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January 1996

Test 1710: Case IH 7230 Diesel 18-Speed (Chassis S/N JJA0065000 and Higher)

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1710—SUMMARY 205
CASE IH 7230 DIESEL
18 SPEED
(CHASSIS SERIAL NUMBERS JJA0065000 AND HIGHER)

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1003 rpm)					
172.41 (128.56)	2200	10.61 (40.16)	0.432 (0.263)	16.25 (3.20)	
Maximum Power (2 hours)					
184.97 (137.93)	1800	10.17 (38.48)	0.386 (0.235)	18.20 (3.58)	
VARYING POWER AND FUEL CONSUMPTION					
172.41 (128.56)	2200	10.61 (40.16)	0.432 (0.263)	16.25 (3.20)	Air temperature
151.39 (112.89)	2273	9.66 (36.55)	0.448 (0.272)	15.68 (3.09)	74°F (24°C)
115.17 (85.88)	2307	8.03 (30.41)	0.490 (0.298)	14.34 (2.82)	Relative humidity
78.29 (58.38)	2343	6.28 (23.78)	0.563 (0.343)	12.46 (2.46)	43%
39.80 (29.68)	2382	4.70 (17.79)	0.829 (0.504)	8.47 (1.67)	Barometer
1.05 (0.78)	2419	3.12 (11.81)	20.875 (12.698)	0.34 (0.07)	28.72" Hg (97.26 kPa)

Maximum Torque 586 lb.-ft. (795 Nm) at 1399 rpm
Maximum Torque Rise 42.6%
Torque rise at 1800 engine rpm 31%

DRAWBAR PERFORMANCE
(UNBALLASTED—FRONT DRIVE ENGAGED)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th Gear									
147.97 (110.34)	11489 (51.11)	4.83 (7.77)	2197	4.04	0.503 (0.306)	13.95 (2.75)	189 (87)	61 (16)	28.80 (97.53)
75% of Pull at Maximum Power—8th Gear									
117.18 (87.38)	8610 (38.30)	5.10 (8.21)	2288	2.76	0.536 (0.326)	13.10 (2.58)	188 (87)	57 (14)	28.75 (97.36)
50% of Pull at Maximum Power—8th Gear									
80.29 (59.87)	5746 (25.56)	5.24 (8.43)	2330	1.88	0.617 (0.375)	11.38 (2.24)	186 (85)	57 (14)	28.75 (97.36)
75% of Pull at Reduced Engine Speed—10th Gear									
117.40 (87.55)	8612 (38.31)	5.11 (8.23)	1734	2.93	0.455 (0.277)	15.43 (3.04)	185 (85)	57 (14)	28.75 (97.36)
50% of Pull at Reduced Engine Speed—10th Gear									
80.45 (59.99)	5744 (25.55)	5.25 (8.45)	1765	1.88	0.503 (0.306)	13.95 (2.75)	182 (83)	57 (14)	28.75 (97.36)

Location of Test: Tractor Testing Laboratory,
University of Nebraska, Lincoln, Nebraska 68583-
0832

Dates of Test: May 1-10, 1996

Manufacturer: Case Corporation, 700 State Street,
Racine, Wisconsin 53404

FUEL OIL and TIME: Fuel No. 2 Diesel Cetane
No. 50.6 Specific gravity converted to 60°/60°
F (15°/15°C) 0.8432 Fuel weight 7.021 lbs/gal
(0.841 kg/l) Oil SAE 15W-40 API service
classification CG-4, CE, CD-II To motor 4.393
gal (16.630 l) Drained from motor 4.053 gal
(15.342 l) Transmission and hydraulic lubricant
Case IH Hytran Plus fluid Front axle lubricant
Case IH 135 HEP Gear Lube SAE 85W140 Total
time engine was operated 17.5 hours.

