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Test 1317: International 4786 Diesel 10-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1317 — INTERNATIONAL 4786 DIESEL 10 SPEED

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 6th (3H) Gear											
258.20 (192.54)	15680 (69.75)	6.18 (9.94)	2600	3.60	20.175 (76.371)	0.547 (0.332)	12.80 (2.521)	188 (86.4)	54 (11.9)	70 (21.1)	29.100 (98.266)
75% of Pull at Maximum Power—Ten Hours 6th (3H) Gear											
210.04 (156.63)	12086 (53.76)	6.52 (10.49)	2713	2.51	17.623 (66.711)	0.587 (0.357)	11.92 (2.348)	183 (83.6)	56 (13.3)	72 (22.0)	29.003 (97.939)
50% of Pull at Maximum Power—Two Hours 6th (3H) Gear											
144.70 (107.91)	8051 (35.81)	6.74 (10.85)	2781	1.70	14.671 (55.536)	0.709 (0.431)	9.86 (1.943)	177 (80.6)	54 (12.2)	72 (22.2)	29.060 (98.131)
50% of Pull at Reduced Engine Speed—Two Hours 8th (4H) Gear											
144.00 (107.38)	8018 (35.66)	6.73 (10.84)	1680	1.63	10.400 (39.369)	0.505 (0.307)	13.85 (2.727)	182 (83.3)	55 (12.8)	73 (22.5)	29.040 (98.064)

MAXIMUM POWER IN SELECTED GEARS

192.11 (143.26)	33468 (148.88)	2.15 (3.46)	2710	14.78	2nd (1H) Gear			175 (79.4)	60 (15.6)	68 (20.0)	28.740 (97.051)
227.87 (169.93)	31773 (141.33)	2.69 (4.33)	2610	14.12	3rd (2L) Gear			182 (83.1)	60 (15.6)	71 (21.7)	28.750 (97.084)
254.08 (189.47)	25783 (114.69)	3.70 (5.95)	2599	6.89	4th (2H) Gear			186 (85.3)	51 (10.6)	65 (18.3)	29.110 (98.300)
265.55 (198.02)	20790 (92.48)	4.79 (7.71)	2599	4.79	5th (3L) Gear			186 (85.6)	52 (11.1)	66 (18.9)	29.110 (98.300)
265.41 (197.92)	16116 (71.69)	6.18 (9.94)	2600	3.52	6th (3H) Gear			186 (85.6)	50 (10.0)	63 (17.2)	29.130 (98.368)
265.02 (197.62)	12263 (54.55)	8.10 (13.04)	2598	2.60	7th (4L) Gear			186 (85.6)	51 (10.6)	65 (18.3)	29.110 (98.300)

LUGGING ABILITY IN 6th (3H) GEAR

Crankshaft Speed rpm	2600	2338	2079	1819	1550	1297
Pull—lbs (kN)	16116 (71.69)	18124 (80.62)	19897 (88.51)	20696 (92.06)	20053 (89.20)	17821 (79.27)
Increase in Pull %	0	12	23	28	24	11
Power—Hp (kW)	265.41 (197.92)	266.94 (199.06)	259.32 (193.37)	235.36 (175.51)	194.44 (144.99)	145.47 (108.48)
Speed—Mph (km/h)	6.18 (9.94)	5.52 (8.89)	4.89 (7.87)	4.26 (6.86)	3.64 (5.85)	3.06 (4.93)
Slip %	3.52	4.12	4.42	4.87	4.72	4.12

TRACTOR SOUND LEVEL WITH CAB dB(A)

Maximum Available Power—Two Hours	82.5
75% of Pull at Maximum Power—Ten Hours	81.0
50% of Pull at Maximum Power—Two Hours	80.5
50% of Pull at Reduced Engine Speed—Two Hours	76.5
Bystander in 10th (5H) gear	95.5

Department of Agricultural Engineering

Dates of Test: May 23-29, 1979

Manufacturer: INTERNATIONAL HARVES-
TER CO., 401 North Michigan Ave., Chicago,
Ill. 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 classifi-
cation** SC-SE/CA-CD **To motor** 5.447 gal
(20.619 l) **Drained from motor** 4.711 gal
(17.832 l) **Transmission and final drive lubricant**
I. H. Hytran fluid **Total time engine was oper-
ated** 29.0 hours

ENGINE: Make International Diesel Type
Eight cylinder vee with turbocharger **Serial No.**
800TT2U005562* **Crankshaft** lengthwise **Rated
rpm** 2600 **Bore and stroke** 5.313" × 4.500" (135
mm × 114.3 mm) **Compression ratio** 15.6 to 1
Displacement 798 cu in (13078 ml) **Cranking
system** 12 volt **Lubrication** pressure **Air cleaner**
two paper elements **Oil filter** two paper car-
tridges **Oil cooler** engine coolant heat exchanger
for crankcase oil, radiator for hydraulic, transmis-
sion and dropbox oil **Fuel filter** two paper car-
tridges **Muffler** none **Cooling medium temper-
ature control** two thermostats

CHASSIS: Type Four wheel drive with duals
Serial No. 2990004U000665 **Tread width** rear
68.1" (1730 mm) to 125.1" (3178 mm) front 68.1"
(1730 mm) to 125.1" (3178 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
63.4" (1610 mm) Vertical distance above roadway
43.8" (1113 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 1.8 (2.9) second 2.3
(3.7) third 3.0 (4.8) fourth 3.8 (6.1) fifth 4.8 (7.8)
sixth 6.1 (9.9) seventh 8.0 (12.8) eighth 10.1 (16.3)
ninth 12.7 (20.4), tenth 16.1 (26.0), reverse 1.8
(2.9), 2.3 (3.7) **Clutch** double dry disc operated by
foot pedal **Brakes** single wet disc hydraulically
operated by one foot pedal **Steering** hydrostatic
and articulated **Turning radius** (on concrete sur-
face without brake) right 249" (6.32 m) left 249"
(6.32 m) **Turning space diameter** (on concrete
surface without brake) right 550" (13.97 m) left
550" (13.97 m) **Power take-off** none.

TIRES, BALLAST AND WEIGHT

Rear Tires —No., size, ply & psi (*kPa*)
Ballast —Liquid (each)
—Cast Iron (each)

Front Tires —No., size, ply & psi (*kPa*)
Ballast —Liquid (each inner)
—Cast Iron (each)

With Ballast

Four 23.1-30; 8; 14 (95)
None
48 lb (22 *kg*)

Four 23.1-30; 8; 14 (95)
1980 lb (898 *kg*)
None

20.0 in (510 *mm*)
14150 lb (6418 *kg*)
20200 lb (9163 *kg*)
34350 lb (15581 *kg*)

Without Ballast

Four 23.1-30; 8; 14 (95)
None
None

Four 23.1-30; 8; 14 (95)
None
None

20.0 in (510 *mm*)
13960 lb (6332 *kg*)
16240 lb (7366 *kg*)
30200 lb (13699 *kg*)

Height of Drawbar

Static Weight with Operator—Rear
Front
Total

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 144°F (62.2°C). Six 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 **1317**.

LOUIS I. LEVITICUS

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

K. VON BARGEN

Board of Tractor Test Engineers



International 4786 Diesel