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Test 1606: John Deere 2955 Diesel 16 and 8-Speed (TSS Transmission)

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1606—JOHN DEERE 2955 DIESEL 16 SPEED ALSO 8 SPEED (TSS TRANSMISSION)

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			Barometer inch Hg (kPa)
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 1058 rpm)								
86.22 (64.29)	2300	5.017 (18.992)	0.406 (0.247)	17.18 (3.385)	200 (93.1)	55 (12.5)	75 (23.9)	29.24 (98.72)
Standard Power Take-off Speed (1000 rpm) — One Hour								
85.54 (63.78)	2173	4.913 (18.596)	0.401 (0.244)	17.41 (3.430)	201 (93.6)	55 (12.8)	75 (23.9)	29.16 (98.47)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
75.73 (56.47)	2375	4.597 (17.402)	0.423 (0.258)	16.47 (3.245)	194 (89.7)	55 (12.8)	75 (23.9)	..... .....
0.00 (0.00)	2463	1.664 (6.300)	..... .....	..... .....	179 (81.7)	56 (13.1)	75 (23.9)	..... .....
38.45 (28.67)	2416	2.980 (11.281)	0.541 (0.329)	12.90 (2.541)	185 (85.0)	55 (12.8)	75 (23.9)	..... .....
86.28 (64.34)	2299	4.997 (18.916)	0.404 (0.246)	17.27 (3.401)	200 (93.1)	56 (13.1)	75 (23.9)	..... .....
19.42 (14.48)	2435	2.357 (8.921)	0.846 (0.515)	8.24 (1.624)	181 (82.8)	55 (12.8)	75 (23.9)	..... .....
57.23 (42.68)	2395	3.741 (14.163)	0.456 (0.277)	15.30 (3.014)	187 (85.8)	55 (12.8)	75 (23.9)	..... .....
Av Av	46.19 (34.44)	2397 (12.831)	3.389 (0.311)	0.512 (2.684)	13.63 (86.3)	187 (12.9)	55 (23.9)	75 (98.23)

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)	
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb		
Maximum Available Power — Two Hours 10th(5H) Gear												
72.99 (54.43)	5051 (22.47)	5.42 (8.72)	2300	4.55	4.924 (18.639)	0.471 (0.286)	14.82 (2.920)	189 (86.9)	40 (4.2)	44 (6.7)	28.80 (97.24)	
75% of Pull at Maximum Power — Ten Hours 10th(5H) Gear												
58.50 (43.62)	3851 (17.13)	5.70 (9.17)	2391	3.54	4.242 (16.057)	0.506 (0.308)	13.79 (2.717)	185 (84.7)	32 (-0.2)	34 (0.8)	28.62 (96.64)	
50% of Pull at Maximum Power — Two Hours 10th(5H) Gear												
39.61 (29.54)	2550 (11.34)	5.83 (9.38)	2412	2.17	3.405 (12.888)	0.600 (0.365)	11.64 (2.292)	183 (83.6)	35 (1.4)	37 (2.8)	28.80 (97.25)	
50% of Pull at Reduced Engine Speed — Two Hours 12th(6H) Gear												
39.66 (29.57)	2552 (11.35)	5.83 (9.38)	1609	2.26	2.767 (10.473)	0.487 (0.296)	14.33 (2.824)	182 (83.1)	40 (4.2)	44 (6.4)	28.69 (96.86)	
MAXIMUM POWER IN SELECTED GEARS												
64.95 (48.43)	9971 (44.35)	2.44 (3.93)	2343	14.94	5th(3L) Gear			185 (84.7)	33 (0.6)	37 (2.8)	28.83 (97.35)	
71.51 (53.33)	8179 (36.38)	3.28 (5.28)	2301	8.70	6th(3H) Gear			187 (85.8)	35 (1.7)	40 (4.4)	28.83 (97.35)	
72.54 (54.09)	7198 (32.02)	3.78 (6.08)	2298	7.31	7th(4L) Gear			188 (86.4)	35 (1.7)	40 (4.4)	28.82 (97.32)	
73.12 (54.52)	6568 (29.21)	4.17 (6.72)	2296	6.33	8th(5L) Gear			188 (86.7)	35 (1.7)	40 (4.4)	28.82 (97.32)	
73.50 (54.81)	5595 (24.89)	4.93 (7.93)	2300	5.02	9th(4H) Gear			187 (86.1)	36 (2.2)	40 (4.4)	28.81 (97.29)	
74.20 (55.33)	5134 (22.84)	5.42 (8.72)	2300	4.55	10th(5H) Gear			189 (87.2)	39 (3.9)	43 (6.1)	28.80 (97.25)	
72.63 (54.16)	4220 (18.77)	6.45 (10.39)	2300	3.60	11th(6L) Gear			186 (85.6)	36 (2.2)	41 (5.0)	28.82 (97.32)	
71.43 (53.27)	3232 (14.37)	8.29 (13.34)	2299	2.63	12th(6H) Gear			188 (86.7)	35 (1.7)	40 (4.4)	28.82 (97.32)	

