

# SUMMARY OF OECD TESTS 2813 & 2815 — NEBRASKA SUMMARY 943

## CASE IH FARMALL 105C DIESEL

### 12 SPEED

#### POWER TAKE-OFF PERFORMANCE (Tractor equipped with 2 post ROPS)

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.l/l)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed (PTO speed—642 rpm)</b>					
94.4 (70.4)	2306	5.96 (22.55)	0.442 (0.269)	15.84 (3.12)	
<b>Standard Power Take-off speed (538 rpm)</b>					
96.7 (72.1)	1930	5.71 (21.62)	0.413 (0.251)	16.95 (3.34)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
94.4 (70.4)	2306	5.96 (22.55)	0.442 (0.269)	15.84 (3.12)	Air temperature
81.0 (60.4)	2328	5.39 (20.41)	0.465 (0.283)	15.02 (2.96)	63°F (17°C)
61.2 (45.6)	2347	4.35 (16.47)	0.497 (0.302)	14.07 (2.77)	Relative humidity
41.3 (30.8)	2374	3.41 (12.89)	0.577 (0.351)	12.13 (2.39)	71%
20.8 (15.5)	2391	2.36 (8.95)	0.796 (0.484)	8.78 (1.73)	Barometer
--	2401	1.54 (5.84)	--	--	30.0" Hg (101.5 kPa)
Maximum torque -302.2 lb.-ft. (409.7 Nm) at 1486 rpm Maximum torque rise -40.6% Torque rise at 1840 engine rpm -27% Power increase at 1930 rpm -2.4%					

**Location of tests:** Alma Mater Studiorum, University  
Di Bologna, Via Gandolfi, 19-40057, Cadriano,  
Bologna, Italy

**Dates of tests:** August to December, 2013

**Manufacturer:** CNH Italia SpA, Viale delle Nazioni  
55, Modena, Italy

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.840  
**Fuel weight** 6.99 lbs/gal (0.838 kg/l) **Oil** SAE 15W40  
**API service classification** CJ-4 **Transmission and hydraulic lubricant** Akcela Nexplore fluid **Front axle lubricant** Akcela Nexplore fluid

**ENGINE:** Make FPT Industrial Diesel **Type** four cylinder vertical with turbocharger and air to air intercooler **Serial No.** 000136201 **Crankshaft lengthwise Rated engine speed** 2300 **Bore and stroke** 3.898" x 4.331" (99.0 mm x 110.0 mm) **Compression ratio** 17.1 to 1 **Displacement** 207 cu in (3387 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Exhaust** regenerative particulate filter integrated within an underhood muffler with vertical outlet **Cooling medium temperature control** thermostat

#### POWER TAKE-OFF PERFORMANCE (Tractor equipped with Cab)

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.l/l)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed (PTO speed—641 rpm)</b>					
94.5 (70.5)	2301	5.96 (22.55)	0.440 (0.268)	15.89 (3.13)	
<b>Standard Power Take-off speed (540 rpm)</b>					
96.6 (72.0)	1938	5.72 (21.64)	0.414 (0.252)	16.90 (3.33)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
94.5 (70.5)	2301	5.96 (22.55)	0.440 (0.268)	15.89 (3.13)	Air temperature
81.3 (60.6)	2326	5.43 (20.55)	0.467 (0.284)	14.97 (2.95)	67°F (19°C)
61.4 (45.8)	2345	4.39 (16.61)	0.499 (0.304)	14.01 (2.76)	Relative humidity
41.4 (30.9)	2372	3.43 (13.00)	0.579 (0.352)	12.08 (2.38)	67%
20.9 (15.6)	2389	2.38 (9.02)	0.798 (0.486)	8.76 (1.73)	Barometer
--	2399	1.57 (5.94)	--	--	30.1" Hg (101.8 kPa)
Maximum torque -303.4 lb.-ft. (411.4 Nm) at 1488 rpm Maximum torque rise -40.5% Torque rise at 1840 engine rpm -26% Power increase at 1938 rpm -2.2%					

