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2013

Nebraska Summary: S923 Massey Ferguson 7616

Nebraska Tractor Test Lab

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SUMMARY OF OECD TEST 2789-NEBRASKA SUMMARY 923 MASSEY FERGUSON 7616 DYNA 6 DIESEL 24 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption		Mean Atmospheric Conditions
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Gal/hr (l/h)	
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1034 rpm)						
126.1 (94.0)	2099	7.51 (28.42)	0.415 (0.253)	16.80 (3.31)	0.30 (1.15)	
Standard Power Take-off Speed (1000 rpm)						
137.9 (102.8)	2030	7.92 (29.98)	0.401 (0.244)	17.41 (3.43)	0.36 (1.35)	
Maximum Power (1 hour)						
141.2 (105.3)	1998	8.03 (30.41)	0.397 (0.242)	17.58 (3.46)	0.36 (1.38)	

VARYING POWER AND FUEL CONSUMPTION

126.1 (94.0)	2099	7.51 (28.42)	0.415 (0.253)	16.80 (3.31)	0.30 (1.15)	Air temperature
108.8 (81.1)	2124	6.59 (24.95)	0.422 (0.257)	16.27 (3.25)	0.29 (1.08)	71°F (22°C)
82.1 (61.2)	2133	5.37 (20.34)	0.456 (0.278)	15.27 (3.01)	0.22 (0.85)	Relative humidity
54.6 (40.7)	2138	4.08 (15.45)	0.523 (0.318)	13.37 (2.63)	0.16 (0.60)	60%
27.5 (20.5)	2149	2.94 (11.12)	0.747 (0.454)	9.36 (1.84)	0.10 (0.39)	Barometer
--	2153	1.83 (6.93)	--	--	--	29.8" Hg (100.8 kPa)

Maximum torque - 454.2 lb.-ft. (615.8 Nm) at 1100 rpm

Maximum torque rise - 44.1%

Torque rise at 1700 engine rpm - 32%

Power increase at 1998 engine rpm - 12.0%

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—12th(3A) Gear									
107.3 (80.0)	7935 (35.3)	5.07 (8.16)	2100	4.4	0.466 (0.284)	14.91 (2.94)	183 (84)	38 (4)	30.1 (102.0)
75% of Pull at Maximum Power—12th(3A) Gear									
80.9 (60.3)	5880 (26.2)	5.16 (8.30)	2126	3.6	0.486 (0.295)	14.31 (2.82)	181 (83)	38 (4)	29.8 (101.0)
50% of Pull at Maximum Power—12th(3A) Gear									
55.4 (41.3)	3955 (17.6)	5.25 (8.45)	2133	2.2	0.566 (0.344)	12.28 (2.42)	181 (83)	38 (4)	30.1 (102.0)
75% of Pull at Reduced Engine Speed—14th(3B) Gear									
81.3 (60.6)	5875 (26.1)	5.19 (8.36)	1775	3.5	0.437 (0.266)	15.89 (3.13)	183 (84)	38 (3)	30.1 (102.0)
50% of Pull at Reduced Engine Speed—14th(3B) Gear									
55.8 (41.6)	3955 (17.6)	5.29 (8.51)	1784	2.1	0.503 (0.306)	13.81 (2.72)	183 (84)	38 (3)	30.1 (102.0)

Location of tests: IRSTEA, Centre d'Antony, 1 rue Pierre-Gilles de Gennes CS 10030 Antony, 92163, Cedex, France

Dates of tests: November, 2012 to July, 2013

Manufacturer: AGCO S.A. BP 307, Avenue Blaise Pascal, 60026 Beauvais, France

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.838 **Fuel weight** 6.98 lbs/gal (0.836 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.10 lbs/gal (1.091 kg/l) **Oil SAE 15W40 API service classification** CJ-4 **Transmission and hydraulic lubricant** BP Terrac Tractan 9 15W/40 **Front axle lubricant** BP Terrac Tractan 9 15W/40

