2009

Test 1929A: Challenger MT955C

Nebraska Tractor Test Lab
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NEBRASKA OECD TRACTOR TEST 1929A – SUMMARY 601A
CHALLENGER MT955B DIESEL
ALSO CHALLENGER MT955C DIESEL
16 SPEED

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
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1049 rpm)					
404.69 *(301.78)*	2100	24.92 *(94.35)*	0.432 *(0.263)*	16.24 *(3.20)*	
Standard Power Take-off Speed - (PTO speed - 1000 rpm)					
434.63 *(324.11)*	2000	25.94 *(98.20)*	0.418 *(0.255)*	16.75 *(3.30)*	
Maximum Power (1 hour)					
451.08 *(336.37)*	1800	25.96 *(98.26)*	0.403 *(0.245)*	17.38 *(3.42)*	
VARYING POWER AND FUEL CONSUMPTION					
404.69 *(301.78)*	2100	24.92 *(94.35)*	0.432 *(0.263)*	16.24 *(3.20)*	Air temperature
360.75 *(269.02)*	2199	24.24 *(91.75)*	0.471 *(0.286)*	14.88 *(2.93)*	76°F *(25°C)*
270.19 *(201.48)*	2199	20.74 *(78.52)*	0.538 *(0.327)*	13.03 *(2.57)*	Relative humidity
180.01 *(134.23)*	2199	17.35 *(65.66)*	0.676 *(0.411)*	10.38 *(2.04)*	38%
90.40 *(67.41)*	2199	11.71 *(44.33)*	0.908 *(0.552)*	7.72 *(1.52)*	Barometer
2.14 *(1.60)*	2199	7.08 *(26.78)*	23.126 *(14.067)*	0.30 *(0.06)*	28.80" Hg *(97.53 kPa)*

Maximum Torque - 1533 lb.-ft. *(2079 Nm)* at 1450 rpm
Maximum Torque Rise - 51.4%
Torque rise at 1700 engine rpm - 38%
Power increase at 1800 engine rpm - 11.5%

DRAWBAR PERFORMANCE (Unballasted)
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—6th Gear									
363.92 *(271.38)*	32004 *(142.36)*	4.26 *(6.86)*	2090	3.37	0.483 *(0.294)*	14.50 *(2.86)*	192 *(89)*	68 *(20)*	28.60 *(96.85)*
75% of Pull at Maximum Power—6th Gear									
289.39 *(215.80)*	23926 *(106.43)*	4.54 *(7.30)*	2199	2.33	0.567 *(0.345)*	12.36 *(2.44)*	191 *(89)*	71 *(22)*	28.56 *(96.72)*
50% of Pull at Maximum Power—6th Gear									
194.88 *(145.32)*	15950 *(70.95)*	4.58 *(7.37)*	2201	1.39	0.699 *(0.425)*	10.02 *(1.97)*	191 *(88)*	71 *(22)*	28.55 *(96.68)*
75% of Pull at Reduced Engine Speed—9th Gear									
288.73 *(215.31)*	23755 *(105.67)*	4.56 *(7.34)*	1548	2.33	0.482 *(0.293)*	14.54 *(2.86)*	192 *(89)*	71 *(22)*	28.55 *(96.68)*
50% of Pull at Reduced Engine Speed—9th Gear									
194.52 *(145.05)*	16025 *(71.28)*	4.55 *(7.33)*	1532	1.44	0.532 *(0.324)*	13.18 *(2.60)*	191 *(88)*	72 *(22)*	28.54 *(96.65)*

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of tests: May 20 - June 2, 2008
Three point lift performance - March 18, 2009.

Manufacturer: AGCO Corporation, 4205 River Green Parkway, Duluth Ga 30096

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.8419 **Fuel weight** 7.010 lbs/gal *(0.840 kg/l)* **Oil SAE** 10W-30 **API service classification** CI-4 **Transmission and hydraulic lubricant** AGCO Trandraulic 821 XL fluid **Total time engine was operated:** 31.0 hours

ENGINE: Make Caterpillar Diesel **Type** six cylinder vertical with turbocharger and air to air aftercooler **Serial No.***JAS00728* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.402" x 6.748" *(137.2 mm x 171.4 mm)* **Compression ratio** 18.0 to 1 **Displacement** 928 cu in *(15213 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 oil, radiator for transmission and front and rear axle oil **Fuel filter** two paper elements and water separator **Muffler** vertical **Cooling medium temperature control** 2 thermostats

ENGINE OPERATING PARAMETERS: Fuel rate: 167.8 - 177.9 lb/h *(76.1 - 80.7 kg/h)* **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 18.9 - 21.8 psi *(130 - 150 kPa)* as measured 20.5 psi *(141 kPa)*

