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Test 1330: Case 4890 Diesel, Also Case 4894 Powershift Diesel, and Case International 4894 Powershift Diesel (12-Speed)

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NEBRASKA TRACTOR TEST 1330—CASE 4890 DIESEL
ALSO CASE 4894 POWERSHIFT DIESEL
ALSO CASE INTERNATIONAL 4894 POWERSHIFT DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed—Two Hours (PTO Speed—1000 rpm)									
*	253.41 (188.97)	2200	15.528 (58.781)	0.431 (0.262)	16.32 (3.215)	180 (82.0)	57 (13.8)	75 (24.1)	28.997 (97.917)
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
	225.82 (168.39)	2306	14.516 (54.948)	0.452 (0.275)	15.56 (3.065)	178 (81.1)	57 (13.9)	75 (23.9)	....
	0.00 (0.00)	2440	4.698 (17.783)	....	....	168 (75.8)	57 (13.9)	75 (23.9)	....
	116.66 (86.99)	2384	9.609 (36.374)	0.579 (0.352)	12.14 (2.392)	172 (77.8)	58 (14.2)	76 (24.4)	....
	253.81 (189.27)	2200	15.548 (58.857)	0.431 (0.262)	16.32 (3.216)	181 (82.8)	57 (13.9)	76 (24.7)	....
	58.98 (43.98)	2411	7.219 (27.329)	0.861 (0.524)	8.17 (1.609)	171 (77.2)	58 (14.2)	76 (24.2)	....
	172.73 (128.80)	2355	12.024 (45.515)	0.489 (0.298)	14.37 (2.830)	175 (79.4)	58 (14.2)	75 (23.9)	....
Av	**138.00**	**2349**	**10.602**	**0.540**	**13.02**	**174**	**57**	**76**	**28.983**
Av	***(102.91)***		***(40.134)***	***(0.329)***	***(2.564)***	***(79.0)***	***(14.0)***	***(24.2)***	***(97.872)***

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 8th (3I) Gear											
218.68 (163.07)	13778 (61.29)	5.95 (9.58)	2200	3.87	15.414 (58.348)	0.496 (0.301)	14.19 (2.795)	177 (80.3)	52 (10.8)	62 (16.7)	28.755 (97.101)
75% of Pull at Maximum Power—Ten Hours 8th (3I) Gear											
180.71 (134.76)	10611 (47.20)	6.39 (10.28)	2332	2.66	13.622 (51.566)	0.530 (0.322)	13.27 (2.613)	175 (79.2)	49 (9.5)	61 (16.3)	28.823 (97.331)
50% of Pull at Maximum Power—Two Hours 8th (3I) Gear											
123.55 (92.13)	7061 (31.41)	6.56 (10.56)	2373	1.81	10.880 (41.187)	0.619 (0.377)	11.36 (2.237)	173 (78.3)	57 (13.6)	71 (21.7)	28.680 (96.848)
50% of Pull at Reduced Engine Speed—Two Hours 10th (4L) Gear											
124.06 (92.51)	7088 (31.53)	6.56 (10.56)	1428	1.76	7.983 (30.217)	0.452 (0.275)	15.54 (3.062)	172 (77.5)	58 (14.2)	72 (21.9)	28.645 (96.730)
MAXIMUM POWER IN SELECTED GEARS											
189.97 (141.66)	27627 (122.89)	2.58 (4.15)	2299	14.87	2nd (1I) Gear			174 (78.9)	44 (6.7)	52 (11.1)	28.730 (97.017)
202.31 (150.86)	26801 (119.21)	2.83 (4.56)	2199	13.07	3rd (2L) Gear			175 (79.2)	48 (8.9)	56 (13.3)	28.790 (97.220)
213.38 (159.12)	24137 (107.37)	3.32 (5.34)	2199	8.59	4th (1H) Gear			175 (79.2)	47 (8.3)	54 (12.2)	28.800 (97.253)
222.64 (166.02)	20482 (91.11)	4.08 (6.56)	2200	6.14	5th (2I) Gear			174 (78.9)	46 (7.8)	53 (11.7)	28.800 (97.253)
222.46 (165.89)	19019 (84.60)	4.39 (7.06)	2200	5.55	6th (3L) Gear			174 (78.6)	44 (6.7)	50 (10.0)	28.810 (97.287)
223.22 (166.45)	16133 (71.76)	5.19 (8.35)	2200	4.48	7th (2H) Gear			174 (78.6)	43 (6.1)	49 (9.4)	28.810 (97.287)
224.81 (167.64)	14144 (62.91)	5.96 (9.59)	2201	3.79	8th (3I) Gear			176 (79.7)	42 (5.6)	46 (7.8)	28.840 (97.388)
223.87 (166.94)	11169 (49.68)	7.52 (12.10)	2200	2.85	9th (3H) Gear			174 (78.9)	45 (7.2)	51 (10.6)	28.810 (97.287)

Department of Agricultural Engineering

Dates of Test: October 22-29, 1979

Manufacturer: J. I. CASE COMPANY, 700 State Street, Racine, Wisconsin 53404

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 49.0 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60° *(15°/15°)*** 0.8444 **Fuel weight** 7.031 lbs/gal *(0.843 kg/l)* **Oil SAE** 30 **API service classification** SE-CD **To motor** 6.419 gal *(24.296 l)* **Drained from motor** 5.738 gal *(21.718 l)* **Transmission and hydraulic lubricant** Case TFD Fluid **Final drive lubricant** Case FDL fluid **Total time engine was operated** 35 hours

ENGINE: Make Saab-Scania Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 5217709 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 5.00″ × 5.71″ *(127 mm × 145 mm)* **Compression ratio** 14.7 to 1 **Displacement** 673 cu in *(11028 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements with aspirator **Oil filter** full flow centrifugal, separate cartridge for turbocharger oil **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil **Fuel filter** two paper cartridges **Muffler** vertical **Cooling medium temperature control** two thermostats.

