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

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

2015

Nebraska Summary: S1017 Massey Ferguson 7722

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: S1017 Massey Ferguson 7722" (2015). *Nebraska Tractor Tests*. 3295.
https://digitalcommons.unl.edu/tractormuseumlit/3295

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 2935–NEBRASKA SUMMARY 1017
MASSEY FERGUSON 7722 DYNA 6 DIESEL
24 SPEED

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)*	Gal/hr *(l/h)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1050 rpm)						
176.2 *(131.4)*	2100	10.63 *(40.25)*	0.422 *(0.256)*	16.55 *(3.26)*	0.69 *(2.60)*	
Standard Power Take-off Speed (1000 rpm)						
192.0 *(143.2)*	2000	11.03 *(41.76)*	0.401 *(0.244)*	17.41 *(3.43)*	0.73 *(2.78)*	
Maximum Power (1 hour)						
201.8 *(150.5)*	1802	10.92 *(41.33)*	0.378 *(0.230)*	18.48 *(3.64)*	0.81 *(3.05)*	
VARYING POWER AND FUEL CONSUMPTION						
176.2 *(131.4)*	2100	10.63 *(40.25)*	0.422 *(0.256)*	16.55 *(3.26)*	0.69 *(2.60)*	Air temperature
151.1 *(112.7)*	2119	9.30 *(35.20)*	0.429 *(0.261)*	16.24 *(3.20)*	0.59 *(2.22)*	73°F *(23°C)*
113.9 *(84.9)*	2127	7.29 *(27.58)*	0.446 *(0.272)*	15.63 *(3.08)*	0.50 *(1.89)*	Relative humidity
76.1 *(56.7)*	2131	5.56 *(21.04)*	0.510 *(0.310)*	13.69 *(2.70)*	0.41 *(1.55)*	49%
38.1 *(28.4)*	2140	3.83 *(14.50)*	0.701 *(0.427)*	9.95 *(1.96)*	0.22 *(0.82)*	Barometer
-- --	2150	2.29 *(8.67)*	-- --	-- --	-- --	30.0" Hg *(101.7 kPa)*

Maximum torque - 674.3 lb.-ft. *(914.2 Nm)* at 1150 rpm
Maximum torque rise - 53.0%
Torque rise at 1700 engine rpm - 37%
Power increase at 1802 engine rpm - 14.5%

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 cool-ing	*(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
Power at Rated Engine Speed—13th(3B) Gear									
146.3 *(109.1)*	8995 *(40.0)*	6.10 *(9.82)*	2096	3.2	0.509 *(0.309)*	13.60 *(2.68)*	187 *(86)*	45 *(7)*	30.3 *(102.7)*
75% of Pull at Rated Engine Speed—13th(3B) Gear									
111.5 *(83.2)*	6755 *(30.0)*	6.20 *(9.98)*	2122	2.7	0.534 *(0.324)*	12.97 *(2.55)*	187 *(86)*	45 *(7)*	30.3 *(102.7)*
50% of Pull at Rated Engine Speed—13th(3B) Gear									
76.8 *(57.3)*	4540 *(20.2)*	6.35 *(10.22)*	2131	1.0	0.620 *(0.377)*	11.17 *(2.20)*	185 *(85)*	45 *(7)*	30.3 *(102.7)*
75% of Pull at Reduced Engine Speed—15th(3C) Gear									
112.1 *(83.6)*	6720 *(29.9)*	6.25 *(10.06)*	1810	2.6	0.501 *(0.305)*	13.81 *(2.72)*	185 *(85)*	45 *(7)*	30.3 *(102.7)*
50% of Pull at Reduced Engine Speed—15th(3C) Gear									
77.1 *(57.5)*	4540 *(20.2)*	6.37 *(10.25)*	1820	1.0	0.526 *(0.320)*	13.15 *(2.59)*	183 *(84)*	45 *(7)*	30.3 *(102.7)*