CHASSIS: Type four wheel drive with triples **Serial No.***AGCC0955ENTSG1031* **Tread width** rear 77.0" *(1955 mm)* to 183.0" *(4650 mm)* front 77.0" *(1955 mm)* to 183.0" *(4650 mm)* **Wheelbase** 155.5" *(3950 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled power shift **Nominal travel speeds mph *(km/h)*** first 1.65 *(2.65)* second 2.09 *(3.36)* third 2.65 *(4.26)* fourth 3.36 *(5.41)* fifth 4.00 *(6.44)* sixth 4.50 (*7.25)* seventh 5.08 *(8.17)* eighth 5.72 *(9.20)* ninth 6.43 *(10.34)* tenth 7.24 *(11.65)* eleventh 8.16 *(13.14)* twelfth 9.19 *(14.79)* thirteenth 10.94 *(17.61)* fourteenth 13.89 *(22.36)* fifteenth 17.59 *(28.30)* sixteenth 24.46 *(39.36)* at 2300 rpm, reverse 1.32 *(2.12)*, 3.20 *(5.15)*, 3.60 *(5.80)*, 8.76 *(14.09)* **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically actuated foot pedal **Steering** hydrostatic **Power take-off** 1000 rpm at 2000 engine rpm **Unladen tractor mass** 50385 lb *(22854 kg)*

DRAWBAR PERFORMANCE
Unballasted at 2100 RPM
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 Gear				
307.34	51175	2.25	2134	14.87	0.568	12.35	191	59	28.57
(229.18)	*(227.64)*	*(3.62)*			*(0.345)*	*(2.43)*	*(88)*	*(15)*	*(96.74)*
					4th Gear				
349.66	41988	3.12	2096	5.37	0.503	13.93	192	60	28.56
(260.74)	*(186.77)*	*(5.03)*			*(0.306)*	*(2.74)*	*(89)*	*(16)*	*(96.72)*
					5th Gear				
361.81	36050	3.76	2092	4.06	0.487	14.40	192	68	28.60
(269.80)	*(160.36)*	*(6.06)*			*(0.296)*	*(2.84)*	*(89)*	*(20)*	*(96.85)*
					6th Gear				
363.92	32004	4.26	2090	3.37	0.483	14.50	192	68	28.60
(271.38)	*(142.36)*	*(6.86)*			*(0.294)*	*(2.86)*	*(89)*	*(20)*	*(96.85)*
					7th Gear				
359.04	27778	4.85	2094	2.77	0.490	14.31	192	66	28.61
(267.73)	*(122.56)*	*(7.80)*			*(0.298)*	*(2.82)*	*(89)*	*(19)*	*(96.88)*
					8th Gear				
358.15	24508	5.48	2095	2.47	0.491	14.27	192	65	28.62
(267.07)	*(109.02)*	*(8.82)*			*(0.299)*	*(2.81)*	*(89)*	*(18)*	*(96.92)*
					9th Gear				
352.25	21438	6.16	2090	2.14	0.500	14.02	192	64	28.63
(262.67)	*(95.36)*	*(9.92)*			*(0.304)*	*(2.76)*	*(89)*	*(18)*	*(96.95)*
					10th Gear				
353.82	19093	6.95	2087	1.85	0.497	14.10	192	68	28.59
(263.84)	*(84.93)*	*(11.18)*			*(0.303)*	*(2.78)*	*(89)*	*(20)*	*(96.82)*
					11th Gear				
344.51	16389	7.88	2092	1.51	0.512	13.70	192	68	28.58
(256.90)	*(72.90)*	*(12.69)*			*(0.311)*	*(2.70)*	*(89)*	*(20)*	*(96.78)*
					12th Gear				
342.46	14455	8.88	2092	1.37	0.515	13.60	192	69	28.57
(255.37)	*(64.30)*	*(14.30)*			*(0.313)*	*(2.68)*	*(89)*	*(21)*	*(96.75)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE: Report reissued, supplemental for Challenger MT 955C Diesel, July, 2009.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the primary fuel filter was maintained at 114°F*(45°C)*. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1929A**, Nebraska Summary 601A, July 17, 2009.

