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2011

## Nebraska Summary: S800 Case-IH Puma 185

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# SUMMARY OF OECD TEST 2613–NEBRASKA SUMMARY 800

## CASE IH PUMA 185 DIESEL

### 19 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/ltr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1162 rpm)</b>					
165.5 (123.4)	2200	9.21 (34.88)	0.388 (0.236)	17.97 (3.54)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
185.1 (138.0)	1893	9.63 (36.45)	0.362 (0.220)	19.22 (3.79)	
<b>Maximum Power (1 hour)</b>					
187.5 (139.8)	1800	9.57 (36.24)	0.356 (0.216)	19.59 (3.86)	

#### VARYING POWER AND FUEL CONSUMPTION

165.5 (123.4)	2200	9.21 (34.88)	0.388 (0.236)	17.97 (3.54)	Air temperature
145.5 (108.5)	2274	8.38 (31.74)	0.401 (0.244)	17.36 (3.42)	68°F (20°C)
109.8 (81.9)	2289	6.78 (25.67)	0.430 (0.261)	16.21 (3.19)	Relative humidity
73.6 (54.9)	2300	5.32 (20.12)	0.502 (0.306)	13.85 (2.73)	44%
37.0 (27.6)	2313	3.77 (14.28)	0.709 (0.432)	9.82 (1.93)	Barometer
--	2330	2.23 (8.46)	--	--	29.3" Hg (99.3 kPa)

Maximum Torque - 595.6 lb.-ft. (802.1 Nm) at 1400 rpm  
 Maximum Torque rise - 49.7%  
 Torque rise at 1800 engine rpm - 38%  
 Power increase at 1800 engine rpm - 13.3%

#### 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)	Temp. °F (°C) cool- ing med	Barom. inch Hg (kPa)
<b>Maximum Power—10th Gear</b>							
147.6 (110.1)	9930 (44.18)	5.57 (8.97)	2100	4.8	0.446 (0.271)	176 (80)	63 (17)
<b>75% of Pull at Maximum Power—10th Gear</b>							
113.7 (84.8)	7440 (33.10)	5.73 (9.22)	2135	3.8	0.477 (0.290)	176 (80)	63 (17)
<b>50% of Pull at Maximum Power—10th Gear</b>							
78.2 (58.3)	4995 (22.21)	5.87 (9.44)	2155	2.8	0.552 (0.336)	178 (81)	63 (17)
<b>75% of Pull at Reduced Engine Speed—11th Gear</b>							
115.7 (86.3)	7435 (33.08)	5.83 (9.39)	1825	3.7	0.450 (0.274)	174 (79)	63 (17)
<b>50% of Pull at Reduced Engine Speed—11th Gear</b>							
78.2 (58.3)	4980 (22.15)	5.89 (9.48)	1835	2.8	0.498 (0.303)	176 (80)	63 (17)

**Location of tests:** HBLFA Francisco Josephinum  
 BLT Biomass-Logistics-Technology,  
 Rottenhauser, Strasse, 1, AT, 3250, Wieselburg,  
 Austria

**Dates of tests:** December 2010 to April 2011.

**Manufacturer:** CNH UK Limited Basildon, Essex  
 SS14 3AD United Kingdom

**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**  
 10W30 **API service classification** CG-4  
**Transmission and hydraulic lubricant** Akcela  
 Nexlore fluid **Front axle lubricant** Akcela  
 Nexlore fluid

**ENGINE: Make** F.P.T. Diesel **Type** six cylinder  
 vertical with turbocharger and air to air intercooler  
 and D.E.F. (diesel exhaust fluid) exhaust treatment.  
**Serial No.** 518516 **Crankshaft** lengthwise **Rated  
 engine speed** 2200 **Bore and stroke** 4.094" x  
 5.197" (104.0 mm x 132.0 mm) **Compression ratio**  
 17.0 to 1 **Displacement** 410 cu in (6728 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 canisters  
**Muffler** underhood **Exhaust** vertical **Cooling  
 medium temperature control** thermostat and  
 variable speed fan