ENGINE: Make Consolidated Diesel Corporation
Diesel Type six cylinder vertical with turbocharger
Serial No. *45259892* Crankshaft lengthwise
Rated engine speed 2200 Bore and stroke (as
specified) 4.488" × 5.315" (114.0 mm × 135.0 mm)
Compression ratio 16.5 to 1 Displacement 505
cu in (8268 ml) Starting system 12 volt Lubrication
pressure Air cleaner two paper elements and aspirator
Oil filter one full flow cartridge Oil cooler engine
coolant heat exchanger for crankcase oil, radiator for
hydraulic and transmission oil Fuel filter two paper
elements Fuel cooler radiator for return fuel Muffler
vertical Cooling medium temperature control
two thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel
rate: 74.4-82.2 lb/h (33.7-37.3 kg/h) High idle:
2370-2530 rpm Turbo boost nominal 17.4-23.2 psi
(120-160 kPa) as measured 18.5 psi (128 kPa)

CHASSIS: Type front wheel assist Serial No.
JJA0065025 Tread width rear 60.0" (1524 mm) to
133.0" (3378 mm) front 60.1" (1527 mm) to 94.8" (2408
mm) Wheel base 118.3" (3006 mm) Hydraulic
control system direct engine drive Transmission
selective gear fixed ratio with full range operator
controlled powershift Nominal travel speeds mph
(km/h) first 1.85 (2.97) second 2.11 (3.40) third 2.44
(3.92) fourth 2.80 (4.50) fifth 3.21 (5.16) sixth 3.68
(5.92) seventh 4.29 (6.91) eighth 4.92 (7.92) ninth 5.68
(9.14) tenth 6.51 (10.48) eleventh 7.47 (12.02) twelfth
8.57 (13.79) thirteenth 9.80 (15.77) fourteenth 11.24
(18.09) fifteenth 12.97 (20.87) sixteenth 14.87 (23.93)
seventeenth 17.06 (27.45) eighteenth 19.57 (31.49)
reverse 2.65 (4.27), 3.04 (4.90), 6.18 (9.94), 7.08 (11.40)
Clutch multiple wet disc hydraulically actuated by
foot pedal Brakes wet multiple disc hydraulically
actuated by two foot pedals which can be locked

DRAWBAR PERFORMANCE AT 1800 RPM **MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kWh)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th Gear									
115.05 (85.80)	16884 (75.10)	2.56 (4.11)	2274	13.61	0.582 (0.354)	12.07 (2.38)	185 (85)	53 (12)	29.06 (98.41)
5th Gear									
136.91 (102.10)	16730 (74.42)	3.07 (4.94)	2243	8.31	0.539 (0.328)	13.04 (2.57)	186 (85)	51 (11)	29.07 (98.44)
6th Gear									
142.54 (106.30)	15707 (69.87)	3.40 (5.48)	2167	8.24	0.519 (0.316)	13.52 (2.66)	187 (86)	54 (12)	29.05 (98.37)
7th Gear									
151.67 (113.10)	14910 (66.32)	3.81 (6.14)	2051	6.91	0.479 (0.292)	14.65 (2.89)	187 (86)	54 (12)	29.05 (98.37)
8th Gear									
154.96 (115.56)	15158 (67.43)	3.83 (6.17)	1804	7.30	0.464 (0.282)	15.14 (2.98)	189 (87)	59 (15)	28.79 (97.49)
9th Gear									
159.24 (118.74)	13201 (58.72)	4.52 (7.28)	1804	5.29	0.456 (0.277)	15.40 (3.03)	188 (87)	61 (16)	28.79 (97.49)
10th Gear									
159.70 (119.09)	11468 (51.01)	5.22 (8.40)	1796	4.29	0.452 (0.275)	15.52 (3.06)	190 (88)	61 (16)	28.78 (97.46)
11th Gear									
156.90 (117.00)	9716 (43.22)	6.06 (9.75)	1801	3.45	0.456 (0.278)	15.38 (3.03)	188 (87)	62 (17)	28.76 (97.39)
12th Gear									
156.93 (117.03)	8412 (37.42)	7.00 (11.26)	1804	2.85	0.459 (0.279)	15.30 (3.01)	188 (86)	62 (17)	28.75 (97.36)
13th Gear									
155.50 (115.95)	7256 (32.28)	8.04 (12.93)	1802	2.32	0.467 (0.284)	15.05 (2.96)	189 (87)	61 (16)	28.75 (97.36)

together **Steering** hydrostatic **Power take-off** 1000 rpm at 2193 engine rpm (optional dual speed — 540 rpm at 2229 engine rpm or 1000 rpm at 2193 engine rpm) **Unladen tractor mass** 17790 lb (8069 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 133°F (56°C). The performance results on this summary were taken from OECD tests conducted under the Code II Restricted Standard Test Code procedure.

