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NEBRASKA OECD TRACTOR TEST 1733—SUMMARY 233

JOHN DEERE 9400 DIESEL

ALSO JOHN DEERE 9420 DIESEL

24 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—1108 rpm)					
312.25 (232.85)	2100	17.20 (65.11)	0.387 (0.235)	18.15 (3.58)	
Standard Power Take-off Speed—(PTO speed—1003 rpm)					
343.44 (256.11)	1900	18.03 (68.23)	0.369 (0.224)	19.05 (3.75)	
Maximum Power (2 hours)					
343.44 (256.11)	1900	18.03 (68.23)	0.369 (0.224)	19.05 (3.75)	

VARYING POWER AND FUEL CONSUMPTION

312.25 (232.85)	2100	17.20 (65.11)	0.387 (0.235)	18.15 (3.58)	Air temperature
270.60 (201.78)	2146	15.17 (57.42)	0.394 (0.240)	17.84 (3.51)	78°F (26°C)
204.70 (152.64)	2163	12.22 (46.25)	0.419 (0.255)	16.76 (3.30)	Relative humidity
137.94 (102.89)	2179	9.53 (36.06)	0.485 (0.295)	14.48 (2.85)	40%
69.29 (51.67)	2195	6.79 (25.71)	0.688 (0.419)	10.20 (2.01)	Barometer
1.11 (0.83)	2210	3.80 (14.39)	24.053 (14.631)	0.29 (0.06)	28.97" Hg (98.10 kPa)

Maximum Torque - 1162 lb.-ft. (1575 Nm) at 1101 rpm

Maximum Torque Rise - 48.7%

Torque rise at 1701 engine rpm - 31%

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)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—12th(C2 Lo) Gear									
345.00 (257.27)	21010 (93.45)	6.16 (9.91)	2101	2.40	0.413 (0.251)	17.01 (3.35)	184 (84)	61 (16)	28.88 (97.80)
75% of Pull at Maximum Power—12th(C2 Lo) Gear									
265.52 (198.00)	15800 (70.28)	6.30 (10.14)	2137	1.87	0.435 (0.265)	16.15 (3.18)	183 (84)	59 (15)	29.07 (98.44)
50% of Pull at Maximum Power—12th(C2 Lo) Gear									
179.83 (134.10)	10505 (46.73)	6.42 (10.33)	2164	1.24	0.479 (0.291)	14.67 (2.89)	180 (82)	61 (16)	29.08 (98.48)
75% of Pull at Reduced Engine Speed—16th(C3 Lo) Gear									
265.59 (198.05)	15755 (70.08)	6.32 (10.17)	1566	1.87	0.403 (0.245)	17.41 (3.43)	183 (84)	60 (16)	29.07 (98.44)
50% of Pull at Reduced Engine Speed—16th(C3 Lo) Gear									
179.82 (134.09)	10490 (46.66)	6.43 (10.35)	1583	1.33	0.440 (0.268)	15.97 (3.15)	176 (80)	61 (16)	29.08 (98.48)

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

Dates of Test: May 2-June 18, 1997

Manufacturer: John Deere Tractor Works, 3500 East Donald St., P.O. Box 270, Waterloo Ia, 50704-0270

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8435 Fuel weight 7.023 lbs/gal (0.842 kg/l) Oil SAE 15W-40 API service classification CD, CE, CF-4 To motor 9.310 gal (35.241 l) Drained from motor 8.478 gal (32.091 l) Transmission, hydraulic and final drive lubricant John Deere Hy-Gard fluid Total time engine was operated: 42.0 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and air to air aftercooler **Serial No.** *RG6125H001702* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.00" x 6.50" (127.0 mm x 165.0 mm) **Compression ratio** 16.0 to 1 **Displacement** 765 cu in (12535 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, separate radiators for hydraulic and transmission oil, radiator for front and rear axle oil **Fuel filter** two paper cartridges **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: (360 engine hp) 120.6 - 129.4 lb/h (54.7 - 58.7 kg/h), (400 engine hp) 133.3-142.2 lb/h (60.5-64.5 kg/h), (425 engine hp) 141.3-150.1 lb/h (64.1-68.1kg/h) **High idle:** 2175 - 2275 rpm **Turbo boost:** nominal 23.6 - 28.0 psi (163 - 193 kPa) as measured 25.5 psi (176 kPa)