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

Dates of tests: September to November, 2015

Manufacturer: AGCO S.A. BP307, Avenue Blaise Pascal, 60026 Beauvais, France

CONSUMABLE FLUIDS: **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 AGCO Power Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) exhaust treatment **Serial No.** Z00017 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.252" x 5.276" *(108.0 mm x 134.0 mm)* **Compression ratio** 17.8 to 1 **Displacement** 449 cu in *(7365 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** three paper cartridges **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** D 245901 **Tread width** rear 52.8" *(1340 mm)* to 87.8" *(2230 mm)* front 52.8" *(1340 mm)* to 87.8" *(2230 mm)* **Wheelbase** 117.0" *(2973 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 1.01 *(1.62)* second 1.21 *(1.95)* third 1.42 *(2.29)* fourth 1.72 *(2.76)* fifth 2.01 *(3.24)* sixth 2.42 *(3.90)* seventh 2.73 *(4.39)* eighth 3.27 *(5.27)* ninth 3.85 *(6.19)* tenth 4.63 *(7.45)* eleventh 5.22 *(8.40)* twelfth 5.44 *(8.76)* thirteenth 6.28 *(10.10)* fourteenth 6.55 *(10.54)* fifteenth 7.37 *(11.86)* sixteenth 8.87 *(14.27)* seventeenth 10.43 *(16.78)* eighteenth 12.54 *(20.18)* nineteenth 14.49 *(23.32)* twentieth 17.42 *(28.04)* twenty-first 20.45 *(32.91)* twenty-second 24.61 *(39.61)* twenty-third 24.86 *(40.00)* twenty-fourth 24.86 *(40.00)* electronically limited reverse 1.01 *(1.62)*, 1.21 *(1.95)*, 1.42 *(2.29)*, 1.72 *(2.76)*, 2.01 *(3.24)*, 2.42 *(3.90)*, 2.73 *(4.39)*, 3.27 *(5.27)*, 3.85 *(6.19)*, 4.63 *(7.45)*, 5.22 *(8.40)*, 5.44 *(8.76)*, 6.28 *(10.10)*, 6.55 *(10.54)*, 7.37 *(11.86)*, 8.87 *(14.27)* 10.43 *(16.78)*, 12.54 *(20.18)*, 14.49 *(23.32)*, 17.42 *(28.04)*, 20.45 *(32.91)*, 24.61 *(39.61)*, 24.86 *(40.00)*, 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F(°C) cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				3rd(1C) Gear					
51.2 *(38.2)*	15535 *(69.1)*	1.24 *(1.99)*	2134	14.8	0.766 *(0.466)*	9.04 *(1.78)*	185 *(85)*	41 *(5)*	30.3 *(102.7)*
				4th(1D) Gear					
62.1 *(46.3)*	15285 *(68.0)*	1.52 *(2.45)*	2128	13.8	0.688 *(0.419)*	10.05 *(1.98)*	185 *(85)*	43 *(6)*	30.3 *(102.7)*
				5th(1E) Gear					
71.1 *(53.0)*	15040 *(66.9)*	1.77 *(2.85)*	2127	13.5	0.652 *(0.397)*	10.61 *(2.09)*	187 *(86)*	43 *(6)*	30.3 *(102.7)*
				6th(1F) Gear					
86.2 *(64.3)*	15040 *(66.9)*	2.15 *(3.46)*	2124	12.8	0.622 *(0.378)*	11.12 *(2.19)*	187 *(86)*	45 *(7)*	30.3 *(102.7)*
				7th(2A) Gear					
96.2 *(71.7)*	14320 *(63.7)*	2.52 *(4.05)*	2123	8.9	0.552 *(0.335)*	12.54 *(2.47)*	187 *(86)*	45 *(7)*	30.3 *(102.7)*
				8th(2B) Gear					
118.1 *(88.1)*	14120 *(62.8)*	3.13 *(5.05)*	2118	7.6	0.539 *(0.328)*	12.84 *(2.53)*	190 *(88)*	45 *(7)*	30.3 *(102.7)*
				9th(2C) Gear					
132.2 *(98.6)*	14005 *(62.3)*	3.54 *(5.70)*	2059	7.2	0.514 *(0.312)*	13.47 *(2.65)*	190 *(88)*	45 *(7)*	30.3 *(102.7)*
				*10th(2D) Gear					
148.0 *(110.4)*	13985 *(62.2)*	3.97 *(6.39)*	1923	7.1	0.504 *(0.306)*	13.73 *(2.70)*	192 *(89)*	43 *(6)*	30.3 *(102.7)*
				*11th(3A) Gear					
163.6 *(122.0)*	13960 *(62.1)*	4.39 *(7.07)*	1905	7.0	0.466 *(0.283)*	14.85 *(2.92)*	190 *(88)*	45 *(7)*	30.3 *(102.7)*
				*12th(2E) Gear					
165.3 *(123.3)*	13645 *(60.7)*	4.54 *(7.31)*	1866	6.8	0.459 *(0.279)*	15.08 *(2.97)*	192 *(89)*	43 *(6)*	30.3 *(102.7)*
				*13th(3B) Gear					
169.4 *(126.3)*	12275 *(54.6)*	5.18 *(8.33)*	1828	5.8	0.451 *(0.274)*	15.33 *(3.02)*	190 *(88)*	43 *(6)*	30.3 *(102.7)*
				*14th(2F) Gear					
167.9 *(125.2)*	11825 *(52.6)*	5.33 *(8.57)*	1798	4.8	0.457 *(0.278)*	15.13 *(2.98)*	192 *(89)*	43 *(6)*	30.3 *(102.7)*
				*15th(3C) Gear					
171.1 *(127.6)*	10410 *(46.3)*	6.16 *(9.92)*	1814	3.6	0.441 *(0.268)*	15.68 *(3.09)*	192 *(89)*	45 *(7)*	30.3 *(102.7)*
				*16th(3D) Gear					
169.8 *(126.6)*	8295 *(36.9)*	7.67 *(12.35)*	1828	3.0	0.448 *(0.272)*	15.45 *(3.04)*	192 *(89)*	45 *(7)*	30.3 *(102.7)*
				*17th(3E) Gear					
164.9 *(123.0)*	7015 *(31.2)*	8.82 *(14.19)*	1806	2.1	0.460 *(0.280)*	15.03 *(2.96)*	192 *(89)*	45 *(7)*	30.3 *(102.7)*
				*18th(3F) Gear					
160.8 *(119.9)*	5620 *(25.0)*	10.73 *(17.27)*	1813	1.3	0.472 *(0.287)*	14.64 *(2.88)*	192 *(89)*	45 *(7)*	30.3 *(102.7)*