Department of Agricultural Engineering

Dates of Test: November 10 to 20, 1986

Manufacturer: JOHN DEERE WERKE MANN-HEIM, 6800 Mannheim, Windeck str. 90 West Germany

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 49.5 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F (15/15°C)** 0.8378 **Fuel weight** 6.976 lbs/gal (0.836 kg/l) **Oil SAE 15W40 API service classification** CD, CC, SD **To motor** 2.863 gal (10.836 l) **Drained from motor** 2.424 gal (9.178 l) **Transmission and final drive lubricant** John Deere Hy-Gard transmission and hydraulic fluid **Front axle lubricant** John Deere GL-5 gear lubricant **Total time engine was operated** 36.5 hours.

ENGINE: Make John Deere Diesel Type six cylinder vertical **Serial No.** *CD6359D714160* **Crankshaft** lengthwise **Rated rpm** 2300 **Bore and stroke** 4.19" × 4.33" (106.5 mm × 110 mm) **Compression ratio** 17.8 to 1 **Displacement** 359 cu in (5883 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 **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** two thermostats and variable speed fan.

CHASSIS: Type front wheel assist **Serial No.** *L02955U600184* **Tread width** rear 62.2" (1580 mm) to 94.9" (2410 mm) front 63" (1600 mm) to 83" (2100 mm) **Wheel base** 101.7" (2582 mm) **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 35.6" (905 mm) Vertical distance above roadway 38.9" (988 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Advertised speeds mph (km/h)** first 1.2 (1.9) second 1.5 (2.4) third 1.8 (2.9) fourth 2.3 (3.7) fifth 2.7 (4.4) sixth 3.5 (5.6) seventh 4.0 (6.4) eighth 4.4 (7.0) ninth 5.1 (8.2) tenth 5.5 (8.9) eleventh 6.5 (10.5) twelfth 8.3 (13.4) thirteenth 10.1 (16.2) fourteenth 12.8 (20.6) fifteenth 14.6 (23.4) sixteenth 18.5 (29.8) reverse 1.9 (3.0), 2.4 (3.9), 2.8 (4.6), 3.6 (5.8), 4.4 (7.0), 5.6 (9.0), 6.3 (10.2), 8.0 (12.9) **Clutch** single dry disc hydraulically actuated and operated by foot pedal **Brakes** wet disc hydraulically actuated and operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete

LUGGING ABILITY IN 10th(5H) GEAR

Crankshaft Speed rpm	2300	2072	1840	1611	1378	1149
Pull—lbs (kN)	5134 (22.84)	5732 (25.50)	6364 (28.31)	6837 (30.41)	6996 (31.12)	6815 (30.31)
Increase in Pull %	0	12	24	33	36	33
Power—Hp (kW)	74.20 (55.33)	74.09 (55.25)	72.40 (53.99)	67.62 (50.42)	59.03 (44.02)	48.02 (35.81)
Speed—Mph (km/h)	5.42 (8.72)	4.85 (7.80)	4.27 (6.87)	3.71 (5.97)	3.16 (5.09)	2.64 (4.25)
Slip %	4.55	5.34	6.10	6.71	7.01	7.01

TRACTOR SOUND LEVEL WITH CAB

	Front Wheel Drive Disengaged dB(A)	Engaged dB(A)
Maximum Available Power—Two Hours	77.0	77.5
75% of Pull at Maximum Power—Ten Hours		77.0
50% of Pull at Maximum Power—Two Hours		76.0
50% of Pull at Reduced Engine Speed—Two Hours		72.5
Bystander in 16th(8H) gear	90.0	

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool- ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 10th(5H) Gear											
71.48 (53.30)	5095 (22.66)	5.26 (8.47)	2300	6.87	4.938 (18.694)	0.482 (0.293)	14.47 (2.851)	191 (88.1)	41 (5.0)	47 (8.3)	28.71 (96.93)

MAXIMUM POWER IN SELECTED GEARS

65.62 (48.93)	7938 (35.31)	3.10 (4.99)	2337	14.66	6th(3H) Gear			187 (85.8)	34 (1.1)	39 (3.9)	28.83 (97.35)
72.82 (54.30)	5175 (23.02)	5.28 (8.49)	2300	6.57	10th(5H) Gear			188 (86.7)	37 (2.8)	42 (5.6)	28.81 (97.29)

