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## Tests 2177 & 2178: Case IH JX 85 Diesel Series II

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# SUMMARY OF OECD TESTS 2177 & 2178—NEBRASKA SUMMARY 462

## CASE IH JX 85 DIESEL

### 12 SPEED

### Chassis Serial numbers HFJ013287 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
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#### MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed (PTO speed-614 rpm)					
78.4 (58.5)	2500	4.59 (17.36)	0.408 (0.248)	17.11 (3.37)	
Standard Power Take-off Speed (540 rpm)					
76.4 (57.0)	2200	4.32 (16.35)	0.393 (0.239)	17.71 (3.49)	

#### VARYING POWER AND FUEL CONSUMPTION

78.4 (58.5)	2500	4.59 (17.36)	0.408 (0.248)	17.11 (3.37)	Air temperature
70.5 (52.6)	2639	4.42 (16.73)	0.437 (0.266)	15.94 (3.14)	81°F (27°C)
53.2 (39.7)	2659	3.72 (14.08)	0.487 (0.296)	14.31 (2.82)	Relative humidity
35.8 (26.7)	2681	2.76 (10.43)	0.536 (0.326)	12.99 (2.56)	45%
18.1 (13.5)	2708	2.18 (8.25)	0.841 (0.511)	8.29 (1.63)	Barometer
--	2750	1.27 (4.81)	--	--	27.0" Hg (91.3 kPa)

Maximum Torque - 239.8 lb.-ft. (325.1 Nm) at 1350 rpm  
 Maximum Torque Rise - 45.2%  
 Torque rise at 2000 engine rpm - 18%

#### 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 (III-1) Gear									
60.9 (45.4)	4065 (18.08)	5.62 (9.04)	2500	6.2	0.524 (0.318)	13.20 (2.60)	171 (77)	73 (23)	27.2 (91.7)
75% of Pull at Maximum Power—8th (III-1) Gear									
49.1 (36.6)	3050 (13.56)	6.04 (9.72)	2640	4.5	0.597 (0.363)	11.57 (2.28)	171 (77)	73 (23)	27.2 (91.7)
50% of Pull at Maximum Power—8th (III-1) Gear									
33.8 (25.2)	2035 (9.04)	6.23 (10.02)	2670	2.7	0.667 (0.406)	10.36 (2.04)	171 (77)	73 (23)	27.2 (91.7)
75% of Pull at Reduced Engine Speed—9th (II-4) Gear									
48.7 (36.3)	3035 (13.49)	6.02 (9.68)	2061	4.4	0.516 (0.314)	13.40 (2.64)	171 (77)	73 (23)	27.2 (91.7)
50% of Pull at Reduced Engine Speed—9th (II-4) Gear									
33.7 (25.1)	2040 (9.08)	6.20 (9.97)	2085	2.7	0.579 (0.352)	11.93 (2.35)	171 (77)	73 (23)	27.2 (91.7)

**Locations of tests:** DAEMTC (The Directorate of Agricultural Equipment and Machinery Testing Centre) Ankara, Turkey and CNH America LLC Burr Ridge, IL, USA

**Dates of Test:** July - August, 2004

**Manufacturer:** CNH America LLC, 700 State St. Racine, WI. 53404 USA

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.837 **Fuel weight** 6.97 lbs/gal (0.835 kg/l) **Oil** SAE 20W-50 **API service classification** DM/12 **Transmission and hydraulic lubricant** BP Terrac Tractan 8 fluid **Front axle lubricant** BP Terrac Tractan 8 fluid

**ENGINE: Make** Iveco Diesel **Type** four cylinder vertical with turbocharger **Serial No.** \*639-997465\* **Crankshaft** lengthwise **Rated engine speed** 2500 **Bore and stroke** 4.094" x 4.528" (104.0 mm x 115.0 mm) **Compression ratio** 18.0 to 1 **Displacement** 238 cu in (3908 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** paper element **Oil filter** two cartridges **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