**CHASSIS:** **Type** front wheel assist **Serial No.** ZDJX 50765 **Tread width** rear 52.6" (1337 mm) to 76.3" (1937 mm) front 48.6" (1235 mm) to 76.3" (1937 mm) **Wheel base** 88.9" (2258 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph(km/h)** first 1.34 (2.15) second 1.99 (3.20) third 2.95 (4.74) fourth 3.12 (5.02) fifth 4.32 (6.95) sixth 4.64 (7.47) seventh 6.87 (11.06) eighth 7.34 (11.82) ninth 10.09 (16.24) tenth 10.94 (17.60) eleventh 16.18 (26.04) twelfth 23.75 (38.22) reverse 1.31 (2.11), 1.95 (3.15), 2.89 (4.66), 3.07 (4.94), 4.23 (6.81), 4.57 (7.35), 6.76 (10.88), 7.22 (11.63), 9.92 (15.96), 10.75 (17.30), 15.91 (25.60), 23.36 (37.58) **Clutch** dual dry disc operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1938 engine rpm or 1000 rpm at 1926 engine rpm **Unladen tractor mass** w/2 post ROPS - 7595 lbs (3445 kg), w/cab - 8400 lb (3810 kg)

**Famall 105C - with 2 post ROPS  
(Unballasted - Front Drive Engaged)**

**DRAWBAR PERFORMANCE**

**FUEL CONSUMPTION CHARACTERISTICS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		Temp.°F (°C)	Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	cool- ing med	
<b>Maximum Power—7th(3M)Gear</b>								
59.8 (44.6)	3490 (15.53)	6.43 (10.34)	2302	7.4	0.589 (0.358)	11.88 (2.34)	199 (93)	46 (8) 29.9 (101.4)
<b>75% of Pull at Maximum Power—7th(3M) Gear</b>								
46.1 (34.4)	2615 (11.65)	6.61 (10.63)	2331	5.7	0.666 (0.405)	10.51 (2.07)	199 (93)	45 (7) 29.9 (101.4)
<b>50% of Pull at Maximum Power—7th(3M)Gear</b>								
31.4 (23.4)	1745 (7.77)	6.74 (10.85)	2356	4.8	0.830 (0.505)	8.43 (1.66)	201 (94)	45 (7) 29.9 (101.4)
<b>75% of Pull at Reduced Engine Speed—8th(1H) Gear</b>								
46.2 (34.4)	2620 (11.65)	6.61 (10.63)	2176	5.6	0.586 (0.356)	11.94 (2.35)	199 (93)	45 (7) 29.9 (101.4)
<b>50% of Pull at Reduced Engine Speed—8th(1H) Gear</b>								
31.4 (23.4)	1745 (7.77)	6.75 (10.85)	2208	4.7	0.721 (0.438)	9.71 (1.91)	199 (93)	43 (6) 29.9 (101.4)

**MAXIMUM POWER IN SELECTED GEARS**

<b>6th(2M) Gear</b>								
60.5 (45.1)	6265 (27.87)	3.62 (5.83)	2102	15.0	0.610 (0.371)	11.47 (2.26)	199 (93)	52 (11) 29.9 (101.4)
<b>7th(3M) Gear</b>								
75.2 (56.1)	5465 (24.32)	5.16 (8.31)	1943	11.6	0.514 (0.313)	13.60 (2.68)	199 (93)	52 (11) 29.9 (101.4)
<b>8th(1H) Gear</b>								
76.8 (57.3)	5140 (22.86)	5.60 (9.02)	1938	10.0	0.505 (0.307)	13.86 (2.73)	201 (94)	50 (10) 29.9 (101.4)
<b>9th(4M) Gear</b>								
76.7 (57.2)	3630 (16.14)	7.93 (12.76)	1946	7.5	0.506 (0.308)	13.81 (2.72)	201 (94)	48 (9) 29.9 (101.4)

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

**NOTE:** The performance results on this report were obtained from tests carried out on the New Holland T4.105 Diesel.

**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 remote hydraulic flow claims of 12.5 GPM for standard pump nor 16.9 GPM with optional pump. This tractor did not meet the manufacturer's 3 point lift capacity claim of 5620 lbs. The performance results on this summary were taken from tests conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Reports No. **2813** and **2815**, Nebraska Summary 943, July 11, 2014.