**CHASSIS: Type** front wheel assist **Serial No.**  
 ZABS09163 **Tread width** rear 60.2" (1530 mm) to  
 87.8" (2230 mm) front 61.4" (1560 mm) to 89.0" (2260  
 mm) **Wheelbase** 113.5" (2884 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 1.17 (1.89) second 1.40 (2.25) third 1.68  
 (2.71) fourth 2.01 (3.24) fifth 2.39 (3.85) sixth 2.86  
 (4.60) seventh 3.40 (5.47) eighth 4.06 (6.54) ninth  
 4.88 (7.86) tenth 5.83 (9.39) eleventh 6.95 (11.18)  
 twelfth 8.30 (13.35) thirteenth 9.82 (15.80)  
 fourteenth 11.74 (18.89) fifteenth 14.11 (22.70)  
 sixteenth 16.86 (27.13) seventeenth 20.06 (32.29)  
 eighteenth 25.10 (40.39) nineteenth 26.09  
 (42.00) (electronically limited) reverse 2.59 (4.17),  
 3.10 (4.99), 3.73 (6.00), 4.45 (7.16), 5.30 (8.53),  
 6.33 (10.18) **Clutch** multiple wet disc electro-  
 hydraulically operated by foot pedal **Brakes** wet  
 disc hydraulically operated by two foot pedals that  
 can be locked together **Steering** hydrostatic **Power  
 take-off** 540 rpm at 1950 engine rpm or 1000 rpm  
 at 1893 engine rpm **Unladen tractor mass** 18135  
 lb (8225 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 Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
7th Gear									
132.6 (98.9)	16655 (74.09)	2.99 (4.81)	2120	15.0	0.482 (0.293)	14.47 (2.85)	178 (81)	57 (14)	29.8 (101.0)
8th Gear									
146.8 (109.5)	16435 (73.11)	3.35 (5.39)	2000	14.0	0.457 (0.278)	15.28 (3.01)	180 (82)	55 (13)	29.8 (101.0)
9th Gear									
156.6 (116.8)	15415 (68.56)	3.81 (6.13)	1800	9.3	0.429 (0.261)	16.24 (3.20)	176 (80)	55 (13)	29.8 (101.0)
10th Gear									
158.2 (118.0)	12570 (55.91)	4.72 (7.60)	1800	6.2	0.427 (0.260)	16.34 (3.22)	176 (80)	59 (15)	29.8 (101.0)
11th Gear									
161.3 (120.3)	10640 (47.33)	5.69 (9.15)	1800	5.0	0.418 (0.254)	16.70 (3.29)	174 (79)	57 (14)	29.8 (101.0)
12th Gear									
158.1 (117.9)	8665 (38.53)	6.84 (11.02)	1800	4.4	0.427 (0.260)	16.34 (3.22)	180 (82)	57 (14)	29.8 (101.0)
13th Gear									
163.2 (121.7)	7520 (33.45)	8.14 (13.10)	1800	4.0	0.414 (0.252)	16.85 (3.32)	178 (81)	55 (13)	29.8 (101.0)
14th Gear									
161.6 (120.5)	6220 (27.67)	9.74 (15.67)	1800	3.6	0.419 (0.255)	16.65 (3.28)	176 (80)	55 (13)	29.8 (101.0)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**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 implement pump flow claim of 32 GPM (121 lpm) with the standard system. This tractor did not meet the manufacturer's 3 point lift claims of 10200 lbs (4626 kg) with 90 mm lift cylinders nor 13400 lbs (6078 kg) with 100 mm lift cylinders. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2613** Nebraska Summary 800, January 26, 2012.

