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Test 1281: John Deere 950 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1281 — JOHN DEERE 950 DIESEL

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—574 rpm)								
27.36 (20.40)	2401	1.838 (6.956)	0.467 (0.284)	14.89 (2.933)	206 (96.6)	62 (16.7)	75 (23.9)	29.170 (98.503)
Standard Power Take-off Speed (540 rpm)—One Hour								
28.05 (20.92)	2258	1.911 (7.234)	0.473 (0.288)	14.68 (2.892)	213 (100.6)	62 (16.7)	75 (23.8)	29.150 (98.435)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
24.28 (18.11)	2505	1.645 (6.226)	0.471 (0.286)	14.76 (2.908)	196 (91.1)	62 (16.7)	75 (23.9)	..... (22.26)
0.00 (0.00)	2586	0.531 (2.010)	..... (0.000)	..... (0.000)	160 (70.8)	62 (16.7)	75 (23.9)	..... (22.26)
12.38 (9.23)	2555	1.053 (3.988)	0.591 (0.360)	11.76 (2.316)	172 (77.5)	62 (16.7)	76 (24.7)	..... (22.26)
28.02 (20.90)	2400	1.895 (7.174)	0.470 (0.286)	14.78 (2.913)	206 (96.4)	62 (16.7)	78 (25.3)	..... (22.26)
6.23 (4.65)	2570	0.773 (2.925)	0.862 (0.524)	8.06 (1.589)	165 (73.9)	62 (16.7)	76 (24.4)	..... (22.26)
18.40 (13.72)	2533	1.330 (5.033)	0.502 (0.305)	13.84 (2.726)	184 (84.2)	62 (16.7)	78 (25.3)	..... (22.26)
Av Av	14.98 (11.10)	1.204 (4.559)	0.562 (0.342)	12.36 (2.435)	180 (82.3)	62 (16.7)	76 (24.6)	29.163 (98.480)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		Cool- ing med	Temp. °F (°C)		Barom. inch Hg (kPa)	
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)		Hp.hr/gal (kW.h/l)	Air wet bulb		Air dry bulb
Maximum Available Power—Two Hours 6th Gear											
22.12 (16.49)	1663 (7.40)	4.99 (8.03)	2401	6.45	1.781 (6.741)	0.559 (0.340)	12.42 (2.447)	212 (99.7)	76 (24.2)	85 (29.2)	28.880 (97.523)
75% of Pull at Maximum Power—Ten Hours 6th Gear											
18.78 (14.01)	1332 (5.93)	5.29 (8.51)	2506	5.01	1.536 (5.815)	0.568 (0.346)	12.23 (2.409)	201 (94.0)	74 (23.3)	86 (30.0)	28.716 (96.970)
50% of Pull at Maximum Power—Two Hours 6th Gear											
12.63 (9.42)	867 (3.85)	5.46 (8.79)	2542	3.25	1.187 (4.494)	0.653 (0.397)	10.63 (2.095)	188 (86.9)	81 (27.2)	92 (33.1)	28.855 (97.439)
50% of Pull at Reduced Engine Speed—Two Hours 7th Gear											
12.92 (9.64)	887 (3.95)	5.46 (8.79)	1718	3.22	0.971 (3.677)	0.522 (0.318)	13.31 (2.621)	204 (95.8)	84 (28.6)	94 (34.4)	28.815 (97.304)
MAXIMUM POWER IN SELECTED GEARS											
18.09 (13.49)	3056 (13.59)	2.22 (3.57)	2529	14.88	4th Gear		176 (80.0)	65 (18.3)	71 (21.7)	28.950 (97.760)	
22.69 (16.92)	2553 (11.36)	3.33 (5.36)	2399	10.67	5th Gear		210 (98.6)	70 (21.1)	77 (25.0)	28.920 (97.659)	
23.46 (17.49)	1767 (7.86)	4.98 (8.01)	2400	6.61	6th Gear		205 (95.8)	67 (19.4)	74 (23.3)	28.940 (97.726)	
23.12 (17.24)	1148 (5.11)	7.55 (12.15)	2400	4.14	7th Gear		205 (95.8)	72 (22.2)	80 (26.7)	28.910 (97.625)	
LUGGING ABILITY IN RATED GEAR 6th											
Crankshaft Speed rpm			2400	2159	1922	1682	1448	1207			
Pull—lbs (kN)			1767 (7.86)	1952 (8.68)	2033 (9.04)	2035 (9.05)	2048 (9.11)	1997 (8.88)			
Increase in Pull %			0	10	15	15	16	13			
Power—Hp (kW)			23.46 (17.49)	23.09 (17.22)	21.34 (15.91)	18.69 (13.94)	16.17 (12.06)	13.18 (9.83)			
Speed—Mph (km/h)			4.98 (8.01)	4.44 (7.14)	3.94 (6.33)	3.44 (5.54)	2.96 (4.77)	2.48 (3.98)			
Slip %			6.61	7.55	7.75	7.96	7.96	7.65			