ENGINE: Make Sisu AGCO Power Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler and SCR (selective catalyst reduction) exhaust treatment **Serial No.** W00421 **Crankshaft lengthwise Rated engine speed** 2100 **Bore and stroke** 4.252" x 4.724" (108.0 mm x 120.0 mm) **Compression ratio** 17.4 to 1 **Displacement** 402 cu in (6596 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** two paper cartridges **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** B 262 901 **Tread width** rear 52.8" (1340 mm) to 87.8" (2230 mm) front 52.8" (1340 mm) to 87.8" (2230 mm) **Wheelbase** 113.2" (2875 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 0.96 (1.55) second 1.16 (1.86) third 1.36 (2.19) fourth 1.63 (2.63) fifth 1.92 (3.09) sixth 2.31 (3.72) seventh 2.60 (4.19) eighth 3.13 (5.03) ninth 3.67 (5.91) tenth 4.42 (7.11) eleventh 5.19 (8.36) twelfth 5.29 (8.51) thirteenth 6.25 (10.06) fourteenth 6.35 (10.22) fifteenth 7.46 (12.00) sixteenth 8.97 (14.44) seventeenth 10.55 (16.98) eighteenth 12.19 (19.62) nineteenth 12.70 (20.44) twentieth 14.65 (23.58) twenty-first 17.20 (27.68) twenty-second 20.69 (33.30) twenty-third 24.33 (39.16) twenty-fourth 24.86 (40.00) electronically limited reverse 0.96 (1.55), 1.16 (1.86), 1.36 (2.19), 1.63 (2.63), 1.92 (3.09), 2.31 (3.72), 2.60 (4.19), 3.13 (5.03), 3.67 (5.91), 4.42 (7.11), 5.19 (8.36), 5.29 (8.51), 6.25 (10.06), 6.35 (10.22), 7.46 (12.00), 8.97 (14.44), 10.55 (16.98), 12.19 (19.62), 12.70 (20.44), 14.65 (23.58), 17.20 (27.68), 20.69 (33.30), 24.33 (39.16), 24.86 (40.00) electronically limited

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)
6th(1F) Gear									
69.9 (52.1)	13195 (58.7)	1.99 (3.20)	2121	14.7	0.550 (0.335)	12.64 (2.49)	181 (83)	40 (4)	30.1 (102.0)
7th(2A) Gear									
79.5 (59.3)	13175 (58.6)	2.26 (3.64)	2117	13.7	0.519 (0.316)	13.40 (2.64)	181 (83)	40 (4)	30.1 (102.0)
8th(2B) Gear									
91.5 (68.2)	12440 (55.3)	2.75 (4.44)	2101	12.2	0.466 (0.283)	14.92 (2.94)	183 (84)	40 (4)	30.1 (102.0)
9th(2C) Gear									
100.7 (75.1)	11770 (52.4)	3.21 (5.17)	2005	8.3	0.437 (0.266)	15.89 (3.13)	181 (83)	40 (4)	30.1 (102.0)
10th(2D) Gear									
112.5 (83.9)	10770 (47.9)	3.92 (6.31)	2000	6.6	0.428 (0.260)	16.24 (3.20)	183 (84)	40 (4)	30.1 (102.0)
11th(2E) Gear									
119.9 (89.4)	9600 (42.7)	4.68 (7.54)	1998	5.0	0.428 (0.260)	16.24 (3.20)	185 (85)	40 (4)	30.1 (102.0)
12th(3A) Gear									
119.1 (88.8)	9305 (41.4)	4.80 (7.72)	1995	4.7	0.431 (0.262)	16.14 (3.18)	185 (85)	40 (4)	30.1 (102.0)
13th(2F) Gear									
118.0 (88.0)	7745 (34.5)	5.71 (9.20)	2007	4.4	0.437 (0.266)	15.89 (3.13)	181 (83)	39 (4)	30.1 (102.0)
14th(3B) Gear									
119.2 (88.9)	7710 (34.3)	5.80 (9.33)	2003	4.3	0.443 (0.270)	15.68 (3.09)	187 (86)	38 (3)	30.1 (102.0)
15th(3C) Gear									
118.1 (88.1)	6495 (28.9)	6.82 (10.97)	1997	4.2	0.439 (0.267)	15.84 (3.12)	187 (86)	38 (3)	30.1 (102.0)
16th(3D) Gear									
118.5 (88.4)	5390 (24.0)	8.24 (13.26)	2000	3.4	0.442 (0.269)	15.74 (3.10)	187 (86)	38 (3)	30.1 (102.0)
17th(3E) Gear									
116.0 (86.5)	4430 (19.7)	9.82 (15.80)	2005	2.6	0.446 (0.272)	15.57 (3.07)	187 (86)	38 (4)	30.1 (102.0)
18th(3F) Gear									
108.2 (80.7)	3545 (15.8)	11.45 (18.43)	2011	2.0	0.475 (0.289)	14.62 (2.88)	189 (87)	38 (4)	30.1 (102.0)

