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January 1972

## Test 1102: Case 1370 Diesel

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1102 – CASE 1370 DIESEL

## POWER TAKE-OFF PERFORMANCE

Hp	Crank- shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temperature Cooling medium	Degrees F Air wet bulb	Degrees F Air dry bulb	Barometer inches of Mercury
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>								
<b>Rated Engine Speed—Two Hours (PTO Speed—1050 rpm)</b>								
142.51	2099	9.562	0.465	14.90	191	66	75	28.840
<b>Standard Power Take-off Speed (1000 rpm)—One Hour</b>								
143.64	2000	9.345	0.451	15.37	192	66	75	28.860
<b>VARYING POWER AND FUEL CONSUMPTION—Two Hours</b>								
127.54	2208	9.109	0.495	14.00	188	65	75	.....
0.00	2281	3.270	.....	.....	172	65	75	.....
64.99	2255	6.107	0.652	10.64	185	66	75	.....
141.38	2100	9.619	0.472	14.70	192	65	75	.....
32.74	2272	4.702	0.996	6.96	176	65	75	.....
96.54	2234	7.638	0.549	12.64	188	65	74	.....
<b>Av. 7720</b>	<b>2225</b>	<b>6.741</b>	<b>0.606</b>	<b>11.45</b>	<b>184</b>	<b>65</b>	<b>74</b>	<b>28.877</b>

## DRAWBAR PERFORMANCE

Hp	Draw- bar pull lbs	Speed miles per hr	Crank- shaft speed rpm	Slip of drivers %	Fuel Consumption		Hp-hr per gal	Temp Cool- ing med	Degrees F Air wet bulb	Degrees F Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—6th Gear (3 Lo)											
120.97	9439	4.81	2100	5.95	9.499	0.544	12.73	188	65	70	29.020
75% of Pull at Maximum Power—Ten Hours—6th Gear (3 Lo)											
99.90	7230	5.18	2222	4.19	8.448	0.586	11.82	187	69	80	29.020
50% of Pull at Maximum Power—Two Hours—6th Gear (3 Lo)											
69.36	4902	5.31	2246	2.96	6.830	0.683	10.16	187	72	91	28.960
50% fo Pull at Reduced Engine Speed—Two Hours—9th Gear (3 Hi)											
68.78	4887	5.28	1339	2.92	5.010	0.505	13.73	189	72	91	28.960
MAXIMUM POWER WITH BALLAST											
104.16	16609	2.35	2222	14.70	2nd Gear (1 Int) ....			184	62	69	28.940
120.85	10895	4.16	2101	7.28	5th Gear (2 Int) ....			185	62	69	28.940
123.01	9649	4.78	2100	6.47	6th Gear (3 Lo) .....			188	66	78	28.950
120.82	8544	5.30	2100	5.65	7th Gear (2 Hi) .....			190	68	80	28.950
122.74	7072	6.51	2101	4.52	8th Gear (3 Int) .....			190	68	81	28.950
119.58	5445	8.23	2102	3.36	9th Gear (3 Hi) .....			190	70	85	28.950

## VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 6th Gear (3 Lo)

Pounds Pull	9649	10896	11611	11893	11592	11308
Horsepower	123.01	123.29	116.74	103.98	86.52	78.02
Crankshaft Speed rpm	2100	1882	1680	1469	1250	1153
Miles Per Hour	4.78	4.24	3.77	3.28	2.80	2.59
Slip of Drivers %	6.47	7.34	7.77	8.34	8.05	7.77

## TRACTOR SOUND LEVEL (with cab) dB(A)

Maximum Available Power 2 Hours	88.0
75% of Pull at Max. Power 10 Hours	89.0
50% of Pull at Max. Power 2 Hours	88.0
50% of Pull at Reduced Engine Speed 2 Hours	82.5
Bystander 12th gear (4th Hi)	90.0

## TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires—No., size, ply & psi	Four 18.4-38; 8; 16	Four 18.4-38; 8; 16
Ballast—Liquid	1130 lb each	None
Cast Iron	250 lb each	None
Front Tires—No., size, ply & psi	Two 10.00-16; 6; 28	Two 10.00-16; 6; 28
Ballast—Liquid	None	None
Cast Iron	75 lb each	None
Height of drawbar	19½ inches	20½ inches
Static weight with operator—rear	16800 lb	11280 lb
front	4160 lb	4010 lb
total	20960 lb	15290 lb

## Department of Agricultural Engineering

Dates of Test: June 10 to June 19, 1972

Manufacturer: J. I. CASE COMPANY, RACINE, WISCONSIN

**FUEL, OIL AND TIME** Fuel No. 2 Diesel Cetane No. 50.1 (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 SB/SE CA/CD (MS DS) To motor 3.689 gal Drained from motor 3.417 gal Transmission and final drive lubricant Case TFD fluid Total time engine was operated 44½ hours

**ENGINE** Make J. I. Case Diesel Type 6 cylinder with turbo-charger Serial No. A504BDT-2503475 Crankshaft Mounted lengthwise Rated rpm 2100 Bore and stroke 4½" x 5" Compression ratio 16.5 to 1 Displacement 504 cu. in. Cranking system 12 volt electric Lubrication pressure Air cleaner dry type two stage with replaceable pleated paper elements Oil filter two parallel full flow replaceable cartridges Oil cooler engine coolant heat exchanger for crank-case oil and radiator for transmission and hydraulic fluid Fuel filter replaceable primary and secondary filter cartridges Muffler was used Cooling medium temperature control two thermostats

**CHASSIS** Type standard Serial No. 8696381 Tread width rear 64" to 109" front 60" to 88" Wheel base 104" 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 31.3" Vertical distance above roadway 39.3" 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 partial range operator controlled power shifting Advertised speeds mph first 1.9 second 2.6 third 3.2 fourth 3.4 fifth 4.5 sixth 5.2 seventh 5.6 eighth 6.8 ninth 8.4 tenth 10.8 eleventh 14.3 twelfth 17.8 reverse 3.2, 5.6, 8.4 Clutch multiple disc wet clutches within transmission actuated hydraulically Brakes wet multiple disc hydraulically power actuated by two foot pedals that can be locked together Steering hydrostatic Turning radius (on concrete surface with brake applied) right 148" left 148" (on concrete surface without brake) right 172" left 172" Turning space diameter (on concrete surface with brake applied) right 307" left 307" (on concrete surface without brake) right 356" left 356" Power take-off 1000 rpm at 2000 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 because of excessive wheel slippage. Third, fourth, tenth, eleventh, and twelfth gears were not run as test procedure requires only six travel speeds.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1102.

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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