* Powerboost mode

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive Engaged dB(A)	Disengaged dB(A)
At no load in 10th (2D) gear	70.0	69.0
Bystander		--

TIRES, BALLAST AND WEIGHT	Tested without ballast
Rear Tires - No., size, ply & psi*(kPa)*	Two 620/70R42;**;15*(100)*
Front Tires - No., size, ply & psi*(kPa)*	Two 480/70R30;**;16*(110)*
Height of Drawbar	21.7 in *(550 mm)*
Static Weight with operator - Rear	10305 lb *(4855 kg)*
- Front	7640 lb *(3465 kg)*
- Total	18345 lb *(8320 kg)*

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 1890 engine rpm or 1000 rpm at 2000 engine rpm **Unladen tractor mass** 18175 lb *(8245 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE: This tractor has a power management system that provides an engine power increase when the PTO is engaged and for travel speeds from gear 2D and higher.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. 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. **2935,** Nebraska Summary 1017, June 16, 2016.

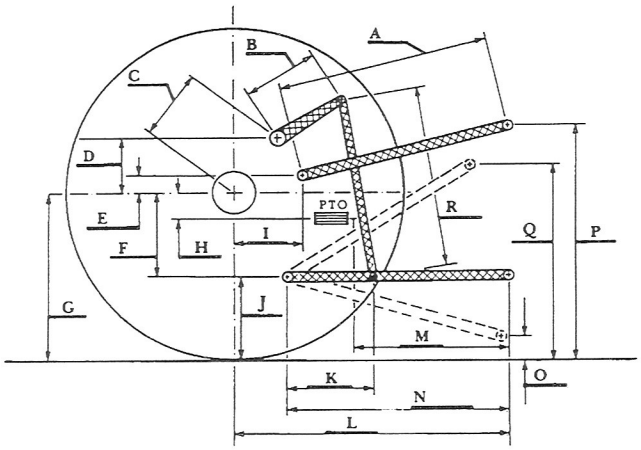
Roger M. Hoy
Director

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

HYDRAULIC PERFORMANCE

CATEGORY: III
Quick Attach: None
OECD Static test

Maximum force exerted through whole range:	13890 lbs *(61.8 kN)*	
i) Sustained pressure of the open relief valve:	2700 psi *(186 bar)*	
	Standard Pump	Optional pump
	29 GPM *(110 l/min)*	39 GPM *(150 l/min)*
	two outlet sets combined	two outlet sets combined
ii) Pump delivery rate at minimum pressure:	30.7 GPM *(116.2 l/min)*	42.1 GPM *(159.2 l/min)*
iii) Pump delivery rate at maximum		
hydraulic power:	29 2 GPM *(110.5 l/min)*	38.6 GPM *(146.3 l/min)*
Delivery pressure:	1990 psi *(137 bar)*	1820 psi *(126 bar)*
Power:	33.9 HP *(25.2 kW)*	41.0 HP *(30.6 kW)*
	single outlet set	single outlet set
ii) Pump delivery rate at minimum pressure:	30.2 GPM *(114.2 l/min)*	29.6 GPM *(112.0 l/min)*
iii) Pump delivery rate at maximum		
hydraulic power:	28.6 GPM *(108.3 l/min)*	27.0 GPM *(102.1 l/min)*
Delivery pressure:	1975 psi *(136 bar)*	1945 psi *(134 bar)*
Power:	32.9 HP *(24.5 kW)*	30.6 HP *(22.8 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	30.9	*784*
B	15.7	*400*
C	20.7	*525*
D	19.1	*485*
E	8.3	*210*
F	12.2	*310*
G	36.4	*925*
H	2.0	*50*
I	17.7	*450*
J	24.2	*615*
K	23.8	*604*
L	48.2	*1225*
M	24.6	*625*
N	38.1	*967*
O	10.0	*255*
P	51.2	*1300*
Q	39.7	*1009*
R	36.6	*930*