Roger M. Hoy  
Director

M.F. Kocher  
S. Pitla  
P.J. Jasa  
Board of Tractor Test Engineers

**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

**Tested without ballast**

Two 540/65R34;\*\*,23 (160)  
Two 440/65R24;\*\*,23 (160)  
18.1 in (460 mm)  
4640 lb (2105 kg)  
3120 lb (1415 kg)  
7760 lb (3520 kg)

**Famall 105C - with cab**  
**(Unballasted - Front Drive Engaged)**

**DRAWBAR PERFORMANCE**  
**FUEL CONSUMPTION CHARACTERISTICS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		Temp. °F (°C)	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—7th(3M)Gear</b>									
61.0 (45.5)	3515 (15.63)	6.51 (10.48)	2302	6.0	0.604 (0.368)	11.57 (2.28)	194 (90)	39 (4)	29.9 (101.1)
<b>75% of Pull at Maximum Power—7th(3M) Gear</b>									
47.2 (35.2)	2635 (11.72)	6.72 (10.82)	2335	4.5	0.675 (0.410)	10.37 (2.04)	196 (91)	41 (5)	29.9 (101.1)
<b>50% of Pull at Maximum Power—7th(3M)Gear</b>									
32.1 (23.9)	1755 (7.82)	6.85 (11.03)	2362	3.5	0.815 (0.496)	8.58 (1.69)	194 (90)	39 (4)	29.9 (101.1)
<b>75% of Pull at Reduced Engine Speed—8th(1H) Gear</b>									
47.2 (35.2)	2635 (11.72)	6.72 (10.82)	2188	4.4	0.594 (0.361)	11.78 (2.32)	196 (91)	39 (4)	29.9 (101.1)
<b>50% of Pull at Reduced Engine Speed—8th(1H) Gear</b>									
32.1 (23.9)	1755 (7.82)	6.85 (11.03)	2207	3.5	0.730 (0.444)	9.58 (1.89)	194 (90)	39 (4)	29.9 (101.1)

**MAXIMUM POWER IN SELECTED GEARS**

65.4 (48.8)	6755 (30.05)	3.63 (5.85)	2102	15.0	6th(2M) Gear		11.74 (2.31)	194 (90)	41 (5)	29.9 (101.1)
76.4 (57.0)	5405 (24.04)	5.30 (8.54)	1976	10.7	7th(3M) Gear		13.86 (2.73)	196 (91)	41 (5)	29.9 (101.1)
77.5 (57.8)	5080 (22.59)	5.72 (9.21)	1962	9.4	8th(1H) Gear		13.97 (2.75)	196 (91)	41 (5)	29.9 (101.1)
77.4 (57.7)	3585 (15.95)	8.10 (13.03)	1956	6.1	9th(4M) Gear		13.91 (2.74)	194 (90)	43 (6)	29.9 (101.1)

**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

**Tested without ballast**

Two 540/65R34; \*\*; 23 (160)  
 Two 440/65R24; \*\*; 23 (160)  
 18.1 in (460 mm)  
 5025 lb (2280 kg)  
 3540 lb (1605 kg)  
 8565 lb (3885 kg)

TRACTOR SOUND LEVEL WITHOUT CAB	FWA dB(A)	2WD dB(A)
At no load in 6th (2M) gear	82.0	82.0
Bystander	--	--

TRACTOR SOUND LEVEL WITH CAB	FWA dB(A)	2WD dB(A)
At no load in 6th (2M) gear	76.5	76.5
Bystander	--	--

## HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range:	3520 lbs (15.6 kN)	
	<u>Standard pump</u>	<u>Optional pump</u>
i) Sustained pressure with relief valve open:	2800 psi (193 bar)	2845 psi (196 bar)
ii) Pump delivery rate at minimum pressure:	11.6 GPM (44.0 l/min)	14.9 GPM (56.5 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	10.7 GPM (40.5 l/min)	13.4 GPM (50.8 l/min)
Delivery pressure:	2555 psi (176 bar)	2525 psi (174 bar)
Power:	16.0 hp (11.9 kW)	19.7 hp (14.7 kW)

## HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	25.6	650
B	10.0	255
C	13.9	352
D	11.7	296
E	10.0	255
F	8.3	210
G	29.5	750
H	0.6	15
I	15.2	385
J	21.2	540
K	17.9	455
L	42.6	1083
M	22.0	558
N	37.5	953
O	13.5	343
P	45.3	1150
Q	42.8	1088
R	21.6	545

