University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

2012

Nebraska Summary: S840 Massey Ferguson 7622

Nebraska Tractor Test Lab
University of Nebraska-Lincoln, tractortestlab@unl.edu

Follow this and additional works at: https://digitalcommons.unl.edu/tractormuseumlit

 Part of the Energy Systems Commons, History of Science, Technology, and Medicine Commons, Other Mechanical Engineering Commons, Physical Sciences and Mathematics Commons, Science and Mathematics Education Commons, and the United States History Commons

Nebraska Tractor Test Lab, "Nebraska Summary: S840 Massey Ferguson 7622" (2012). *Nebraska Tractor Tests*. 3100.
https://digitalcommons.unl.edu/tractormuseumlit/3100

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

SUMMARY OF OECD TEST 2705–NEBRASKA SUMMARY 840
MASSEY FERGUSON 7622 DYNA VT DIESEL
CONTINOUSLY VARIABLE TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Diesel Consumption Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	D.E.F. Consumption Hp.hr/gal *(kW.h/l)*	D.E.F. Consumption Gal/hr *(l/h)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1033 rpm)						
176.7 *(131.8)*	2102	10.21 *(38.66)*	0.403 *(0.245)*	17.31 *(3.41)*	0.45 *(1.70)*	
Standard Power Take-off Speed (1000 rpm)						
187.5 *(139.8)*	2034	10.51 *(39.79)*	0.391 *(0.238)*	17.83 *(3.51)*	0.53 *(2.01)*	
Maximum Power (1 hour)						
202.4 *(150.9)*	1946	10.81 *(40.91)*	0.372 *(0.227)*	18.73 *(3.69)*	0.64 *(2.42)*	
VARYING POWER AND FUEL CONSUMPTION						
176.7 *(131.8)*	2102	10.21 *(38.66)*	0.403 *(0.245)*	17.31 *(3.41)*	0.45 *(1.70)*	Air temperature
151.5 *(113.0)*	2121	8.78 *(33.25)*	0.404 *(0.246)*	17.26 *(3.40)*	0.38 *(1.45)*	72°F *(23°C)*
114.5 *(85.4)*	2138	7.07 *(26.75)*	0.431 *(0.262)*	16.19 *(3.19)*	0.32 *(1.22)*	Relative humidity
76.8 *(57.3)*	2144	5.20 *(19.68)*	0.472 *(0.287)*	14.77 *(2.91)*	0.22 *(0.82)*	23%
38.5 *(28.7)*	2147	3.53 *(13.36)*	0.641 *(0.390)*	10.89 *(2.14)*	0.15 *(0.56)*	Barometer
--- ---	2156	2.08 *(7.89)*	--- ---	--- ---	--- ---	30.3" Hg *(102.5 kPa)*

Maximum torque - 649 lb.-ft. *(880 Nm)* at 1431 rpm
Maximum torque rise - 47.0%
Torque rise at 1700 engine rpm - 36%
Power increase at 1946 engine rpm - 14%

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)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—Rabbit 9									
135.2 *(100.8)*	9465 *(42.1)*	5.36 *(8.62)*	2101	5.2	0.495 *(0.301)*	14.06 *(2.77)*	176 *(80)*	39 *(4)*	30.4 *(103.0)*
75% of Pull at Maximum Power—Rabbit 9									
101.1 *(75.4)*	7095 *(31.6)*	5.34 *(8.60)*	2113	4.4	0.527 *(0.321)*	13.20 *(2.60)*	172 *(78)*	41 *(5)*	30.4 *(103.0)*
50% of Pull at Maximum Power—Rabbit 9									
68.4 *(51.0)*	4765 *(21.2)*	5.38 *(8.66)*	2134	3.8	0.574 *(0.349)*	12.13 *(2.39)*	172 *(78)*	39 *(4)*	30.4 *(103.0)*
75% of Pull at Reduced Engine Speed—Rabbit 12									
101.2 *(75.5)*	7170 *(31.9)*	5.29 *(8.52)*	1370	4.3	0.423 *(0.257)*	16.45 *(3.24)*	170 *(77)*	39 *(4)*	30.4 *(103.0)*
50% of Pull at Reduced Engine Speed—Rabbit 12									
68.3 *(50.9)*	4745 *(21.1)*	5.40 *(8.68)*	1378	3.2	0.458 *(0.278)*	15.20 *(2.99)*	167 *(75)*	39 *(4)*	30.4 *(103.0)*

Location of tests: Centre d'Antony, 1 rue Pierre-Giles de Gennes, CS 10030 92761 Antony, Cedex France

Dates of tests: January - March, 2012

Manufacturer: AGCO S.A. ZA, n2, BP 60307, Avenue Blaise Pascal, 60026 Beauvais, Cedex, 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** 9.08 lbs/gal *(1.091 kg/l)* **Oil SAE** 15W40 **API service classification** CH4 **Transmission and hydraulic lubricant** BP Terrac Tractan 9 10W/40 **Front axle lubricant** SAE 85W140 API GL-5