NOTE: The performance figures on this report apply to tractors with chassis serial numbers JJA0065000 and higher.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1710**, Summary 205, May 28, 1996.

LOUIS I. LEVITICUS
Engineer-in-Charge

L.L. BASHFORD
R.D. GRISSO
M.F. KOCHER

Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB

dB(A)

At 75% load in 6th Gear	73.5
Bystander in 18th Gear	85.0

TIRES AND WEIGHT

Rear Tires—No., size, ply & psi (kPa)
Front Tires—No., size, ply & psi (kPa)

Tested Without Ballast

Two 18.4R42; **, 20 (140)
Two 14.9R30; ***, 14 (95)

Height of Drawbar

16.5 in (420 mm)

Static Weight with Operator—Rear
—Front
—Total

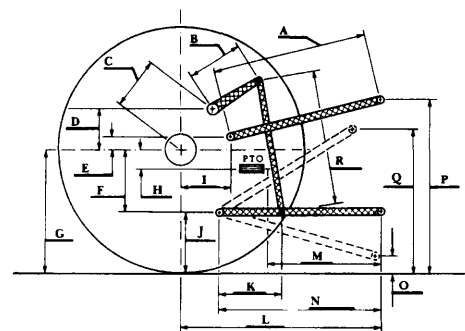
12290 lb (5575 kg)
5664 lb (2569 kg)
17954 lb (8144 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: None

Maximum Force Exerted Through Whole Range:	9504 lbs	(42.3 kN)
i) Opening pressure of relief valve:	NA	
Sustained pressure with pump stalled:	2660 psi	(183 bar)
ii) Pump delivery rate at minimum pressure:	29.3 GPM	(110.9 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	27.5 GPM	(104.1 l/min)
Delivery pressure:	2180 psi	(150 bar)
Power:	35.0 HP	(26.1 kW)



THREE POINT HITCH PERFORMANCE (SAE Dynamic Test)

Observed Maximum Pressure psi. (bar)	2700	(186)
Location	Hydraulic pump	
Hydraulic oil temperature °F (°C)	140	(60)
Location	Transmission sump	

Maximum Lift Capacity

QUICK ATTACH	Yes	
CATEGORY:	III	
LOAD lbs (kg)	10875	(4933)
TIME sec	3.90	
HITCH MOVEMENT in (mm)		
Lowest position	15.0	(381)
Top of timed range	*40.0	(1016)
Highest position	40.1	(1019)
LOAD CG MOVEMENT in (mm)		
Lowest position	15.0	(381)
Top of timed range	41.7	(1059)
Highest position	41.8	(1062)

*The observed power range 25.0 in (635 mm) is less than the minimum power range for CAT III, 26.0 in (660 mm) specified by ASAE Standard S217.10.

HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	25.8	654	25.8	654
B	15.0	381	15.0	381
C	21.9	557	21.9	557
D	16.6	422	16.6	422
E	6.7	169	9.8	250
F	13.1	332	13.1	332
G	33.7	855	32.6	827
H	3.5	90	3.5	90
I	24.7	627	24.7	627
J	20.6	523	19.5	495
K	22.8	579	22.8	579
L	51.4	1306	51.4	1306
*L'	—	—	55.4	1407
M	20.1	510	20.1	510
N	33.9	861	33.9	861
O	10.1	257	8.0	203
P	42.6	1083	41.5	1054
Q	37.1	942	35.5	902
R	31.3	794	32.0	813

*L' to Quick Attach ends



CASE IH 7230 DIESEL

Agricultural Research Division
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Darrell Nelson, Dean and Director