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Test 1116: International 4166 and 4186 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1116 – INTERNATIONAL 4166 DIESEL (ALSO INTERNATIONAL 4186 DIESEL)

POWER TAKE-OFF PERFORMANCE

Hp	Crank- shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temperature Degrees F Cooling medium	Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1159 rpm)								
150.63	2400	9.864	0.454	15.27	173	55	75	28.950
Standard Power Take-off Speed (1000 rpm)—One Hour								
152.72	2071	9.069	0.412	16.84	174	55	75	28.950
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
133.68	2506	9.304	0.483	14.37	170	54	74	.....
0.00	2675	3.330	.....	.....	153	54	74	.....
69.13	2593	6.306	0.633	10.96	165	56	76	.....
151.22	2400	9.827	0.451	15.39	173	55	75	.....
35.12	2633	4.922	0.972	7.14	160	54	74	.....
102.08	2552	7.738	0.526	13.19	167	55	75	.....
Av 81.87	2560	6.905	0.585	11.86	165	55	75	28.953

DRAWBAR PERFORMANCE

Hp	Draw- bar pull lbs	Speed miles per hr	Crank- shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temp Degrees F Cool- ing med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—4th Gear (4 Lo)											
127.55	8075	5.92	2398	2.96	9.803	0.533	13.01	175	49	60	28.750
75% of Pull at Maximum Power—Ten Hours—4th Gear (4 Lo)											
104.27	6192	6.32	2538	2.20	8.776	0.583	11.88	176	32	32	29.001
50% of Pull at Maximum Power—Two Hours—4th Gear (4 Lo)											
71.95	4170	6.47	2583	1.62	7.244	0.698	9.93	166	35	39	28.890
50% of Pull at Reduced Engine Speed—Two Hours—5th Gear (1 Hi)											
71.96	4139	6.52	2292	1.40	6.559	0.632	10.97	161	34	38	28.995

MAXIMUM POWER WITH BALLAST

92.82	19434	1.79	2542	14.79	1st Gear (1 Lo)	167	47	54	28.900
128.01	11959	4.01	2398	5.02	2nd Gear (2 Lo)	167	45	51	29.000
129.77	9875	4.93	2398	3.77	3rd Gear (3 Lo)	165	48	53	29.000
133.47	8267	5.92	2399	3.06	4th Gear (4 Lo)	166	48	53	29.000
130.47	7250	6.75	2400	2.56	5th Gear (1 Hi)	165	47	51	29.000
115.40	2962	14.61	2399	0.88	6th Gear (2 Hi)	165	45	50	29.000

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 4th Gear (4 Lo)

Pounds Pull	8267	9437	10220	10689	9917	9039
Horsepower	130.47	132.52	126.10	115.03	92.07	69.59
Crankshaft Speed rpm	2399	2145	1891	1655	1422	1175
Miles Per Hour	5.92	5.27	4.63	4.04	3.48	2.89
Slip of Drivers %	3.06	3.56	3.98	4.12	3.84	3.42

TRACTOR SOUND LEVEL WITH CAB

	dB (A)
Maximum Available Power 2 Hours	89.5
75% of Pull at Max. Power 10 Hours	89.0
50% of Pull at Max. Power 2 Hours	89.0
50% of Pull at Reduced Engine Speed 2 Hours	92.0
Bystander 8th Gear (4 Hi)	89.5

TIRES BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear tires	—No., size, ply & psi	Two 23.1-26;8;16	Two 23.1-26;8;16
Ballast	—Liquid	543 lb each	None
	Cast Iron	None	None
Front tires	—No., size, ply & psi	Two 23.1-26;8;16	Two 23.1-26;8;16
Ballast	—Liquid	1300 lb each	None
	Cast Iron	None	None
Height of drawbar		14 inches	15 inches
Static weight with operator—Rear		8820 lb	7735 lb
Front		11190 lb	8590 lb
Total		20010 lb	16325 lb

Department of Agricultural Engineering

Dates of Test: November 1 to December 6, 1972

Manufacturer: INTERNATIONAL HARVESTER COMPANY, CHICAGO, ILLINOIS

FUEL, OIL AND TIME Fuel No 2 Diesel Cetane No. 54.5 (rating taken from oil company's typical inspection data) **Specific gravity** converted to 60°/60° 0.8330 **Weight per gallon** 6.936 lb **Oil SAE 30 API service classification** I.H. No 1 Oil for Diesel Engines (CD CC CB CA SE SD CS or DS DM DG MS) **To motor** 5.431 gal **Drained from motor** 3.594 gal **Transmission lubricant** IH Hy-Tran fluid **Final drive lubricant** SAE 90 **Type** multi-purpose. **Total time engine was operated** 59 hours

ENGINE Make International Diesel Type 6 cylinder vertical with turbo-charger **Serial No** 436TT2U007692* **Crankshaft Mounted** length-wise **Rated rpm** 2400 **Bore and stroke** 4.30" x 5.00" **Compression ratio** 16 to 1 **Displacement** 436 cu in **Cranking system** 12 volt electric (two 6 volt batteries) **Lubrication pressure** Air cleaner two stage dry type with replaceable pleated paper primary and safety elements with automatic dust unloader **Oil filter** full flow using two replaceable screw-on cartridges **Oil Cooler** engine coolant heat exchanger for crankcase oil and radiator for transmission and hydraulic oil **Fuel filter** one primary and one final using replaceable screw-on cartridges **Muffler** was not used **Cooling medium temperature control** thermostat

CHASSIS Type 4-wheel drive **Serial No** 2960413U010536 **Tread width** rear 80" front 80" **Wheel base** 102" **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 55" **Vertical distance** above roadway 41" **Horizontal distance** from center of rear wheel tread 0" to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** first 2 second 4 third 4 1/4 fourth 5 1/4 fifth 6 1/2 sixth 14 seventh 17 eighth 20 1/2 reverse 2 1/4, 4 3/4, 5 3/4 and 6 3/4 **Clutch** single plate dry disc operated by foot pedal **Brakes** internal expanding shoes for all four wheels hydraulically power actuated operated by single foot pedal **Steering** hydraulic with power assist **Turning radius** (on concrete surface with front wheel steering) right 295" left 295" (on concrete surface with 4-wheel steering) right 187" left 187" **Turning space diameter** (on concrete surface with front wheel steering) right 617" left 617" (on concrete surface with 4-wheel steering) right 398" left 398" **Power take-off** 1159 rpm at 2400 engine rpm.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments were made.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. Six gears were chosen between 15% slip and 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1116.

L. F. LARSEN

Engineer-In-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

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