2146	7.69	0.458 (0.279)	15.08 (2.97)	188 (86)	50 (10)	28.84 (97.66)
5th Gear									
171.50 (127.89)	20351 (90.52)	3.16 (5.09)	2058	5.62	0.449 (0.273)	15.41 (3.04)	187 (86)	53 (12)	28.86 (97.73)
6th Gear									
174.65 (130.23)	18589 (82.69)	3.52 (5.67)	2001	4.68	0.434 (0.264)	15.94 (3.14)	187 (86)	64 (18)	28.66 (97.05)
7th Gear									
176.56 (131.66)	16602 (73.85)	3.99 (6.42)	1952	4.07	0.428 (0.260)	16.14 (3.18)	189 (87)	65 (18)	28.67 (97.09)
8th Gear									
172.76 (128.83)	14000 (62.28)	4.63 (7.45)	1953	3.10	0.438 (0.267)	15.77 (3.11)	188 (86)	60 (16)	28.66 (97.05)
9th Gear									
173.90 (129.68)	12182 (54.19)	5.35 (8.62)	1951	2.74	0.436 (0.265)	15.87 (3.13)	189 (87)	52 (11)	29.00 (98.12)
10th Gear									
174.83 (130.37)	10785 (47.97)	6.08 (9.78)	1947	2.38	0.433 (0.264)	15.95 (3.14)	188 (87)	52 (11)	29.01 (98.24)
11th Gear									
172.83 (128.88)	9219 (41.01)	7.03 (11.31)	1949	2.29	0.438 (0.267)	15.78 (3.11)	189 (87)	53 (12)	29.02 (98.27)
12th Gear									
179.11 (133.56)	8509 (37.85)	7.89 (12.70)	1953	1.93	0.424 (0.258)	16.32 (3.22)	188 (87)	54 (12)	29.04 (98.34)
13th Gear									
173.13 (129.10)	6622 (29.45)	9.80 (15.78)	1956	1.74	0.437 (0.266)	15.83 (3.12)	188 (87)	57 (14)	29.06 (98.41)

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 return was maintained at 141° F (61° C). This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. This tractor did not meet manufacturers 3 point lift capacity claim of 9710 lb (4404 kg). The pull in 3rd gear (ballasted tractor) was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

Report reissued. Supplemental sales permit for John Deere 4960 Powershift Diesel, November, 1991.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1622**, Summary 060, December 22, 1989.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

R. D. GRISSO

L. L. BASHFORD

Board of Tractor Test Engineers

DRAWBAR PERFORMANCE AT 2200 RPM

MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.*F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3rd Gear									
147.00 (109.62)	23742 (105.61)	2.32 (3.74)	2268	8.97	0.479 (0.291)	14.44 (2.84)	184 (84)	50 (10)	28.83 (97.63)
4th Gear									
167.25 (124.72)	21627 (96.20)	2.90 (4.67)	2200	6.79	0.460 (0.280)	15.04 (2.96)	186 (86)	53 (12)	28.84 (97.66)
5th Gear									
170.97 (127.49)	18770 (83.49)	3.42 (5.50)	2203	4.68	0.446 (0.271)	15.49 (3.05)	187 (86)	53 (12)	28.85 (97.70)
6th Gear									
173.51 (129.38)	16639 (74.01)	3.91 (6.29)	2202	3.99	0.440 (0.268)	15.70 (3.09)	186 (85)	63 (17)	28.66 (97.05)
7th Gear									
171.86 (128.15)	14254 (63.40)	4.52 (7.28)	2197	3.37	0.445 (0.270)	15.55 (3.06)	186 (86)	65 (18)	28.67 (97.09)
8th Gear									
167.25 (124.72)	11969 (53.24)	5.24 (8.43)	2201	2.74	0.457 (0.278)	15.14 (2.98)	186 (86)	60 (16)	28.66 (97.05)
9th Gear									
166.96 (124.50)	10347 (46.02)	6.05 (9.74)	2199	2.29	0.455 (0.277)	15.18 (2.99)	187 (86)	52 (11)	29.00 (98.21)
10th Gear									
167.80 (125.13)	9131 (40.61)	6.89 (11.09)	2201	2.02	0.455 (0.277)	15.18 (2.99)	187 (86)	52 (11)	29.01 (98.24)
11th Gear									
166.86 (124.42)	7864 (34.98)	7.96 (12.81)	2200	1.93	0.458 (0.279)	15.08 (2.97)	188 (86)	54 (12)	29.03 (98.31)
12th Gear									
170.68 (127.27)	7181 (31.94)	8.91 (14.34)	2200	1.83	0.447 (0.272)	15.47 (3.05)	186 (86)	56 (13)	29.05 (98.37)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Gear closest to 4.7 mph (7.5 km/h)—7th Gear	76.5
Maximum sound level	77.5
Transport speed—no load—15th Gear	79.0
Bystander in 15th Gear	87.0

LUGGING ABILITY IN 10th GEAR

Crankshaft Speed rpm	2201	1981	1760	1539	1323	1104
Pull—lbs (kN)	9131 (40.61)	10579 (47.06)	11754 (52.28)	12731 (56.63)	12792 (56.90)	10434 (46.41)
Increase in Pull %	0	16	29	39	40	14
Power—Hp (kW)	167.80 (125.13)	174.63 (130.22)	171.96 (128.23)	162.45 (121.14)	140.26 (104.59)	95.90 (71.51)
Speed—Mph (km/h)	6.89 (11.09)	6.19 (9.96)	5.49 (8.83)	4.79 (7.70)	4.11 (6.62)	3.45 (5.55)
Slip %	2.02	2.29	2.47	2.83	2.83	2.47

