

# SUMMARY OF OECD TEST 2947–NEBRASKA SUMMARY 1021

## CHALLENGER MT565E AP6 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)	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>						
<b>Rated Engine Speed—(PTO speed—1050 rpm)</b>						
167.3 (124.8)	2100	9.48 (35.88)	0.396 (0.240)	17.65 (3.48)	0.66 (2.51)	
<b>Standard Power Take-off Speed (999 rpm)</b>						
181.6 (135.4)	1999	10.00 (37.87)	0.384 (0.234)	18.16 (3.58)	0.70 (2.66)	
<b>Maximum Power (1 hour)</b>						
191.0 (142.4)	1802	10.05 (38.05)	0.367 (0.223)	19.00 (3.74)	0.70 (2.66)	

#### VARYING POWER AND FUEL CONSUMPTION

167.3 (124.8)	2100	9.48 (35.88)	0.396 (0.240)	17.65 (3.48)	0.66 (2.51)	Air temperature
143.5 (107.0)	2118	8.18 (30.95)	0.398 (0.242)	17.54 (3.46)	0.58 (2.19)	70°F (21°C)
108.0 (80.5)	2126	6.49 (24.57)	0.419 (0.255)	16.64 (3.28)	0.52 (1.97)	Relative humidity
72.3 (53.9)	2134	4.84 (18.31)	0.468 (0.284)	14.94 (2.94)	0.39 (1.47)	56%
36.3 (27.1)	2143	3.36 (12.73)	0.648 (0.394)	10.79 (2.13)	0.22 (0.82)	Barometer
--	2149	2.04 (7.73)	--	--	--	29.5" Hg (100.0 kPa)

Maximum torque - 635.6 lb.-ft. (861.8 Nm) at 1001 rpm  
 Maximum torque rise - 51.8%  
 Torque rise at 1700 engine rpm - 36%  
 Power increase at 1801 engine rpm - 14.1%

#### 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 bulb	Barom. inch Hg (kPa)
<b>Power at Rated Engine Speed—11th(3A) Gear</b>								
137.2 (102.3)	9915 (44.1)	5.19 (8.35)	2100	2.2	0.478 (0.291)	14.47 (2.85)	176 (80)	45 (7) (102.4)
<b>75% of Pull at Rated Engine Speed—11th(3A) Gear</b>								
104.5 (77.9)	7440 (33.1)	5.26 (8.47)	2120	2.0	0.540 (0.328)	12.80 (2.52)	178 (81)	45 (7) (102.4)
<b>50% of Pull at Rated Engine Speed—11th(3A) Gear</b>								
70.7 (52.7)	4990 (22.2)	5.31 (8.55)	2125	1.4	0.661 (0.402)	10.46 (2.06)	178 (81)	45 (7) (102.4)
<b>75% of Pull at Reduced Engine Speed—13th(3B) Gear</b>								
103.9 (77.5)	7465 (33.2)	5.22 (8.40)	1760	1.8	0.467 (0.284)	14.78 (2.91)	176 (80)	46 (8) (102.4)
<b>50% of Pull at Reduced Engine Speed—13th(3B) Gear</b>								
70.5 (52.6)	4945 (22.0)	5.34 (8.60)	1775	1.2	0.553 (0.336)	12.50 (2.46)	176 (80)	46 (8) (102.4)

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

**Dates of tests:** February to March, 2016

**Manufacturer:** AGCO S.A. BP 307, 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 BPTerrac Tractan 9 15W/40 Front axle lubricant BPTerrac 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. A73684 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 three paper cartridges Muffler vertical Cooling medium temperature control thermostat and variable speed fan

