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## Test 1376: International 884 Rowcrop Diesel 16-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1376 — INTERNATIONAL 884 ROWCROP DIESEL 16 SPEED

## POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption		Hp.hr/gal (kW.h/l)	Temperature °F (°C)			Barometer inch Hg (kPa)	
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)		Cooling medium	Air wet bulb	Air dry bulb		
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed—Two Hours (PTO Speed—1096 rpm)									
72.91 (54.37)	2400	4.737 (17.931)	0.454 (0.276)	15.39 (3.032)	195 (90.7)	60 (15.4)	75 (24.1)	28.647 (96.735)	
Standard Power Take-off Speed (1000 rpm)—One Hour									
69.76 (52.02)	2190	4.426 (16.754)	0.443 (0.269)	15.76 (3.105)	198 (92.4)	60 (15.8)	78 (25.8)	28.580 (96.510)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
64.11 (47.81)	2482	4.232 (16.020)	0.461 (0.280)	15.15 (2.984)	192 (88.9)	62 (16.7)	82 (27.5)	..... .....	
0.00 (0.00)	2651	1.461 (5.530)	..... .....	..... .....	181 (82.5)	61 (16.1)	81 (27.2)	..... .....	
33.27 (24.81)	2577	2.797 (10.588)	0.587 (0.357)	11.89 (2.343)	186 (85.6)	61 (16.1)	81 (27.2)	..... .....	
72.12 (53.78)	2400	4.714 (17.844)	0.456 (0.278)	15.30 (3.014)	197 (91.4)	61 (16.1)	82 (27.5)	..... .....	
16.87 (12.58)	2614	2.213 (8.377)	0.916 (0.557)	7.62 (1.502)	181 (82.8)	62 (16.4)	82 (27.5)	..... .....	
48.93 (36.49)	2528	3.459 (13.094)	0.494 (0.300)	14.15 (2.787)	188 (86.7)	62 (16.4)	82 (27.8)	..... .....	
Av Av	39.22 (29.25)	2542	3.146 (11.909)	0.560 (0.341)	12.47 (2.456)	187 (86.3)	61 (16.3)	81 (27.4)	28.543 (96.387)

## 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/hjw.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 11th (2HiTA) Gear											
63.97 (47.70)	4331 (19.26)	5.54 (8.91)	2400	5.28	4.744 (17.959)	0.518 (0.315)	13.48 (2.656)	187 (85.8)	43 (5.8)	51 (10.6)	29.100 (98.266)
75% of Pull at Maximum Power—Ten Hours 11th (2HiTA) Gear											
50.77 (37.86)	3283 (14.60)	5.80 (9.33)	2478	3.96	3.932 (14.882)	0.541 (0.329)	12.91 (2.544)	186 (85.6)	54 (12.1)	68 (19.9)	28.446 (96.058)
50% of Pull at Maximum Power—Two Hours 11th (2HiTA) Gear											
35.02 (26.11)	2192 (9.75)	5.99 (9.64)	2531	2.81	3.169 (11.995)	0.632 (0.384)	11.05 (2.177)	185 (85.0)	56 (13.3)	73 (22.8)	28.600 (96.578)
50% of Pull at Reduced Engine Speed—Two Hours 13th (3HiTA) Gear											
35.07 (26.15)	2187 (9.73)	6.01 (9.67)	1560	2.71	2.489 (9.420)	0.496 (0.301)	14.09 (2.776)	186 (85.6)	55 (12.5)	75 (23.6)	28.600 (96.578)
MAXIMUM POWER IN SELECTED GEARS											
55.53 (41.41)	8116 (36.10)	2.57 (4.13)	2460	12.34	5th (3LoTA) Gear			188 (86.4)	55 (12.8)	70 (21.1)	28.610 (96.612)
62.21 (46.39)	7554 (33.60)	3.09 (4.97)	2400	10.35	6th (3LoDD) Gear			186 (85.6)	43 (6.1)	52 (11.1)	29.110 (98.300)
63.09 (47.05)	6711 (29.85)	3.53 (5.67)	2400	8.63	7th (4LoTA) Gear			186 (85.6)	43 (6.1)	52 (11.1)	29.110 (98.300)
64.93 (48.42)	5830 (25.93)	4.18 (6.72)	2398	7.28	8th (1HiTA) Gear			187 (86.1)	42 (5.6)	51 (10.6)	29.120 (98.334)
63.94 (47.68)	5530 (24.60)	4.34 (6.98)	2400	6.91	9th (4LoDD) Gear			187 (85.8)	42 (5.6)	51 (10.6)	29.120 (98.334)
64.97 (48.45)	4759 (21.17)	5.12 (8.24)	2398	5.76	10th (1HiDD) Gear			187 (85.8)	41 (5.0)	50 (10.0)	29.130 (98.368)
65.39 (48.76)	4429 (19.70)	5.54 (8.91)	2401	5.38	11th (2HiTA) Gear			187 (85.8)	40 (4.4)	47 (8.3)	29.140 (98.401)
64.71 (48.25)	3593 (15.98)	6.75 (10.87)	2400	4.26	12th (2HiDD) Gear			187 (85.8)	43 (6.1)	52 (11.1)	29.100 (98.266)
63.39 (47.27)	2579 (11.47)	9.22 (14.83)	2399	2.98	13th (3HiTA) Gear			187 (85.8)	43 (6.1)	52 (11.1)	29.100 (98.266)