Roger M. Hoy  
 Director

M.F. Kocher  
 D.R. Keshwani  
 P.J. Jasa  
 Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At no load in 9th gear	68.0	68.0
Bystander	--	--

**TIRES, BALLAST 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

**Tested without ballast**

Two 710/70R38; \*\*; 15(100)  
 Two 600/65R28; \*\*; 16(110)  
 19.7 in (500 mm)  
 10925 lb (4955 kg)  
 7375 lb (3345 kg)  
 18300 lb (8300 kg)

This vehicle is equipped with an electronically controlled engine Power management system that monitors and boosts engine power output in certain circumstances. This is achieved by electronically changing the characteristics of the engine power-speed curve. The engine Power management function ("boosted" power level) becomes active in the higher transmission gears (16th and above) and for road transport applications. The system is also activated when power transfer through the PTO and hydraulic pump exceeds a preset level (and forward speed exceeds 0.5 km/h), for mobile PTO driven implement applications. An override system is provided to enable PTO operations at the "boosted" power level while the vehicle is stationary for test purposes. The results of this PTO output test are presented below.

### 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1162 rpm)</b>					
195.8 (146.0)	2200	10.56 (39.97)	0.376 (0.229)	18.54 (3.65)	
<b>Standard Power Take-off Speed - (1000 rpm)</b>					
212.6 (158.5)	1893	10.93 (41.38)	0.358 (0.218)	19.44 (3.83)	
<b>Maximum Power (1 hour)</b>					
214.2 (159.7)	1800	10.88 (41.18)	0.353 (0.215)	19.69 (3.88)	

### VARYING POWER AND FUEL CONSUMPTION

195.8 (146.0)	2200	10.56 (39.97)	0.376 (0.229)	18.54 (3.65)	Air temperature
171.0 (127.5)	2260	9.50 (35.97)	0.387 (0.235)	17.99 (3.54)	73°F (23°C)
129.3 (96.4)	2278	7.68 (29.08)	0.414 (0.252)	16.80 (3.31)	Relative humidity
86.9 (64.8)	2296	5.85 (22.14)	0.469 (0.285)	14.86 (2.93)	43%
43.7 (32.6)	2310	3.99 (15.10)	0.635 (0.387)	10.96 (2.16)	Barometer
--	2328	2.24 (8.47)	--	--	29.1"Hg (98.4 kPa)

Maximum Torque 695.7 lb.-ft. (943.3 Nm) at 1500 rpm  
 Maximum Torque Rise - 48.9%  
 Torque rise at 1800 rpm - 33%  
 Power increase at 1800 engine rpm - 9.4%

## HYDRAULIC PERFORMANCE

CATEGORY: III

Quick Attach: No

OECD Static test

Lift cylinders:

2x90 mm                      2x100 mm

Maximum force exerted through whole range:      9465 lbs (42.1 kN)      12500 lbs (55.6 kN)

	<u>Standard pump - 32 gpm</u>	<u>High flow pump - 35 gpm</u>
i) Sustained pressure at compensator cutoff:	2975 psi (205 bar)	3045 psi (210 bar)
	<b><u>two outlet sets combined</u></b>	
ii) Pump delivery rate at minimum pressure:	29.6 GPM (112.0 l/min)	35.0 GPM (132.5 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	26.2 GPM (99.1 l/min)	31.8 GPM (120.4 l/min)
Delivery pressure:	2685 psi (185 bar)	2610 psi (180 bar)
Power:	41.0 HP (30.6 kW)	48.4 HP (36.1 kW)

	<u>single outlet set</u>	<u>single outlet set</u>
ii) Pump delivery rate at minimum pressure:	26.2 GPM (99.1 l/min)	26.6 GPM (100.7 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	24.3 GPM (91.8 l/min)	25.4 GPM (96.1 l/min)
Delivery pressure:	2465 psi (170 bar)	2465 psi (170 bar)
Power:	34.9 HP (26.0 kW)	36.5 HP (27.2 kW)

### HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	32.1	815
B	15.0	380
C	15.1	383
D	14.6	372
E	10.8	275
F	10.6	270
G	36.4	925
H	2.4	60
I	17.7	450
J	25.8	655
K	26.9	682
L	48.2	1224
M	23.1	587
N	38.3	974
O	9.0	230
P	52.8	1340
Q	38.4	975
R	39.8	1010

