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Test 1313: International 584 Utility / Row Crop Diesel 8-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1313 — INTERNATIONAL 584 UTILITY DIESEL ALSO INTERNATIONAL 584 ROWCROP DIESEL 8 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—580 rpm)								
52.54 (39.18)	2300	3.489 (13.208)	0.465 (0.283)	15.06 (2.966)	188 (86.5)	61 (16.2)	75 (23.9)	29.137 (98.390)
Standard Power Take-off Speed (540 rpm)—One Hour								
50.96 (38.00)	2140	3.345 (12.663)	0.459 (0.279)	15.23 (3.001)	190 (87.6)	62 (16.7)	77 (25.1)	29.140 (98.401)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
46.33 (34.55)	2386	3.101 (11.738)	0.468 (0.285)	14.94 (2.944)	184 (84.4)	62 (16.7)	78 (25.8)	..... .....
0.00 (0.00)	2557	1.081 (4.091)	..... .....	..... .....	178 (80.8)	63 (17.2)	80 (26.4)	..... .....
23.98 (17.88)	2470	2.050 (7.760)	0.598 (0.364)	11.70 (2.305)	182 (83.3)	63 (17.2)	80 (26.7)	..... .....
52.81 (39.38)	2300	3.478 (13.166)	0.461 (0.280)	15.18 (2.991)	190 (87.8)	64 (17.5)	80 (26.9)	..... .....
12.14 (9.05)	2503	1.565 (5.926)	0.902 (0.549)	7.75 (1.527)	178 (81.4)	64 (17.5)	80 (26.9)	..... .....
35.44 (26.43)	2430	2.556 (9.676)	0.505 (0.307)	13.86 (2.731)	184 (84.2)	63 (17.2)	80 (26.9)	..... .....
Av Av	28.45 (21.22)	2.441 (8.726)	2.305 (0.567) (0.345)	12.34 (2.431)	183 (83.7)	63 (17.2)	80 (26.6)	29.123 (98.345)

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 5th (1H) Gear											
46.73 (34.85)	3451 (15.35)	5.08 (8.17)	2300	5.88	3.485 (13.191)	0.522 (0.317)	13.41 (2.642)	187 (86.1)	55 (12.8)	60 (15.3)	28.985 (97.878)
75% of Pull at Maximum Power—Ten Hours 5th (1H) Gear											
37.11 (27.68)	2573 (11.45)	5.41 (8.70)	2397	4.04	2.866 (10.850)	0.540 (0.329)	12.95 (2.551)	186 (85.7)	67 (19.5)	80 (26.8)	28.562 (96.450)
50% of Pull at Maximum Power—Two Hours 5th (1H) Gear											
25.99 (19.38)	1734 (7.72)	5.62 (9.04)	2456	2.76	2.341 (8.861)	0.630 (0.383)	11.10 (2.187)	182 (83.3)	71 (21.4)	85 (29.4)	28.490 (96.206)
50% of Pull at Reduced Engine Speed—Two Hours 6th (2H) Gear											
25.89 (19.31)	1726 (7.68)	5.62 (9.05)	1788	2.66	1.948 (7.373)	0.526 (0.320)	13.29 (2.618)	183 (83.9)	71 (21.7)	84 (28.6)	28.460 (96.105)
MAXIMUM POWER IN SELECTED GEARS											
32.36 (24.13)	6859 (30.51)	1.77 (2.85)	2410	12.91	2nd (2L) Gear			183 (83.9)	53 (11.7)	57 (13.9)	28.990 (97.895)
46.98 (35.04)	5141 (22.87)	3.43 (5.52)	2299	8.78	3rd (3L) Gear			187 (85.8)	54 (12.2)	59 (15.0)	28.980 (97.861)
46.26 (34.50)	3849 (17.12)	4.51 (7.25)	2299	6.44	4th (4L) Gear			187 (85.8)	54 (12.2)	59 (15.0)	28.990 (97.895)
47.47 (35.40)	3513 (15.63)	5.07 (8.15)	2297	6.01	5th (1H) Gear			187 (86.1)	53 (11.7)	57 (13.9)	28.990 (97.895)
47.47 (35.40)	2508 (11.16)	7.10 (11.42)	2297	4.36	6th (2H) Gear			186 (85.6)	55 (12.8)	60 (15.6)	28.980 (97.861)
LUGGING ABILITY IN 5th (1H) GEAR											
Crankshaft Speed rpm				2297	2070	1834	1622	1391	1152		
Pull—lbs (kN)				3513 (15.63)	3690 (16.41)	3886 (17.29)	4040 (17.97)	4210 (18.73)	4150 (18.46)		
Increase in Pull %				0	5	11	15	20	18		
Power—Hp (kW)				47.47 (35.40)	44.81 (33.41)	41.76 (31.14)	38.28 (28.55)	33.93 (25.30)	27.80 (20.73)		
Speed—Mph (km/h)				5.07 (8.15)	4.55 (7.33)	4.03 (6.49)	3.55 (5.72)	3.02 (4.86)	2.51 (4.04)		
Slip %				6.01	6.25	6.62	6.87	7.11	7.11		