TIRES AND WEIGHT

	With Ballast	Without Ballast
Rear Tires —No., size, ply & psi (kPa)	Four 20.8R42; **, 12 (85)	Two 20.8R42; **, 16 (110)
Ballast —Duals (total)	1950 lb (885 kg)	None
—Cast Iron (total)	2000 lb (907 kg)	None
Front Tires —No., size, ply & psi (kPa)	Two 16.9R30; ***, 24 (165)	Two 16.9R30; ***, 24 (165)
Ballast —Test Equip (total)	245 lb (111 kg)	None
—Cast Iron (total)	2100 lb (953 kg)	None
Height of Drawbar	20 in (510 mm)	19.0 in (485 mm)
Static Weight —Rear	15335 lb (6956 kg)	11830 lb (5366 kg)
—Front	9330 lb (4232 kg)	6540 lb (2966 kg)
—Total	24665 lb (11188 kg)	18370 lb (8332 kg)

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi. (bar)	2550 (176)				
Location	remote outlet				
Hydraulic oil temperature °F(°C)	124 (51)				
Location	transmission sump				
Category	III				
Quick attach	Yes				
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb. (kN)	9860 (43.9)	10570 (47.0)	10854 (48.3)	10224 (45.5)	9411 (41.9)
with 1-55 mm lift assist cylinder					
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb. (kN)	10518 (46.8)	11434 (50.9)	11576 (51.5)	10737 (47.8)	10041 (44.7)
with 2-44 mm lift assist cylinders					
Hitch point distance to ground level in. (mm)	9.0 (229)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb. (kN)	11373 (50.6)	11972 (53.3)	12216 (54.3)	11617 (51.7)	10651 (47.4)
with 2-55 mm lift assist cylinders					
Hitch point distance to ground level in. (mm)	9.1 (231)	16.0 (406)	25.0 (635)	33.0 (838)	40.0 (1016)
Lift force on frame lb. (kN)	12534 (55.8)	13426 (59.7)	13720 (61.0)	12729 (56.6)	11773 (52.4)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: Yes

Maximum Force Exerted Through Whole Range:

6614 lbs	(29.4 kN)
*7057 lbs	(31.4 kN)
**7486 lbs	(33.3 kN)
***8274 lbs	(36.8 kN)

i) Opening pressure of relief valve:

NA

Sustained pressure with pump stalled

2550 psi (176 Bar)

ii) Pump delivery rate at minimum pressure:

30.6 GPM (115.8 l/min)

iii) Pump delivery rate at maximum

hydraulic power:

29.6 GPM (112.0 l/min)

Delivery pressure:

1750 psi (121 Bar)

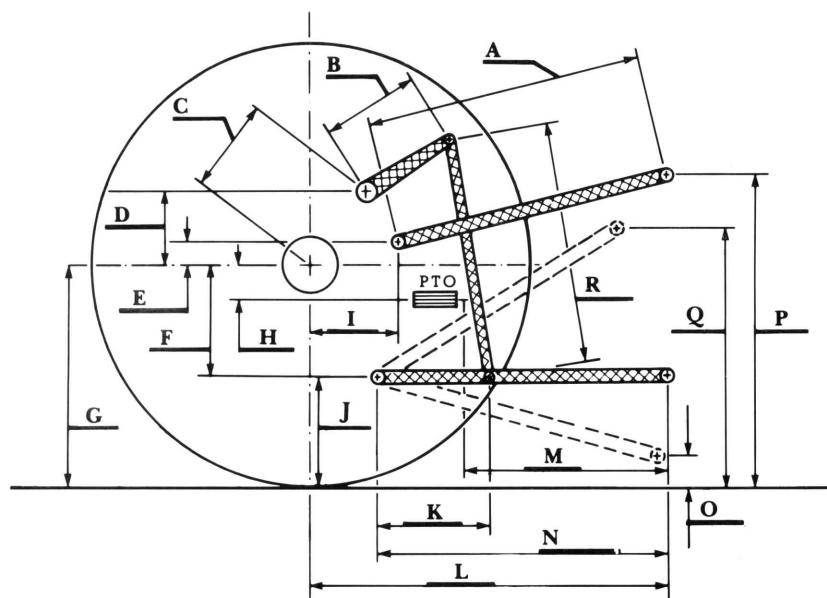
Power:

30.2 Hp (22.5 kW)

*with 1-55 mm lift assist cylinder

**with 2-44 mm lift assist cylinders

***with 2-55 mm lift assist cylinders



HITCH DIMENSIONS AS TESTED—NO LOAD



John Deere 4955 Powershift Diesel

	inch	mm
A	28.1	714
B	18.4	468
C	12.9	327
D	12.9	327
E	6.8	172
F	13.0	330
G	36.1	918
H	7.0	177
I	15.1	384
J	23.1	588
K	28.2	716
L	44.3	1124
L'	49.3	1251
M	22.3	565
N	38.1	968
O	10.1	257
P	45.1	1146
Q	42.5	1080
R	37.3	946
L' to end of Quick Attach		