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January 1975

Test 1174: International 1566 Turbo Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1174 – INTERNATIONAL 1566 TURBO DIESEL

POWER TAKE-OFF PERFORMANCE

Hp	Crank- shaft speed rpm	Fuel Consumption		Hp-hr per gal	Temperature Degrees F			Barometer inches of Mercury
		Gal per hr	Lb per hp-hr		Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1146 rpm)								
161.01	2600	11.068	0.477	14.55	190	65	75	28.793
Standard Power Take-off Speed (1000 rpm)—One Hour								
162.31	2269	10.043	0.429	16.16	187	70	75	28.815
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
140.80	2673	10.118	0.499	13.92	182	72	76	.....
0.00	2855	3.665	.....	.....	163	72	76	.....
72.52	2753	6.652	0.637	10.90	171	69	75	.....
160.44	2601	11.043	0.478	14.53	186	66	75	.....
37.08	2806	5.165	0.967	7.18	166	66	75	.....
106.94	2711	8.337	0.541	12.83	176	65	74	.....
Av 86.30	2733	7.497	0.603	11.51	174	68	75	28.820

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank-shaft speed rpm	Slip of drivers %	Fuel Consumption			Temp	Degrees F		
					Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—7th Gear (1 Hi TA)											
137.00	9105	5.64	2598	5.76	10.913	0.553	12.55	186	71	78	29.140
75% of Pull at Maximum Power—Ten Hours—7th Gear (1 Hi TA)											
110.79	7012	5.92	2689	4.41	9.476	0.594	11.69	176	58	64	28.859
50% of Pull at Maximum Power—Two Hours—7th Gear (1 Hi TA)											
74.44	4542	6.15	2750	3.00	7.546	0.704	9.865	170	60	66	29.085
50% of Pull at Reduced Engine Speed—Two Hours—8th Gear (1 Hi DD)											
77.12	4708	6.14	2349	3.04	6.465	0.582	11.93	169	62	72	29.075
MAXIMUM POWER WITH BALLAST											
85.57	15774	2.03	2718	14.31	2nd Gear (1 Lo DD)			169	58	64	28.903
133.90	13495	3.72	2598	9.92	3rd Gear (2 Lo TA)			188	63	76	28.860
135.60	11383	4.47	2599	7.59	4th Gear (2 Lo DD)			188	63	76	28.860
137.87	9354	5.53	2600	6.15	6th Gear (3 Lo DD)			189	63	76	28.860
140.35	9332	5.64	2598	5.84	7th Gear (1 Hi TA)			185	62	72	28.870
139.26	7826	6.67	2599	4.90	8th Gear (1 Hi DD)			187	61	76	28.860
VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST—7th Gear (1 Hi TA)											
Pounds Pull				9332	10479	11261	11774	11827	11058		
Horsepower				140.35	140.51	132.88	120.95	103.70	81.41		
Crankshaft Speed rpm				2598	2338	2075	1810	1554	1294		
Miles Per Hour				5.64	5.03	4.43	3.85	3.29	2.76		
Slip of Drivers %				5.84	7.37	7.51	7.96	8.11	7.51		

TRACTOR SOUND LEVEL (with cab)

	dB (A)
Maximum Available Power 2 Hours	90.0
75% of Pull at Max. Power 10 Hours	88.5
50% of Pull at Max. Power 2 Hours	87.5
50% of Pull at Reduced Engine Speed 2 Hours	87.0
Bystander 12th Gear (3 Hi DD)	87.5

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires	Four 20.8-38; 8; 12	Four 20.8-38; 8; 12
Ballast	718 lb each	None
	Cast Iron	None
Front Tires	Two 10.00-16; 6; 28	Two 10.00-16; 6; 28
Ballast	None	None
	Liquid	None
	Cast Iron	None
Height of drawbar	19.5 inches	19.5 inches
Static weight with operator—rear	14540 lb	11670 lb
front	3720 lb	3525 lb
total	18260 lb	15195 lb

Department of Agricultural Engineering

Dates of Test: May 3 to May 15, 1975

Manufacturer: INTERNATIONAL HARVESTER COMPANY, 401 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

FUEL, OIL AND TIME Fuel No 2 Diesel Cetane No 51.7 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8336 Weight per gallon 6.941 lb Oil SAE 30 API service classification CC, CD, CB, CA, SE, SD To motor 4.316 gal Drained from motor 3.636 gal Transmission and final drive lubricant IH Hy-Tran Fluid Total time engine was operated 48.5 hours.

ENGINE Make INTERNATIONAL Type DT-436 6 cylinder with turbo-charger Serial No 436TT2U020022* Crankshaft Mounted lengthwise Rated rpm 2600 Bore and stroke 4.3" x 5.0" Compression ratio 16 to 1 Displacement 436 cu in Cranking system electric 12 volt Lubrication pressure Air cleaner two stage dry type with replaceable pleated paper primary and safety elements and automatic dust unloader Oil filter two replaceable pleated paper full flow screw-on cartridges Oil cooler engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil Fuel filter two replaceable pleated paper screw-on cartridges Muffler vertical Cooling medium temperature control thermostat.

CHASSIS Type standard with duals Serial No 2650125U007123* Tread width rear 62" to 120" front 60.1" to 86.5" Wheel base 104.8" 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 24.5" Vertical distance above roadway 40.5" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed-ratio with operator controlled partial range power shift Advertised speeds mph first 1.9 second 2.2 third 4.0 fourth 4.7 fifth 4.9 sixth 5.7 seventh 5.8 eighth 6.8 ninth 12.4 tenth 14.5 eleventh 15.1 twelfth 17.6 reverse 3.3, 3.8, 6.9, 8.1, 8.4 and 9.8 Clutch single dry disc, operated by foot pedal with hydraulic power assist Brakes wet single disc, hydraulic power actuated Steering hydrostatic Turning radius (on concrete surface with brake applied) right 143" left 143" (on concrete surface without brake) right 189" left 189" Turning space diameter (on concrete surface with brake applied) right 296" left 296" (on concrete surface without brake) right 387" left 387" Power take-off 1000 rpm at 2269 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 procedure.

First gear was not run as it was necessary to limit the pull in second gear to avoid excessive wheel slippage.

Fuel temperature at injection pump return was 140°F.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1174.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

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