ENGINE: Make Sisu Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) technology **Serial No.** W 00454 **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** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** B013901 **Tread width** rear 52.8" *(1340 mm)* to 87.8" *(2230 mm)* front 52.8" *(1340 mm)* to 87.8" *(2230 mm)* **Wheelbase** 117.8" *(2993 mm)* **Hydraulic control system** direct engine drive **Transmission** CVT. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment within the ranges noted. The transmission has two mechanical ranges. **Nominal travel speeds mph *(km/h)*** forward: Low range 0-19 *(0-30)*, high range 0-25 *(0-40)* reverse: Low range 0-11 *(0-17)*, high range 0-19 *(0-30)* **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1932 engine rpm or 1000 rpm at 2035 engine rpm **Unladen tractor mass** 18495 lb *(8390 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					Turtle 4.5				
113.0 *(84.3)*	17040 *(75.8)*	2.49 *(4.00)*	2118	15.4	0.515 *(0.313)*	13.51 *(2.66)*	172 *(78)*	46 *(8)*	30.1 *(102.0)*
					Turtle 6.5				
157.1 *(117.2)*	14805 *(65.8)*	3.98 *(6.40)*	1962	11.0	0.444 *(0.270)*	15.68 *(3.09)*	181 *(83)*	46 *(8)*	29.8 *(101.0)*
					Turtle 8				
157.6 *(117.5)*	12680 *(56.4)*	4.66 *(7.50)*	1963	6.7	0.444 *(0.270)*	15.63 *(3.08)*	183 *(84)*	46 *(8)*	29.8 *(101.0)*
					Turtle 10				
158.4 *(118.1)*	10115 *(45.0)*	5.87 *(9.45)*	1965	5.2	0.444 *(0.270)*	15.68 *(3.09)*	180 *(82)*	39 *(4)*	30.4 *(103.0)*
					Turtle 13				
160.0 *(119.3)*	7980 *(35.5)*	7.52 *(12.10)*	1956	4.9	0.441 *(0.268)*	15.79 *(3.11)*	181 *(83)*	41 *(5)*	30.4 *(103.0)*
					Turtle 15				
157.8 *(117.7)*	6430 *(28.6)*	9.21 *(14.82)*	1938	4.2	0.448 *(0.272)*	15.55 *(3.06)*	183 *(84)*	41 *(5)*	30.4 *(103.0)*
					Rabbit 9				
149.5 *(111.5)*	10520 *(46.8)*	5.33 *(8.58)*	1962	5.9	0.470 *(0.286)*	14.82 *(2.92)*	180 *(82)*	41 *(5)*	30.4 *(103.0)*
					Rabbit 12				
159.2 *(118.7)*	8455 *(37.6)*	7.06 *(11.36)*	1952	5.0	0.445 *(0.270)*	15.65 *(3.08)*	180 *(82)*	41 *(5)*	30.4 *(103.0)*
					Rabbit 15				
158.5 *(118.2)*	6800 *(30.3)*	8.74 *(14.06)*	1951	4.3	0.445 *(0.270)*	15.65 *(3.08)*	183 *(84)*	45 *(7)*	30.4 *(103.0)*
					Rabbit 17				
157.3 *(117.3)*	5910 *(26.3)*	9.98 *(16.06)*	1954	3.6	0.448 *(0.272)*	15.55 *(3.06)*	181 *(83)*	45 *(7)*	30.4 *(103.0)*

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 claim of 15% power bulge. The manufacturer's claim of 39 GPM *(150 lpm)* remote hydraulic flow, with optional pump, was not verified. 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. **2705,** Nebraska Summary 840, January 30,2013.

Roger M. Hoy
Director

M.R. Riley
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive Engaged dB(A)	Front wheel drive Disengaged dB(A)
At no load in Turtle 8	70.0	70.0
Bystander		--

TIRES, BALLAST AND WEIGHT

	Tested without ballast
Rear Tires - No., size, ply & psi(*kPa)*	Two 650/65R38;**;14(*100)*
Front Tires - No., size, ply & psi(*kPa)*	Two 540/65R30;**;14(*100)*
Height of Drawbar	23.6 in *(600 mm)*
Static Weight with operator - Rear	10570 lb *(4795 kg)*
- Front	8090 lb (*3670 kg)*
- Total	18660 lb (*8465 kg)*

HYDRAULIC PERFORMANCE

CATEGORY: III
Quick Attach: None
OECD Static test

Maximum force exerted through whole range:	13715 lbs *(61.0 kN)*
i) Sustained pressure of the open relief valve:	2900 psi *(200 bar)*
	two outlet sets combined
ii) Pump delivery rate at minimum pressure:	31.0 GPM *(117.5 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	29.2 GPM *(110.5 l/min)*
Delivery pressure:	2250 psi *(155 bar)*
Power:	38.3 HP *(28.5 kW)*
	one outlet set
ii) Pump delivery rate at minimum pressure:	30.6 GPM *(116.1 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	27.7 GPM *(104.7 l/min)*
Delivery pressure:	1945 psi *(134 bar)*
Power:	31.4 HP *(23.4 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	31.9	*810*
B	14.0	*355*
C	14.4	*365*
D	12.0	*305*
E	8.8	*223*
F	10.9	*276*
G	36.4	*925*
H	2.4	*60*
I	16.4	*416*
J	25.5	*649*
K	26.2	*665*
L	47.6	*1209*
M	26.9	*684*
N	40.6	*1030*
O	8.5	*216*
P	49.6	*1259*
Q	39.7	*1008*
R	31.1	*790*