**CHASSIS:** Type front wheel assist Serial No. D 147901 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 1.03 (1.65) second 1.23 (1.98) third 1.44 (2.32) fourth 1.74 (2.80) fifth 2.04 (3.29) sixth 2.46 (3.96) seventh 2.77 (4.45) eighth 3.32 (5.35) ninth 3.90 (6.28) tenth 4.70 (7.56) eleventh 5.29 (8.52) twelfth 5.52 (8.89) thirteenth 6.37 (10.25) fourteenth 6.65 (10.70) fifteenth 7.48 (12.03) sixteenth 8.99 (14.47) seventeenth 10.58 (17.02) eighteenth 12.73 (20.48) nineteenth 14.70 (23.66) twentieth 17.67 (28.44) twenty-first 20.74 (33.38) twenty-second 24.86 (40.00) twenty-third 24.86 (40.00) twenty-fourth 24.86 (40.00) electronically limited reverse 1.03 (1.65), 1.23 (1.98), 1.44 (2.32), 1.74 (2.80), 2.04 (3.29), 2.46 (3.96), 2.77 (4.45), 3.32 (5.35), 3.90 (6.28), 4.70 (7.56), 5.29 (8.52), 5.52 (8.89), 6.37 (10.25), 6.65 (10.70), 7.48 (12.03), 8.99 (14.47) 10.58 (17.02), 12.73 (20.48), 14.70 (23.66), 17.67 (28.44), 20.74 (33.38), 24.86 (40.00), 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)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd(1B) Gear									
46.7 (34.8)	16300 (72.5)	1.08 (1.73)	2137	14.0	0.681 (0.414)	10.15 (2.00)	180 (82)	52 (11)	30.3 (102.5)
3rd(1C) Gear									
55.4 (41.3)	16140 (71.8)	1.29 (2.07)	2134	13.2	0.641 (0.390)	10.77 (2.12)	180 (82)	52 (11)	30.3 (102.5)
4th(1D) Gear									
65.6 (48.9)	15960 (71.0)	1.54 (2.48)	2126	12.8	0.608 (0.370)	11.37 (2.24)	181 (83)	52 (11)	30.2 (102.4)
5th(1E) Gear									
75.4 (56.2)	15805 (70.3)	1.79 (2.88)	2124	12.6	0.582 (0.354)	11.88 (2.34)	181 (83)	52 (11)	30.2 (102.4)
6th(1F) Gear									
90.5 (67.5)	15690 (69.8)	2.16 (3.48)	2120	11.8	0.563 (0.343)	12.26 (2.42)	183 (84)	54 (12)	30.2 (102.4)
7th(2A) Gear									
105.0 (78.3)	15645 (69.6)	2.52 (4.05)	2110	10.5	0.524 (0.319)	13.19 (2.60)	185 (85)	54 (12)	30.2 (102.4)
8th(2B) Gear									
121.2 (90.4)	15175 (67.5)	3.00 (4.82)	2020	7.2	0.485 (0.295)	14.23 (2.80)	187 (86)	54 (12)	30.2 (102.4)
9th(2C) Gear									
132.4 (98.7)	14790 (65.8)	3.36 (5.40)	1892	5.6	0.457 (0.278)	15.13 (2.98)	187 (86)	54 (12)	30.2 (102.4)
*10th(2D) Gear									
150.4 (112.2)	14275 (63.5)	3.95 (6.35)	1840	5.2	0.461 (0.281)	14.97 (2.95)	187 (86)	54 (12)	30.2 (102.4)
*11th(3A) Gear									
157.3 (117.3)	13465 (59.9)	4.38 (7.05)	1831	5.0	0.448 (0.272)	15.43 (3.04)	180 (82)	45 (7)	30.2 (102.4)
*12th(2E) Gear									
158.1 (117.9)	12860 (57.2)	4.61 (7.42)	1822	4.6	0.441 (0.268)	15.65 (3.08)	190 (88)	54 (12)	30.2 (102.4)
*13th(3B) Gear									
160.4 (119.6)	11130 (49.5)	5.41 (8.70)	1838	4.1	0.441 (0.268)	15.68 (3.09)	189 (81)	46 (8)	30.2 (102.4)
*14th(2F) Gear									
161.1 (120.1)	10860 (48.3)	5.56 (8.95)	1820	3.9	0.441 (0.268)	15.68 (3.09)	186 (87)	54 (12)	30.2 (102.4)
*15th(3C) Gear									
162.9 (121.5)	9755 (43.4)	6.26 (10.08)	1813	3.5	0.432 (0.263)	15.99 (3.15)	189 (81)	49 (9)	30.2 (102.4)
*16th(3D) Gear									
161.3 (120.3)	7960 (35.4)	7.60 (12.23)	1828	3.0	0.433 (0.264)	15.94 (3.14)	198 (92)	50 (10)	30.2 (102.4)
*17th(3E) Gear									
156.5 (116.7)	6495 (28.9)	9.04 (14.54)	1826	2.5	0.449 (0.273)	15.38 (3.03)	199 (93)	50 (10)	30.2 (102.4)

\*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**

**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 620/70R42;\*\*,15(100)  
 Two 480/70R30;\*\*,15(100)  
 21.7 in (550 mm)  
 10815 lb (4905 kg)  
 7735 lb (3510 kg)  
 18550 lb (8415 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** 18385 lb (8340 kg)

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

**NOTE 1:** 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.

**NOTE 2:** The data on this summary was obtained from OECD report 2947 conducted on the Massey Ferguson 7720 Dyna 6 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 cab noise level claim of 69 dB(A) with front drive engaged. 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. **2947**, Nebraska Summary 1021, June 16, 2016.

Roger M. Hoy  
 Director

M.F. Kocher  
 J.D. Luck  
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 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

29 GPM (110 l/min)

Optional pump

39 GPM (150 l/min)

two outlet sets combined

30.7 GPM (116.2 l/min)

two outlet sets combined

42.1 GPM (159.2 l/min)

ii) Pump delivery rate at minimum pressure:

iii) Pump delivery rate at maximum

hydraulic power:

Delivery pressure:

Power:

29.2 GPM (110.5 l/min)

1990 psi (137 bar)

33.9 HP (25.2 kW)

38.6 GPM (146.3 l/min)

1820 psi (126 bar)

41.0 HP (30.6 kW)

single outlet set

30.2 GPM (114.2 l/min)

single outlet set

29.6 GPM (112.0 l/min)

ii) Pump delivery rate at minimum pressure:

iii) Pump delivery rate at maximum

hydraulic power:

Delivery pressure:

Power:

28.6 GPM (108.3 l/min)

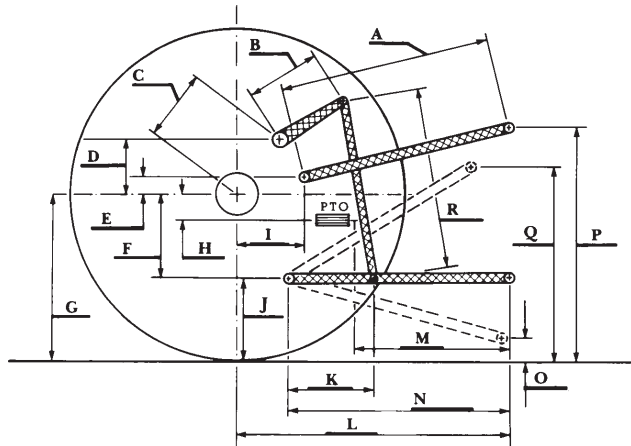
1975 psi (136 bar)

32.9 HP (24.5 kW)

27.0 GPM (102.1 l/min)

1945 psi (134 bar)

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