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Test 1472: John Deere 2750 Diesel 16-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1472 — JOHN DEERE 2750 DIESEL 16 SPEED

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—566 rpm)								
75.35 (56.19)	2500	4.847 (18.348)	0.451 (0.274)	15.55 (3.062)	192 (89.2)	56 (13.4)	75 (23.8)	28.530 (96.342)
Standard Power Take-off Speed (540 rpm)—One Hour								
75.07 (55.98)	2384	4.660 (17.640)	0.435 (0.265)	16.11 (3.173)	191 (88.6)	56 (13.3)	75 (23.9)	28.520 (96.308)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
65.80 (49.07)	2570	4.395 (16.637)	0.468 (0.285)	14.97 (2.949)	188 (86.7)	54 (12.2)	73 (22.8)	.....
0.00 (0.00)	2666	1.596 (6.042)	.....	.....	181 (82.8)	55 (12.8)	74 (23.1)	.....
33.64 (25.09)	2623	2.944 (11.144)	0.614 (0.373)	11.42 (2.251)	184 (84.2)	55 (12.8)	74 (23.1)	.....
75.13 (56.02)	2502	4.806 (18.193)	0.448 (0.273)	15.63 (3.079)	192 (88.9)	57 (13.9)	77 (25.0)	.....
16.93 (12.62)	2642	2.272 (8.600)	0.941 (0.572)	7.45 (1.467)	182 (83.3)	56 (13.3)	76 (24.2)	.....
49.86 (37.18)	2594	3.625 (13.722)	0.510 (0.310)	13.76 (2.710)	184 (84.7)	55 (12.8)	74 (23.1)	.....
Av	40.23	2599	3.273	0.570	12.29	55	74	28.540
Av	(30.00)		(12.390)	(0.347)	(2.421)	(85.1)	(12.9)	(23.5)
								(96.375)

DRAWBAR PERFORMANCE

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 9th (5L) Gear											
62.97 (46.95)	4984 (22.17)	4.74 (7.62)	2503	8.08	4.797 (18.158)	0.534 (0.325)	13.13 (2.586)	191 (88.1)	56 (13.1)	68 (20.0)	28.885 (97.540)
75% of Pull at Maximum Power—Ten Hours 9th (5L) Gear											
50.44 (37.62)	3782 (16.82)	5.00 (8.05)	2571	5.54	4.076 (15.431)	0.566 (0.345)	12.37 (2.438)	189 (87.1)	58 (14.6)	67 (19.7)	28.879 (97.520)
50% of Pull at Maximum Power—Two Hours 9th (5L) Gear											
34.87 (26.01)	2522 (11.22)	5.19 (8.35)	2614	3.69	3.317 (12.555)	0.667 (0.406)	10.51 (2.071)	188 (86.7)	59 (15.0)	73 (22.8)	28.850 (97.422)
50% of Pull at Reduced Engine Speed—Two Hours 12th (6H) Gear											
34.87 (26.00)	2522 (11.22)	5.18 (8.34)	1484	3.55	2.354 (8.910)	0.473 (0.288)	14.81 (2.918)	187 (85.8)	60 (15.6)	74 (23.3)	28.820 (97.321)
MAXIMUM POWER IN SELECTED GEARS											
52.37 (39.05)	7581 (33.72)	2.59 (4.17)	2550	14.83	5th (3L) Gear			188 (86.7)	54 (12.2)	59 (15.0)	28.850 (97.422)
59.69 (44.51)	6722 (29.90)	3.33 (5.36)	2500	12.34	6th (3H) Gear			189 (87.2)	50 (10.0)	59 (15.0)	28.910 (97.625)
61.24 (45.66)	6422 (28.57)	3.58 (5.75)	2499	11.07	7th (4L) Gear			189 (86.9)	50 (10.0)	59 (15.0)	28.920 (97.659)
62.87 (46.89)	4995 (22.22)	4.72 (7.60)	2500	7.86	8th (4H) Gear			189 (86.9)	49 (9.4)	58 (14.4)	28.920 (97.659)
63.98 (47.71)	5049 (22.46)	4.75 (7.65)	2497	7.54	9th (5L) Gear			190 (87.5)	58 (14.4)	61 (16.1)	28.910 (97.625)
63.53 (47.37)	3863 (17.18)	6.17 (9.92)	2500	5.87	10th (5H) Gear			189 (87.2)	50 (10.0)	60 (15.6)	28.910 (97.625)
63.86 (47.62)	3561 (15.84)	6.72 (10.82)	2498	5.41	11th (6L) Gear			189 (87.2)	51 (10.6)	61 (16.1)	28.900 (97.591)
63.40 (47.28)	2735 (12.16)	8.69 (13.99)	2501	4.00	12th (6H) Gear			189 (87.2)	52 (11.1)	63 (17.2)	28.900 (97.591)

Department of Agricultural Engineering

Dates of Test: April 11 to May 11, 1983

Manufacturer: JOHN DEERE WERKE MANN-HEIM, Mannheim, West Germany

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 47.0 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60° (15°/15°) 0.8420 Fuel weight 7.010 lbs/gal (0.840 kg/l) Oil SAE 15W-40 API service classification CD, CC, SD To motor 1.826 gal (6.913 l) Drained from motor 1.333 gal (5.047 l) Transmission and final drive lubricant John Deere Hy-Gard transmission and hydraulic fluid Total time engine was operated 41.0 hours.