**CHASSIS: Type** 2WD & front wheel assist **Serial No.** 2WD-HFD018109, FWA-J9C7AA **Tread width** rear 59.6" (1515 mm) to 79.3" (2015 mm) front 2WD-54.1" (1375 mm) to 69.9" (1775 mm) FWA-60.2" (1530 mm) to 77.0" (1955 mm) **Wheel base** 2WD-90.7" (2305 mm), FWA-88.5" (2249 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.10 (1.77) second 1.70 (2.73) third 2.31 (3.71) fourth 2.57 (4.14) fifth 3.31 (5.32) sixth 3.96 (6.38) seventh 5.39 (8.67) eighth 6.05 (9.74) ninth 7.72 (12.42) tenth 9.33 (15.01) eleventh 12.69 (20.42) twelfth 18.18 (29.25) reverse 1.08 (1.74), 1.67 (2.68), 2.26 (3.64), 2.52 (4.06), 3.24 (5.21), 3.88 (6.25), 5.28 (8.50), 5.93 (9.55), 7.57 (12.18), 9.15 (14.72), 12.43 (20.01), 17.82 (28.67) **Clutch** dual dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2200 engine rpm and 1000 rpm at 2382 engine rpm **Unladen tractor mass** 2WD - 6825 lb (3095 kg), FWA - 7680 lb (3483 kg)

**DRAWBAR PERFORMANCE**  
**(Unballasted – Front Drive Engaged)**  
**MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F cool- ing med	Temp. °C Air dry bulb	Barom. inch Hg (kPa)
5th (I-4) Gear									
50.0 (37.3)	6520 (29.01)	2.88 (4.63)	2590	15.0	0.613 (0.373)	11.27 (2.22)	185 (85)	75 (24)	27.0 (91.5)
6th (II-2) Gear									
55.0 (41.0)	5890 (26.20)	3.50 (5.63)	2500	10.7	0.565 (0.344)	12.23 (2.41)	185 (85)	75 (24)	27.0 (91.5)
7th (II-3) Gear									
57.7 (43.0)	4330 (19.27)	5.00 (8.04)	2504	6.5	0.546 (0.332)	12.64 (2.49)	185 (85)	75 (24)	27.0 (91.5)
8th (III-1) Gear									
60.9 (45.4)	4065 (18.08)	5.62 (9.04)	2500	6.2	0.524 (0.318)	13.20 (2.60)	185 (85)	75 (24)	27.0 (91.5)
9th (II-4) Gear									
58.0 (43.2)	2965 (13.20)	7.33 (11.79)	2503	4.2	0.514 (0.331)	12.69 (2.50)	185 (85)	75 (24)	27.0 (91.5)
10th (III-2) Gear									
56.7 (42.3)	2395 (10.65)	8.88 (14.30)	2500	3.7	0.548 (0.333)	12.61 (2.48)	185 (85)	75 (24)	27.0 (91.5)

**REPAIRS AND ADJUSTMENTS:** The fuel pump and fuel injectors were replaced.

**NOTE 1:** The PTO and drawbar results shown on this report are from tests conducted on the New Holland TD 90D.

**NOTE 2:** The performance data on this summary applies to tractor chassis serial numbers HFJ013287 and higher.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claim of 3 point lift capacity of 5950 lbs (2700 kg). The performance results on this summary were taken from OECD tests conducted under the Code II Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Reports No. **2177** & **2178**, Nebraska Summary 462, April 1 2005.

Leonard L. Bashford  
 Director

M.F. Kocher  
 V.I. Adamchuk  
 W.P. Campbell  
 Board of Tractor Test Engineers

**TRACTOR SOUND LEVEL WITHOUT CAB**

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 7th(II-3) Gear	88.4	88.2
Bystander	-	-

**Tested Without Ballast**

**TIRES AND WEIGHT**

**Rear tires** - No., size, ply & psi (kPa)  
**Front tires** - No., size, ply & psi (kPa)  
**Height of Drawbar**  
**Static Weight with operator**-Rear  
 - Front  
 - Total

**Front Wheel Assist**

Two 18.4R30; \*\*, 22(150)  
 Two 12.4R24; \*\*, 22(150)  
 15.2 in (410 mm)  
 4570 lb (2073 kg)  
 3290 lb (1492 kg)  
 7860 lb (3565 kg)

**2WD**

Two 420/85R34; \*\*, 22(150)  
 Two 9.00-16; 8; 44 (300)  
 14.8 in (405 mm)  
 4700 lb (2131 kg)  
 2280 lb (1034 kg)  
 6980 lb (3165 kg)

## DRAWBAR PERFORMANCE

(Unballasted - 2WD)

### FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F cool- ing med	°C Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—8th(III-1) Gear</b>									
56.7 (42.3)	3800 (16.90)	5.59 (9.00)	2501	10.3	0.565 (0.344)	12.23 (2.41)	154 (68)	72 (22)	27.1 (91.7)
<b>75% of Pull at Maximum Power—8th(III-1) Gear</b>									
46.4 (34.6)	2850 (12.68)	6.11 (9.83)	2637	7.1	0.636 (0.387)	10.86 (2.14)	154 (68)	72 (22)	27.1 (91.7)
<b>50% of Pull at Maximum Power—8th(III-1) Gear</b>									
32.1 (23.9)	1900 (8.45)	6.33 (10.18)	2670	5.0	0.732 (0.445)	9.44 (1.86)	154 (68)	72 (22)	27.1 (91.7)
<b>75% of Pull at Reduced Engine Speed—9th(II-4) Gear</b>									
46.4 (34.6)	2850 (12.68)	6.11 (9.84)	2069	7.1	0.518 (0.315)	13.35 (2.63)	154 (68)	72 (22)	27.1 (91.7)
<b>50% of Pull at Reduced Engine Speed—9th(II-4) Gear</b>									
32.0 (23.9)	1895 (8.43)	6.33 (10.19)	2095	4.9	0.596 (0.362)	11.69 (2.28)	154 (68)	72 (22)	27.1 (91.7)
<b>MAXIMUM POWER IN SELECTED GEARS</b>									
6th(II-2) Gear									
44.3 (33.0)	4575 (20.34)	3.63 (5.84)	2617	15.0	0.669 (0.407)	10.34 (2.04)	162 (72)	75 (24)	27.0 (91.5)
7th(II-3) Gear									
54.8 (40.9)	4165 (18.53)	4.93 (7.94)	2500	11.1	0.582 (0.354)	11.88 (2.34)	162 (72)	75 (24)	27.0 (91.5)
8th(III-1) Gear									
56.7 (42.3)	3800 (16.90)	5.59 (9.00)	2501	10.3	0.565 (0.344)	12.23 (2.41)	162 (72)	75 (24)	27.0 (91.5)
9th(II-4) Gear									
55.4 (41.3)	2825 (12.56)	7.36 (11.85)	2498	7.3	0.567 (0.345)	12.18 (2.40)	162 (72)	75 (24)	27.0 (91.5)
10th(III-2) Gear									
54.3 (40.5)	2265 (10.08)	8.98 (14.45)	2500	6.5	0.571 (0.347)	12.10 (2.38)	162 (72)	75 (24)	27.0 (91.5)

### THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: none

Maximum Force Exerted Through Whole Range: 3620 lbs (16.1 kN)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 2830 psi (195 bar)
- ii) Pump delivery rate at minimum pressure and rated engine speed: 15.6 GPM (59.0 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 14.7 GPM (55.7 l/min)
- Delivery pressure: 2110 psi (145 bar)
- Power: 18.1 HP (13.5 kW)

### THREE POINT HITCH PERFORMANCE (SAE test)

Observed Maximum Pressure psi. (bar)	2580 (178)
Location:	hydraulic manifold
Hydraulic oil temperature: °F (°C)	149 (65)
Location:	hydraulic sump
Category:	II
Quick attach:	none

SAE Static Test—System pressure 2325 psi (160 Bar)

Hitch point distance to ground level in. (mm)	8.0 (203)	15.0 (380)	21.9 (556)	29.0 (737)	36.0 (914)
Lift force on frame lb	5652	5862	5487	5658	5002
" " " " " " (kN)	(25.1)	(26.1)	(24.4)	(25.2)	(22.3)

### HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	32.9	835	31.6	803
B	10.0	255	10.0	255
C	11.6	295	11.6	295
D	11.6	295	11.6	295
E	7.9	200	9.4	240
F	7.9	200	7.9	200
G	28.4	720	27.4	695
H	0.2	5	0.2	5
I	6.9	175	6.9	175
J	20.5	520	19.5	495
K	18.1	460	21.1	535
L	40.4	1025	40.4	1025
M	28.1	715	28.1	715
N	38.2	970	38.2	970
O	7.9	200	8.0	203
P	45.3	1130	38.3	973
Q	37.0	940	33.6	854
R	23.8	605	25.7	654