Department of Agricultural Engineering

Dates of Test: November 5-13, 1980

**MANUFACTURER:** INTERNATIONAL  
HARVESTER COMPANY, 401 North Michi-  
gan Avenue, Chicago, IL 60611.

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel  
Cetane No. 47.9 (rating taken from oil company's  
inspection data) **Specific gravity converted to**  
**60°/60° (15°/15°)** 0.8385 **Fuel weight** 6.982 lbs/gal  
(0.837 kg/l) **Oil SAE 30 API service classifica-**  
**tion CA/CD-SC/SE To motor** 1.972 gal (7.465 l)  
**Drained from motor** 1.874 gal (7.095 l) **Trans-**  
**mission and final drive lubricant** I.H. Hytran  
Fluid **Total time engine was operated** 44.0 hours

**ENGINE Make** International Diesel **Type** four  
cylinder vertical **Serial No.** 268DT2D051557\*  
**Crankshaft** lengthwise **Rated rpm** 2400 **Bore**  
**and stroke** 3.937" × 5.51" (100 mm × 139.9 mm)  
**Compression ratio** 16 to 1 **Displacement** 268 cu  
in (4392 ml) **Starting system** 12 volt **Lubrication**  
pressure **Air cleaner** two paper elements **Oil**  
**filter** one full flow paper cartridge **Oil cooler** en-  
gine coolant heat exchanger for crankcase oil,  
radiator for hydraulic and transmission oil **Fuel**  
**filter** two paper elements **Muffler** vertical **Cool-**  
**ing medium temperature control** one thermostat

**CHASSIS: Type** standard **Serial No.**  
B650011B005349-\* **Tread width** rear 52" (1321  
mm) to 100" (2540 mm) front 52" (1321 mm) to 80"  
(2032 mm) **Wheel base** 84" (2134 mm) **Center of**  
**gravity** (without operator or ballast, with  
minimum tread, with fuel tank filled and tractor  
serviced for operation) Horizontal distance for-  
ward from center-line of rear wheels 27.2" (690  
mm) Vertical distance above roadway 31.6" (803  
mm) Horizontal distance from center of rear wheel  
tread 0" (0 mm) to the right/left **Hydraulic control**  
**system** direct engine drive **Transmission** selec-  
tive gear fixed ratio with partial (2) range operator  
controlled powershift **Advertised speeds mph**  
**(km/h)** first 1.4 (2.2) second 1.7 (2.7) third 1.8 (2.9)  
fourth 2.2 (3.5) fifth 2.9 (4.7) sixth 3.6 (5.7)  
seventh 4.0 (6.4) eighth 4.6 (7.5) ninth 4.8 (7.7)  
tenth 5.6 (9.0) eleventh 6.0 (9.7) twelfth 7.3 (11.7)  
thirteenth 9.8 (15.7) fourteenth 11.8 (19.0) fif-  
teenth 13.2 (21.3) sixteenth 15.9 (25.6) reverse 2.1  
(3.4), 2.5 (4.1), 2.7 (4.4), 3.3 (5.3), 4.4 (7.1), 5.3  
(8.6), 6.0 (9.6), 7.2 (11.6) **Clutch** single plate dry  
disc operated by foot pedal **Brakes** single 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 122" (3.10 m) left 122"  
(3.10 m) (on concrete surface without brake) right  
138.4" (3.52 m) left 138.4" (3.52 m) **Turning space**  
**diameter** (on concrete surface with brake applied)  
right 254.5" (6.46 m) left 254.5" (6.46 m) (on con-  
crete surface without brake) right 282" (7.16 m)  
left 282" (7.16 m) **Power take-off** 1000 rpm at  
2190 engine rpm and 540 rpm at 2142 engine  
rpm.

# LUGGING ABILITY IN 11th (2HiTA) GEAR

Crankshaft Speed rpm	2401	2161	1919	1683	1441	1202
Pull—lbs (kN)	4429 (19.70)	4811 (21.40)	5036 (22.40)	5211 (23.18)	5248 (23.34)	5017 (22.32)
Increase in Pull %	0	9	14	18	18	13
Power—Hp (kW)	65.39 (48.76)	63.64 (47.46)	58.93 (43.94)	53.36 (39.79)	45.92 (34.24)	36.73 (27.39)
Speed—Mph (km/h)	5.54 (8.91)	4.96 (7.98)	4.39 (7.06)	3.84 (6.18)	3.28 (5.28)	2.75 (4.42)
Slip %	5.38	5.89	6.15	6.28	6.53	6.15

# TRACTOR SOUND LEVEL WITHOUT CAB dB(A)

Maximum Available Power—Two Hours	98.0
75% of Pull at Maximum Power—Ten Hours	99.0
50% of Pull at Maximum Power—Two Hours	98.5
50% of Pull at Reduced Engine Speed—Two Hours	94.5
Bystander in 16th (4HiDD) gear	88.5

# TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Two 18.4-30; 6; 16 (110)	Two 18.4-30; 6; 16 (110)
Ballast	—Liquid (each)	1096 lb (497 kg)	None
	—Cast Iron (each)	857 lb (389 kg)	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Two 9.5L-16; 6; 36 (250)	Two 9.5L-16; 6; 36 (250)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	20 lb (9 kg)	None
<b>Height of Drawbar</b>		16.5 in (420 mm)	16.5 in (420 mm)
<b>Static Weight with Operator—Rear</b>		8130 lb (3688 kg)	4225 lb (1916 kg)
	Front	2020 lb (916 kg)	1980 lb (898 kg)
	Total	10150 lb (4604 kg)	6205 lb (2814 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 code or official Nebraska test procedure. Temperature at injection pump return was 145°F (62.9°C). Nine gears were chosen between tire tangential pull limit and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1376.

LOUIS I. LEVITICUS

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

K. VON BARGEN

Board of Tractor Test Engineers



International 884 Rowcrop Diesel