Department of Agricultural Engineering

Dates of Test: June 12-16, 1978

Manufacturer: YANMAR DIESEL CO., LTD.,
Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel
Cetane No. 50.4 (rating taken from oil company's
typical inspection data) **Specific gravity converted
to 60°60° (15°/15°) 0.8346 Fuel weight 6.949 lbs/
gal (0.835 kg/l) Oil SAE 30 API service classifi-
cation CC CD SD To motor 1.445 gal (5.470 l)
Drained from motor 1.268 gal (4.800 l) Transmis-
sion and final drive lubricant John Deere Hy
Gard Total time engine was operated 35 hours.**

ENGINE: Make Yanmar Diesel Type 3 cylinder
vertical Serial No. 3T90J-81774 Crankshaft
lengthwise Rated rpm 2400 Bore and stroke 3.54"
x 3.54" (90 mm x 90 mm) Compression ratio 20.4 to
1 Displacement 105 cu in (1717 ml) Cranking
System 12 volt Lubrication pressure Air cleaner
one paper element Oil filter one screw on paper
cartridge Fuel filter one paper element Muffler
vertical Cooling medium temperature control
thermostat.

CHASSIS: Type standard Serial No. 950
S002894 Tread width rear 45" (1140 mm) to 59"
(1510 mm) front 45" (1140 mm) to 57" (1440 mm)
Wheel base 69" (1750 mm) Center of gravity (with-
out operator or ballast, with minimum tread, with
fuel tank filled and tractor serviced for operation)
Horizontal distance forward from center-line of
rear wheels 25.7" (653 mm) Vertical distance above
roadway 27.6" (703 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 **Adver-
tised speeds mph (km/h)** first 0.8 (1.3) second 1.2
(1.9) third 1.7 (2.8) fourth 2.6 (4.1) fifth 3.9 (6.2)
sixth 5.5 (8.9) seventh 8.2 (13.1) eighth 12.1 (19.3)
reverse 1.2 (1.9), 5.5 (8.9) **Clutch** single dry disc
operated by foot pedal **Brakes** internal expanding
shoe operated by two foot pedals which can be
locked together **Steering** mechanical **Turning
radius** (on concrete surface with brake applied)
right 100.4" (2.55 m) left 100.4" (2.55 m) (on con-
crete surface without brake) right 108.3" (2.75 m)
left 108.7" (2.76 m) **Turning space diameter** (on
concrete surface with brake applied) right 205.8"
(5.23 m) left 205.8" (5.23 m) (on concrete surface
without brake) right 221.6" (5.63 m) left 222.4"
(5.65 m) **Power take-off** 540 rpm at 2258 engine
rpm.

REPAIRS and ADJUSTMENTS: No repairs or
adjustments.

REMARKS: All test results were determined
from observed data obtained in accordance with
SAE and ASAE test code or official Nebraska test
procedure. Temperature at injection pump was
160°F (71.4°C). Four gears were chosen between
15% slip and 10 mph (16.1 km/h).

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours	89.0
75% of Pull at Maximum Power—Ten Hours	89.0
50% of Pull at Maximum Power—Two Hours	88.5
50% of Pull at Reduced Engine Speed—Two Hours	85.5
Bystander in 8th gear	77.0

TIRES, BALLAST AND WEIGHT	With Ballast	Without Ballast
Rear Tires		
—No., size, ply & psi (kPa)	Two 12.4-28; 4; 14 (95)	Two 12.4-28; 4; 14 (95)
Ballast	360 lb (163 kg)	None
—Liquid (each)	None	None
—Cast Iron (each)	None	None
Front Tires		
—No., size, ply & psi (kPa)	Two 5.50-16; 4; 40 (270)	Two 5.50-16; 4; 40 (270)
Ballast	None	None
—Liquid (each)	None	None
—Cast Iron (each)	42 lb (19 kg)	None
Height of Drawbar	15.5 in (395 mm)	15.5 in (395 mm)
Static Weight with Operator—Rear	2475 lb (1122 kg)	1756 lb (796 kg)
—Front	1140 lb (517 kg)	1056 lb (479 kg)
—Total	3615 lb (1639 kg)	2812 lb (1275 kg)

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1281**.

L. I. LEVITICUS

Engineer-in-Charge

G. W. STEINBRUEGGE

W. E. SPLINTER

K. VON BARGEN

Board of Tractor Test Engineers



John Deere 950 Diesel