CHASSIS: Type four wheel drive with duals **Serial No.** 8854468 **Tread width** rear 76″ *(1930 mm)* to 140″ *(3556 mm)* front 76″ *(1930 mm)* to 140″ *(3556 mm)* **Wheel base** 110″ *(2794 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 59.4″ *(1509 mm)* Vertical distance above roadway 40.3″ *(1024 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 with partial (3) range operator controlled powershift **Advertised speeds mph *(km/h)*** first 2.0 *(3.2)* second 2.7 *(4.3)* third 3.1 *(5.0)* fourth 3.4 *(5.5)* fifth 4.2 *(6.8)* sixth 4.4 *(7.1)* seventh 5.2 *(8.4)* eighth 5.9 *(9.5)* ninth 7.4 *(11.9)* tenth 9.9 *(15.9)* eleventh 13.3 *(21.4)* twelfth 18.2 *(29.3)* reverse 3.4 *(5.5)*, 5.2 *(8.4)*, 7.4 *(11.9)*, 18.2 *(29.3)* **Clutch** multiple dry disc hydraulically operated by foot pedal **Brakes** multiple dry disc hydraulically operated by foot pedal **Steering** hydrostatic for front wheels, electro-hydraulic for rear wheels, front and rear wheels may be steered independently or together **Turning radius** (on concrete surface with front-wheel steering) with duals, right 353″ *(8.97 m)* left 353″ *(8.97 m)* with singles, 317″ *(8.05 m)* left 317″ *(8.05 m)* (on concrete surface with four-wheel steering) with duals, right 225″ *(5.72 m)* left 225″ *(5.72 m)* with singles, right 188″ *(4.78 m)* left 188″ *(4.78 m)* **Turning space diameter** (on concrete surface with front-wheel steering) with duals, right 734″ *(18.64 m)* left 734″ *(18.64 m)* with singles, right 664″ *(18.64 m)* left 664″ *(16.87 m)* (on concrete surface with four-

LUGGING ABILITY IN 8th (3I) GEAR

Crankshaft Speed rpm	2201	1977	1758	1539	1315	1091
Pull—lbs *(kN)*	14144 *(62.91)*	15239 *(67.78)*	16248 *(72.27)*	17301 *(76.96)*	17939 *(79.80)*	17723 *(78.83)*
Increase in Pull %	0	8	15	22	27	25
Power—Hp *(kW)*	224.81 *(167.64)*	216.66 *(161.56)*	204.57 *(152.55)*	190.05 *(141.72)*	167.99 *(125.27)*	137.74 *(102.71)*
Speed—Mph *(km/h)*	5.96 *(9.59)*	5.33 *(8.58)*	4.72 *(7.60)*	4.12 *(6.63)*	3.51 *(5.65)*	2.91 *(4.69)*
Slip %	3.79	4.18	4.48	4.94	5.25	5.25

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
Maximum Available Power—Two Hours	77.5
75% of Pull at Maximum Power—Ten Hours	78.0
50% of Pull at Maximum Power—Two Hours	77.0
50% of Pull at Reduced Engine Speed—Two Hours	76.0
Bystander in 12th (4H) gear	88.5

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Four 20.8-34; 8; 16 *(110)*	Four 20.8-34; 8; 16 *(110)*
Ballast	—Liquid (each)	None	None
	—Effect of front ballast (each)	–88 lb *(–40 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Four 20.8-34; 8; 16 *(110)*	Four 20.8-34; 8; 16 *(110)*
Ballast	—Liquid (each inner)	905 lb *(411 kg)*	None
	—Effect of front ballast (each)	313 lb *(142 kg)*	None
Height of Drawbar		18 in *(455 mm)*	18 in *(455 mm)*
Static Weight with Operator	—Rear	11640 lb *(5280 kg)*	11990 lb *(5439 kg)*
	—Front	16820 lb *(7630 kg)*	13760 lb *(6241 kg)*
	—Total	28460 lb *(12910 kg)*	25750 lb *(11680 kg)*

wheel steering) with duals, right 478" *(12.14 m)* left 478" *(12.14 m)* with singles, right 415" *(10.54 m)* left 415" *(10.54 m)* **Power take-off** 1000 rpm at 2200 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. Temperature at injection pump return was 141°F *(60.6°C)*. Eight 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 No. **1330.**

Report reissued. Supplemental permit for Case 4894 granted March 30, 1984.

Report reissued. Supplemental sales permit for Case International 4894 Powershift Diesel June 18, 1985.

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Board of Tractor Test Engineers

Case 4890 Diesel

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