Department of Agricultural Engineering

Dates of Test: May 24 to June 11, 1979

Manufacturer: INTERNATIONAL HARVESTER CO., 401 North Michigan Ave., Chicago, Illinois 60611

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 49.0 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8401 **Fuel weight** 6.995 lbs/gal (0.838 kg/l) **Oil SAE 30 API service classification** SC-SE/CA-CD **To motor** 2.056 gal (7.782 l) **Drained from motor** 1.949 gal (7.377 l) **Transmission and final drive lubricant** I. H. Hy-tran fluid **Total time engine was operated** 36.0 hours

ENGINE: Make International Diesel Type Four cylinder vertical **Serial No.** DT2D313257* **Crankshaft lengthwise** **Rated rpm** 2300 **Bore and stroke** 3.875" × 4.38" (98.4 mm × 111.2 mm) **Compression ratio** 15.3 to 1 **Displacement** 206 cu in (3376 ml) **Cranking system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements **Oil filter** one paper cartridge **Oil cooler** radiator for hydraulic and transmission oil **Fuel filter** two paper elements **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type Standard **Serial No.** B500003B001330-X- **Tread width** rear 56" (1422 mm) to 76" (1933 mm) front 48" (1219 mm) to 80" (2032 mm) **Wheel base** 77.7" (1974 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 27.4" (705 mm) Vertical distance above roadway 30.7" (780 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 **Advertised speeds mph (km/h)** first 1.4 (2.3) second 1.9 (3.0) third 3.7 (6.0) fourth 4.8 (7.7) fifth 5.4 (8.6) sixth 7.4 (11.8) seventh 14.3 (23.0) eighth 18.4 (29.5) reverse 1.7 (2.7), 2.3 (3.7), 4.5 (7.2), 5.7 (9.2) **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 112" (2.85 m) left 112" (2.85 m) (on concrete surface without brake) right 122" (3.11 m) left 122" (3.11 m) **Turning space diameter** (on concrete surface with brake applied) right 235" (5.97 m) left 235" (5.97 m) (on concrete surface without brake) right 256" (6.50 m) left 256" (6.50 m) **Power take-off** 540 rpm at 2140 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

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours	96.5
75% of Pull at Maximum Power—Ten Hours	96.0
50% of Pull at Maximum Power—Two Hours	96.5
50% of Pull at Reduced Engine Speed—Two Hours	94.0
Bystander in 8th (4H) gear	85.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 16.9-30; 6; 16 (110)	Two 16.9-30; 6; 16 (110)
Ballast	—Liquid (each)	935 lb (424 kg)	None
	—Cast Iron (each)	605 lb (274 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 9.5L-15; 6; 36 (250)	Two 9.5L-15; 6; 36 (250)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	52 lb (24 kg)	None
Height of Drawbar		15.5 in (395 mm)	15.5 in (395 mm)
Static Weight with Operator—Rear		6750 lb (3061 kg)	3670 lb (1665 kg)
Front		2100 lb (953 kg)	1995 lb (905 kg)
Total		8850 lb (4014 kg)	5665 lb (2570 kg)

procedure. Temperature at injection pump return was 148°F (64.7°C). Five gears were chosen between tire tangential pull limit and 10 mph (16.1 km/h). During final inspection, slight pitting of the engine exhaust valve faces was noted.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1313**.

LOUIS I. LEVITICUS
Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman
W. E. SPLINTER
K. VON BARGEN
Board of Tractor Test Engineers



International 584 Utility Diesel

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