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## Test 1256: International 4386 Diesel

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# NEBRASKA TRACTOR TEST 1256 — INTERNATIONAL 4386 DIESEL

## 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	
<b>Maximum Available Power—Two Hours 5th (5L) Gear</b>											
169.42 (126.34)	9357 (41.62)	6.79 (10.93)	2599	2.84	13.627 (51.583)	0.559 (0.340)	12.43 (2.449)	193 (89.4)	62 (16.7)	74 (23.1)	28.890 (97.557)
<b>75% of Pull at Maximum Power—Ten Hours 5th (5L) Gear</b>											
136.25 (101.60)	7277 (32.37)	7.02 (11.30)	2671	2.29	11.427 (43.256)	0.582 (0.354)	11.92 (2.349)	185 (84.8)	68 (19.9)	72 (22.4)	28.484 (96.186)
<b>50% of Pull at Maximum Power—Two Hours 5th (5L) Gear</b>											
94.51 (70.47)	4847 (21.56)	7.31 (11.77)	2754	1.36	9.289 (35.161)	0.682 (0.415)	10.18 (2.004)	181 (82.5)	62 (16.7)	77 (24.7)	28.835 (97.371)
<b>50% of Pull at Reduced Engine Speed—Two Hours 7th (2H) Gear</b>											
93.97 (70.07)	4837 (21.52)	7.28 (11.72)	1695	1.65	6.696 (25.349)	0.495 (0.301)	14.03 (2.764)	181 (82.8)	55 (12.8)	70 (21.1)	28.600 (96.578)

## MAXIMUM POWER IN SELECTED GEARS

147.73 (110.16)	23321 (103.74)	2.38 (3.82)	2613	14.95	1st (1L) Gear		184 (84.4)	50 (10.0)	62 (16.7)	28.580 (96.510)
168.40 (125.57)	19324 (85.96)	3.27 (5.26)	2599	7.98	2nd (2L) Gear		185 (84.7)	50 (10.0)	61 (16.1)	28.570 (96.477)
174.06 (129.80)	15345 (68.26)	4.25 (6.85)	2599	5.14	3rd (3L) Gear		190 (87.8)	60 (15.6)	69 (20.6)	28.920 (97.659)
174.40 (130.05)	12008 (53.42)	5.45 (8.76)	2599	3.77	4th (4L) Gear		191 (88.1)	60 (15.6)	69 (20.6)	28.930 (97.692)
175.37 (130.77)	9697 (43.14)	6.78 (10.91)	2598	2.92	5th (5L) Gear		189 (87.2)	58 (14.4)	67 (19.4)	28.940 (97.726)
176.02 (131.26)	7581 (33.72)	8.71 (14.01)	2600	2.21	6th (1H) Gear		191 (88.3)	60 (15.6)	69 (20.6)	28.920 (97.659)

## LUGGING ABILITY IN RATED GEAR 5th (5L)

Crankshaft Speed rpm	2598	2339	2084	1822	1562	1299
Pull—lbs (kN)	9697 (43.14)	11208 (49.86)	11948 (53.15)	12044 (53.57)	11181 (49.74)	10183 (45.30)
Increase in Pull %	0	16	23	24	15	5
Power—Hp (kW)	175.37 (130.77)	181.46 (135.32)	171.83 (128.13)	151.31 (112.83)	120.75 (90.04)	91.78 (68.44)
Speed—Mph (km/h)	6.78 (10.91)	6.07 (9.77)	5.39 (8.68)	4.71 (7.58)	4.05 (6.52)	3.38 (5.44)
Slip %	2.92	3.46	3.77	3.93	3.77	3.15

## TRACTOR SOUND LEVEL WITH CAB

Maximum Available Power—Two Hours	82.0
75% of Pull at Maximum Power—Ten Hours	82.0
50% of Pull at Maximum Power—Two Hours	82.5
50% of Pull at Reduced Engine Speed—Two Hours	78.0
Bystander in 9th (4H) gear	96.5

## TIRES, BALLAST AND WEIGHT

<b>Rear Tires</b>	—No., size, ply & psi (kPa)
Ballast	—Liquid (each)
	—Cast Iron (each)
<b>Front Tires</b>	—No., size, ply & psi (kPa)
Ballast	—Liquid (each)
	—Cast Iron (each)

## Height of drawbar

Static weight with operator—rear	
front	
total	

## Without Ballast

Four 18.4-38; 8; 12 (80)
None
None
Four 18.4-38; 8; 12 (80)
None
None
20 in (510 mm)
11240 lb (5098 kg)
13690 lb (6210 kg)
24930 lb (11308 kg)

Department of Agricultural Engineering

Dates of Test: September 17 to 27, 1977

**Manufacturer:** INTERNATIONAL HARVESTER COMPANY, 401 North Michigan Avenue, Chicago, IL 60611.

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 50.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8340 **Fuel weight** 6.944 lbs/gal (0.834 kg/l) **Oil SAE 30 API service classification** CA/CD-SC/SE **To motor** 4.183 gal (15.834 l) **Drained from motor** 3.775 gal (14.290 l) **Transmission and final drive lubricant** I.H. Hy-Tran Fluid **Total time engine was operated** 37.5 hours

**ENGINE Make** International Diesel **Type** 6 cylinder vertical with turbocharger and inter-cooler **Serial No.** 466 BT2U024759\* **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 4.30" × 5.35" (109.2 mm × 135.9 mm) **Compression ratio** 15.1 to 1 **Displacement** 466 cu in (7639 ml) **Cranking system** 12 volt **Lubrication** pressure **Air cleaner** primary and safety paper elements with dust unloader **Oil filter** two full flow spin-on cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic fluid **Fuel filter** primary and final screw-on paper cartridges **Muffler** none **Cooling medium temperature control** thermostat

**CHASSIS:** **Type** four-wheel drive with duals **Serial No.** 2970003U001122 **Tread width** rear 68" (1727 mm) to 126" (3200 mm) front 68" (1727 mm) to 126" (3200 mm) **Wheel base** 118" (2997 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 64.7" (1643 mm) Vertical distance above roadway 43.6" (1107 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 2.8 (4.5) second 3.5 (5.6) third 4.5 (7.2) fourth 5.6 (9.0) fifth 6.9 (11.1) sixth 8.9 (14.3) seventh 11.3 (18.2) eighth 14.2 (22.9) ninth 18.0 (29.0) tenth 22.2 (35.7) reverse 2.5 (4.1), 8.1 (13.0) **Clutch** double dry disc operated by foot pedal **Brakes** dual caliper disc brake on drive line operated hydraulically by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 230.5" (5.85 m) left 230.5" (5.85 m) **Turning space diameter** (on concrete surface without brake) right 506" (12.85 m) left 506" (12.85 m).

**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 137°F (58.1°C). Six gears were chosen between 15% slip and 15 mph (24.1 km/h). During final inspection slight pitting of the engine intake and exhaust valve faces was noted.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1256**.

LOUIS I. LEVITICUS

Engineer-in Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

K. VON BARGEN

Board of Tractor Test Engineers



**International 4386 Diesel**

The Agricultural Experiment Station  
Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln  
H. W. Ottoson, Director