ENGINE: Make John Deere Diesel Type four cylinder vertical with turbocharger Serial No. 4239TL05556351CD Crankshaft lengthwise Rated rpm 2500 Bore and stroke 4.19" x 4.33" (106.5 mm x 110 mm) Compression ratio 16.8 to 1 Displacement 239 cu in (3920 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 one mesh strainer Muffler underhood Exhaust vertical Cooling medium temperature control one thermostat.

CHASSIS: Type standard Serial No. *L02750T466901* Tread width rear 65.4" (1660 mm) to 96.1" (2440 mm) front 59.4" (1510 mm) to 77.2" (1962 mm) Wheel base 89.2" (2266 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 29.1" (739 mm) Vertical distance above roadway 33.5" (851 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 1.5 (2.4) second 1.9 (3.1) third 2.1 (3.3) fourth 2.6 (4.3) fifth 3.0 (4.8) sixth 3.8 (6.1) seventh 4.0 (6.5) eighth 5.1 (8.3) ninth 5.1 (8.3) tenth 6.6 (10.6) eleventh 7.1 (11.5) twelfth 9.1 (14.6) thirteenth 10.2 (16.5) fourteenth 13.0 (21.0) fifteenth 13.8 (22.2) sixteenth 17.6 (28.3) reverse 2.3 (3.7), 2.9 (4.7), 3.2 (5.1), 4.1 (6.5), 4.6 (7.4), 5.8 (9.4), 6.2 (10.0), 7.9 (12.7) Clutch single dry disc 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 surface with brake applied) right 131.0" (3.33 m) left 131.0" (3.33 m) (on concrete surface without brake) right 150" (3.81 m) left 150" (3.81 m) Turning space diameter (on concrete surface with brake applied) right 274.0" (6.96 m) left 274.0" (6.96 m) (on concrete surface without brake) right 310.0" (7.87 m) left 310.0" (7.87 m) Power take-off 540 rpm at 2384 engine rpm.

LUGGING ABILITY IN 9th (5L) GEAR

Crankshaft Speed rpm	2497	2251	2005	1749	1503	1251
Pull—lbs (kN)	5049 (22.46)	5439 (24.19)	5745 (25.56)	5816 (25.87)	5654 (25.15)	5529 (24.59)
Increase in Pull %	0	8	14	15	12	10
Power—Hp (kW)	63.98 (47.71)	61.65 (45.98)	57.61 (42.96)	50.75 (37.84)	42.53 (31.71)	34.62 (25.82)
Speed—Mph (km/h)	4.75 (7.65)	4.25 (6.84)	3.76 (6.05)	3.27 (5.27)	2.82 (4.54)	2.35 (3.78)
Slip %	7.54	8.30	9.04	9.16	8.91	8.67

TRACTOR SOUND LEVEL WITHOUT CAB

	dB(A)
Maximum Available Power—Two Hours	93.0
75% of Pull at Maximum Power—Ten Hours	93.5
50% of Pull at Maximum Power—Two Hours	93.5
50% of Pull at Reduced Engine Speed—Two Hours	89.5
Bystander in 16th (8H) gear	85.0

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires		
—No., size, ply & psi (kPa)	Two 18.4-30; 6; 16 (110)	Two 18.4-30; 6; 16 (110)
Ballast	1032 lb (468 kg)	None
—Liquid (each)	None	None
—Cast Iron (each)	None	None
Front Tires		
—No., size, ply & psi (kPa)	Two 10.00-16; 6; 32 (220)	Two 10.00-16; 6; 32 (220)
Ballast	None	None
—Liquid (each)	30 lb (14 kg)	None
—Cast Iron (each)	None	None
Height of Drawbar	19.5 in (495 mm)	19.5 in (495 mm)
Static Weight with Operator —Rear	7175 lb (3255 kg)	5110 lb (2318 kg)
—Front	2450 lb (1111 kg)	2390 lb (1084 kg)
—Total	9625 lb (4366 kg)	7500 lb (3402 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 or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 142°F (61.1°C). Eight gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1472**.

LOUIS I. LEVITICUS

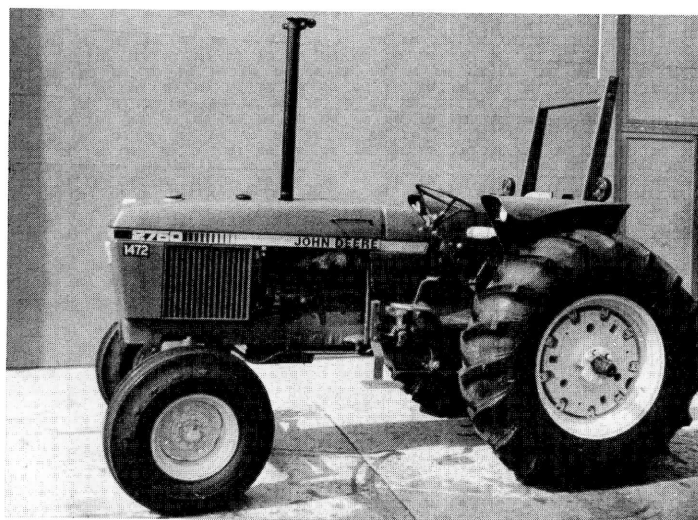
Engineer-in-Charge

K. VON BARGEN

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Board of Tractor Test Engineers



John Deere 2750 Diesel

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