Roger M. Hoy
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
At no load in 6th gear	76.7
Bystander	--

TIRES, BALLAST AND WEIGHT	**With Ballast**	**Without Ballast**
Rear Tires - No., size, ply & psi*(kPa)*	Six 520/85R46;***;7*(50)*	Six 520/85R46;***;8*(55)*
Ballast - Liquid (total)	None	None
- Cast Iron (total)	None	None
Front Tires - No., size, ply & psi*(kPa)*	Six 520/85R46;***;16*(110)*	Six 520/85R46;***;12*(85)*
Ballast - Liquid (total)	None	None
- Cast Iron -front end (total)	3330 lb *(1510 kg)*	None
Height of Drawbar	21.5 in *(545 mm)*	21.5 in *(545 mm)*
Static Weight with operator - Rear	20155 lb *(9142 kg)*	22030 lb *(9993 kg)*
- Front	33735 lb*(15302 kg)*	28530 lb*(12941 kg)*
- Total	53890 lb*(24444 kg)*	50560 lb*(22934 kg)*

DRAWBAR PERFORMANCE
(Unballasted at 1800 RPM)
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)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Temp.°F*(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
					3rd Gear				
315.35 *(235.16)*	50828 *(226.10)*	2.33 *(3.74)*	2137	12.23	0.554 *(0.337)*	12.65 *(2.49)*	190 *(88)*	59 *(15)*	28.57 *(96.75)*
					4th Gear				
360.80 *(269.05)*	48803 *(217.09)*	2.77 *(4.46)*	1957	10.04	0.505 *(0.307)*	13.88 *(2.73)*	192 *(89)*	61 *(16)*	28.55 *(96.68)*
					5th Gear				
394.46 *(294.15)*	45292 *(201.47)*	3.27 *(5.26)*	1868	6.73	0.469 *(0.285)*	14.95 *(2.95)*	192 *(89)*	61 *(16)*	28.55 *(96.68)*
					6th Gear				
397.44 *(296.37)*	40782 *(181.41)*	3.65 *(5.88)*	1827	5.25	0.456 *(0.277)*	15.37 *(3.03)*	191 *(88)*	68 *(20)*	28.60 *(96.85)*
					7th Gear				
397.29 *(296.26)*	36327 *(161.59)*	4.10 *(6.60)*	1796	4.06	0.457 *(0.278)*	15.32 *(3.02)*	192 *(89)*	67 *(19)*	28.60 *(96.85)*
					8th Gear				
399.53 *(297.93)*	32194 *(143.21)*	4.65 *(7.49)*	1798	3.41	0.452 *(0.275)*	15.50 *(3.05)*	192 *(89)*	66 *(19)*	28.62 *(96.92)*
					9th Gear				
395.88 *(295.21)*	28189 *(125.39)*	5.27 *(8.48)*	1799	2.83	0.458 *(0.279)*	15.30 *(3.01)*	192 *(89)*	65 *(18)*	28.63 *(96.95)*
					10th Gear				
397.78 *(296.62)*	25119 *(111.74)*	5.94 *(9.56)*	1793	2.41	0.460 *(0.280)*	15.23 *(3.00)*	192 *(89)*	68 *(20)*	28.59 *(96.82)*
					11th Gear				
390.77 *(291.39)*	21850 *(97.20)*	6.71 *(10.79)*	1789	2.07	0.464 *(0.282)*	15.10 *(2.97)*	192 *(89)*	69 *(21)*	28.57 *(96.75)*
					12th Gear				
391.03 *(291.59)*	19342 *(86.04)*	7.58 *(12.20)*	1791	1.80	0.464 *(0.282)*	15.09 *(2.97)*	192 *(89)*	70 *(21)*	28.57 *(96.75)*
					13th Gear				
388.00 *(289.33)*	16121 *(71.71)*	9.03 *(14.53)*	1786	1.44	0.474 *(0.288)*	14.80 *(2.91)*	192 *(89)*	70 *(21)*	28.56 *(96.72)*

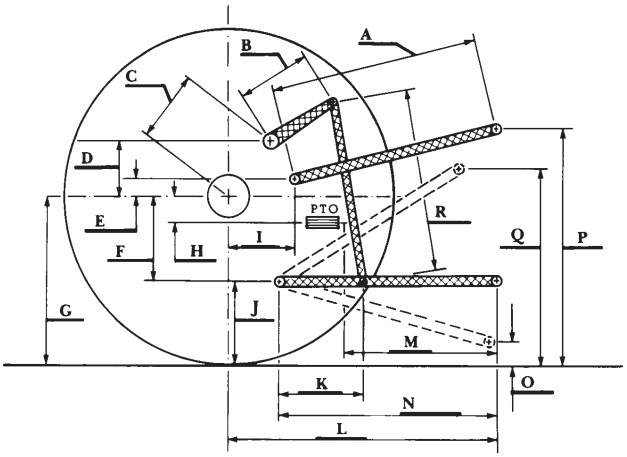
DRAWBAR PERFORMANCE
(Ballasted at 1800 RPM)
MAXIMUM POWER IN SELECTED GEARS