Clutch multiple wet disc operated by foot pedal
Brakes multiple wet disc hydraulically operated by two foot pedals that can be locked together
Steering hydrostatic **Power take-off** 540 rpm at 1980 engine rpm or 1000 rpm at 2030 engine rpm **Unladen tractor mass** 14770 lb (6700 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE: The performance figures on this report are the result of replacing the electronic engine control module of the Massey Ferguson 7615 with the Massey Ferguson 7616 module.

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 claim of 29 GPM (110 lpm) nor 3 point lift capacity claim of 9800 lbs (4445 kg). 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. **2789**, Nebraska Summary 923, May 12, 2014.

Roger M. Hoy
 Director

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

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 10th (2D) gear	69.0	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 20.8R38;**,14(100)
 Two 16.9R28;**,15(105)
 19.7 in (500 mm)
 8090 lb (3670 kg)
 6845 lb (3105 kg)
 14935 lb (6775 kg)

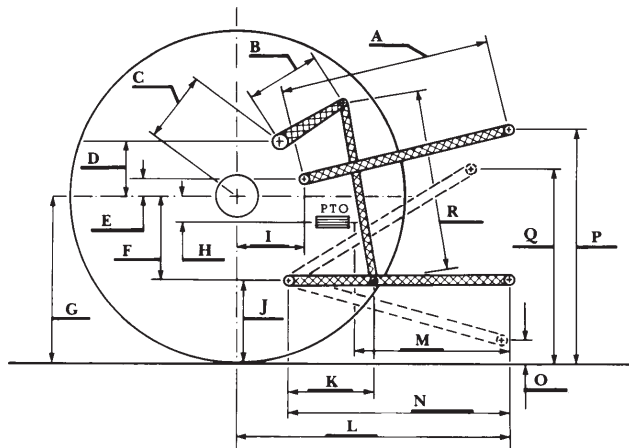
HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

- Maximum force exerted through whole range: 8925 lbs (39.7 kN)
- i) Sustained pressure of the open relief valve: 2845 psi (196 bar)
two outlet sets combined
- ii) Pump delivery rate at minimum pressure: 28.6 GPM (108.3 l/min)
- iii) Pump delivery rate at maximum
hydraulic power: 26.6 GPM (100.6 l/min)
Delivery pressure: 1930 psi (133 bar)
Power: 29.9 HP (22.3 kW)
single outlet set
- ii) Pump delivery rate at minimum pressure: 28.8 GPM (109.0 l/min)
- iii) Pump delivery rate at maximum
hydraulic power: 25.7 GPM (97.2 l/min)
Delivery pressure: 1915 psi (132 bar)
Power: 28.7 HP (21.4 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.7	728
B	11.6	295
C	13.9	354
D	19.1	330
E	13.0	201
F	11.0	280
G	34.4	875
H	2.0	50
I	15.5	394
J	23.4	595
K	21.7	550
L	43.3	1101
M	24.6	626
N	37.0	940
O	7.7	195
P	47.4	1205
Q	35.8	909
R	30.7	780