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires	Two 18.4-38; 8; 16 (110)	Two 18.4-38; 8; 16 (110)
Ballast	None	None
—Test Equip. (each)	52 lb (24 kg)	None
Front Tires	Two 13.6-28; 8; 14 (95)	Two 13.6-28; 8; 14 (95)
Ballast	None	None
—Test Equip. (each)	13 lb (6 kg)	None
Height of Drawbar	22.5 in (570 mm)	22.5 in (570 mm)
Static Weight with Operator—Rear	7390 lb (3352 kg)	7285 lb (3305 kg)
—Front	3760 lb (1706 kg)	3735 lb (1694 kg)
—Total	11150 lb (5058 kg)	11020 lb (4999 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2350 (16200)		
Location	remote outlet		
Hydraulic oil temperature °F (°C)	161 (72)		
Location	pump inlet		
	Maximum Lift Capacity	Lift Capacity for Transport	
QUICK ATTACH CATEGORY	no II	no II	
LOAD lbs (kg)	5235 (2375)	3250 (1474)	
TIME sec	6.14	2.36	
HITCH POINT MOVEMENT in (mm)			
Lowest position	15.1 (384)	8.0 (203)	
Top of time range	36.1 (917)	28.4 (721)	
Highest position	*36.1 (917)	28.4 (721)	
LOAD CG MOVEMENT IN (mm)			
Lowest position	14.4 (366)	7.5 (191)	
Top of timed range	39.4 (1001)	29.4 (747)	
Highest position	39.3 (998)	29.4 (747)	

*The observed power range, 21 in. (533 mm) is less than the minimum power range for Cat II, 24 in. (610 mm) specified by ASAE Standard S217.10

surface with brake applied) right 162" (4.1 m) left 162" (4.1 m)(on concrete surface without brake) right 169" (4.3 m) left 169" (4.3 m) **Turning space diameter** (on concrete surface with brake applied) right 338" (8.6 m) left 338" (8.6 m)(on concrete surface without brake) right 350" (8.9 m) left 350" (8.9 m) **Power take-off** 540 rpm at 2071 engine rpm and 1000 rpm at 2173 engine rpm **Unladen tractor mass** 10845 lb (4919 kg).

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

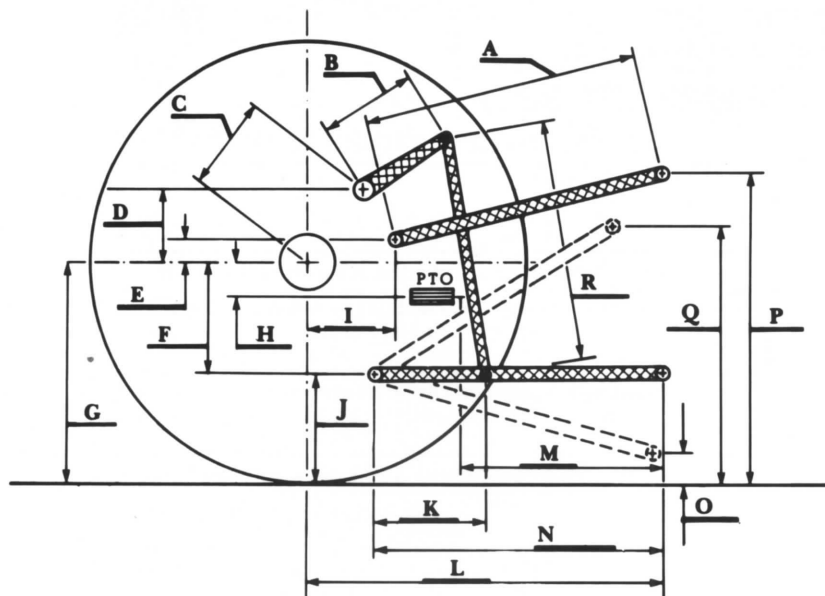
REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 143°F (61.6°C). Eight gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. 1606, December 12, 1986.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD

Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	28.0	711
B	11.0	280
C	13.2	336
D	13.2	336
E	6.2	158
F	9.9	251
G	32.4	823
H	2.8	71
I	14.6	371
J	22.5	572
K	24.5	623
L	42.8	1088
M	22.3	567
N	38.3	973
O	8.0	203
P	41.5	1054
Q	31.0	787
R	35.8	908



John Deere 2955 Diesel