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)*
				2nd Gear					
266.78 *(198.94)*	53606 *(238.45)*	1.87 *(3.00)*	2199	13.11	0.626 *(0.381)*	11.20 *(2.21)*	191 *(89)*	58 *(14)*	28.87 *(97.77)*
				3rd Gear					
330.78 *(246.66)*	51828 *(230.54)*	2.39 *(3.85)*	2128	9.01	0.530 *(0.322)*	13.24 *(2.61)*	192 *(89)*	58 *(14)*	28.88 *(97.80)*
				4th Gear					
375.06 *(279.68)*	50832 *(226.11)*	2.77 *(4.45)*	1916	7.99	0.491 *(0.298)*	14.29 *(2.81)*	192 *(89)*	58 *(14)*	28.89 *(97.83)*
				5th Gear					
394.85 *(294.44)*	46622 *(207.39)*	3.18 *(5.11)*	1806	5.92	0.461 *(0.281)*	15.19 *(2.99)*	192 *(89)*	57 *(14)*	28.90 *(97.87)*
				6th Gear					
401.71 *(299.55)*	41693 *(185.46)*	3.61 *(5.81)*	1802	4.71	0.451 *(0.274)*	15.54 *(3.06)*	192 *(89)*	61 *(16)*	29.09 *(98.51)*
				7th Gear					
402.17 *(299.90)*	36597 *(162.79)*	4.12 *(6.63)*	1802	3.64	0.449 *(0.273)*	15.60 *(3.07)*	192 *(89)*	61 *(16)*	29.09 *(98.51)*
				8th Gear					
404.53 *(301.66)*	32511 *(144.61)*	4.67 *(7.51)*	1800	3.01	0.451 *(0.274)*	15.55 *(3.06)*	192 *(89)*	62 *(17)*	29.08 *(98.48)*
				9th Gear					
398.67 *(297.29)*	28341 *(126.07)*	5.28 *(8.49)*	1800	2.45	0.454 *(0.276)*	15.43 *(3.04)*	192 *(89)*	55 *(13)*	28.99 *(98.17)*
				10th Gear					
399.54 *(297.94)*	25158 *(111.91)*	5.96 *(9.58)*	1798	2.09	0.455 *(0.277)*	15.40 *(3.03)*	192 *(89)*	56 *(13)*	28.96 *(98.07)*
				11th Gear					
390.47 *(291.17)*	21744 *(96.72)*	6.73 *(10.84)*	1799	1.86	0.468 *(0.285)*	14.98 *(2.95)*	192 *(89)*	61 *(16)*	29.10 *(98.54)*
				12th Gear					
389.07 *(290.13)*	19079 *(84.87)*	7.65 *(12.31)*	1806	1.37	0.468 *(0.285)*	14.97 *(2.95)*	192 *(89)*	57 *(14)*	28.94 *(98.00)*
				13th Gear					
385.77 *(287.67)*	15922 *(70.82)*	9.09 *(14.62)*	1796	1.04	0.475 *(0.289)*	14.75 *(2.91)*	192 *(89)*	56 *(13)*	28.95 *(98.04)*

HYDRAULIC PERFORMANCE

CATEGORY: IVN
Quick Attach: yes
OECD Static test
Maximum force exerted through whole range: 20107 lbs *(89.4 kN)*

	Standard pump	High flow pump
	3 inlets - 3 outlets	3 inlets - 3 outlets
i) Sustained pressure at compensator cutoff:	3067 psi *(211 bar)*	2917 psi *(201 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	43.7 GPM *(165.4 l/min)*	59.4 GPM *(224.9 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	41.2 GPM *(156.0 l/min)*	54.5 GPM *(206.4 l/min)*
Delivery pressure:	2761 psi *(190 bar)*	2652 psi *(183 bar)*
Power:	66.4 HP *(49.5 kW)*	84.4 HP *(62.9 kW)*
	1 inlet - 1 outlet	1 inlet - 1 outlet
i) Sustained pressure at compensator cutoff:	2844 psi *(196 bar)*	2801 psi *(193 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	42.2 GPM *(159.7 l/min)*	42.4 GPM *(160.7 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	41.9 GPM *(158.6 l/min)*	33.0 GPM *(124.7 l/min)*
Delivery pressure:	1903 psi *(131 bar)*	1933 psi *(133 bar)*
Power:	46.5 HP *(34.7 kW)*	37.2 HP *(27.7 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	30.9	*785*
B	21.7	*550*
C	41.0	*1042*
D	38.6	*980*
E	11.6	*295*
F	12.6	*320*
G	38.2	*970*
H	3.5	*88*
I	24.2	*614*
J	25.6	*650*
K	28.7	*730*
L	54.3	*1379*
*L'	61.0	*1549*
M	23.0	*584*
N	35.8	*910*
O	10.6	*270*
P	49.6	*1260*
Q	48.0	*1220*
R	56.9	*1445*

*L' to Quick Attach ends

CHALLENGER MT955B DIESEL

Institute of Agriculture and Natural Resources
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