CHASSIS: Type four wheel drive with duals **Serial No.** *RW9400H001447* **Tread width** rear 68.4" (1738 mm) to 143.9" (3655 mm) front 68.4" (1738 mm) to 143.9" (3655 mm) **Wheelbase** 137.8" (3500 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled power shift **Nominal travel speeds mph (km/h)** first 2.09 (3.36) second 2.50 (4.03) third 2.69 (4.33) fourth 3.22 (5.19) fifth 3.68 (5.92) sixth 4.41 (7.10) seventh 4.45 (7.16) eighth 4.91 (7.90) ninth 5.34 (8.59) tenth 5.73 (9.22) eleventh 5.88 (9.47) twelfth 6.32 (10.17) thirteenth 6.87 (11.06) fourteenth 7.58 (12.19) fifteenth 7.85 (12.63) sixteenth 8.65 (13.92) seventeenth 9.40 (15.13) eighteenth 10.37 (16.69) nineteenth 10.46 (16.83) twentieth 12.54 (20.18) twenty-first 13.47 (21.67) twenty-second 16.14 (25.98) twenty-third 18.43 (29.66) twenty-fourth 22.10 (35.56) reverse 2.51 (4.03), 3.00 (4.83), 5.34 (8.59), 5.89, (9.47), 6.40 (10.30), 7.06 (11.36)

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)	Temp. °F (°C) cool- ing med	Barom. inch Hg (kPa)
3rd (A2 Lo) Gear							
254.44 (189.73)	38409 (170.85)	2.48 (4.00)	2138	9.32	0.458 (0.278)	179 (82)	29.03 (98.31)
4th (A2 Hi) Gear							
277.74 (207.11)	34253 (152.36)	3.04 (4.89)	2099	5.49	0.434 (0.264)	183 (84)	29.04 (98.34)
5th (A3 Lo) Gear							
285.68 (213.03)	30384 (135.15)	3.53 (5.67)	2102	4.23	0.422 (0.257)	180 (82)	29.05 (98.37)
6th (A3 Hi) Gear							
315.34 (235.15)	27778 (123.56)	4.26 (6.85)	2101	3.54	0.425 (0.258)	188 (86)	28.85 (97.70)
7th (B1 Lo) Gear							
320.49 (238.99)	27922 (124.20)	4.30 (6.93)	2104	3.46	0.418 (0.254)	189 (87)	28.83 (97.63)
8th (C1 Lo) Gear							
344.42 (256.84)	27262 (121.27)	4.74 (7.62)	2099	3.28	0.414 (0.252)	189 (87)	28.86 (97.73)
9th (B1 Hi) Gear							
344.70 (257.04)	25023 (111.31)	5.17 (8.31)	2097	3.02	0.415 (0.252)	188 (86)	28.86 (97.73)
10th (B2 Lo) Gear							
346.29 (258.23)	23360 (103.91)	5.56 (8.95)	2097	2.85	0.411 (0.250)	184 (84)	28.87 (97.77)
11th (C1 Hi) Gear							
344.10 (256.59)	22583 (100.45)	5.71 (9.20)	2097	2.76	0.411 (0.250)	189 (87)	28.86 (97.73)
12th (C2 Lo) Gear							
345.00 (257.27)	21010 (93.45)	6.16 (9.91)	2101	2.40	0.413 (0.251)	184 (84)	28.88 (97.80)
13th (B2 Hi) Gear							
340.78 (254.12)	19025 (84.63)	6.72 (10.81)	2102	2.31	0.418 (0.254)	190 (88)	28.88 (97.80)
14th (C2 Hi) Gear							
338.05 (252.08)	17083 (75.99)	7.42 (11.94)	2101	1.96	0.414 (0.252)	191 (88)	28.88 (97.80)
15th (B3 Lo) Gear							
332.74 (247.91)	16259 (72.32)	7.67 (12.34)	2095	1.87	0.419 (0.255)	195 (91)	28.88 (97.80)
16th (C3 Lo) Gear							
333.67 (248.82)	14760 (65.66)	8.48 (13.64)	2096	1.69	0.431 (0.262)	189 (87)	28.88 (97.80)

Clutch wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically actuated foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 1895 engine rpm **Unladen tractor mass** 37246 lb (16894 kg)

REPAIRS AND ADJUSTMENTS: A hydraulic line was replaced following the hydraulic flow test.

NOTE: The 9400 engine has an electronic control system which provides a vehicle protection system to avoid overloading the drive train. This system provides three different engine power levels. At 2100 rpm the engine produces up to 360 hp when the transmission is in forward gears A1-Lo through A3-Lo, when the tractor is being used for stationary PTO operations or when the rockshaft is lowered below the transport lock position. At 2100 rpm the engine produces 400 hp when the transmission is in gears A3-Hi or B1-Lo. At 2100 rpm the engine produces 425 hp in all other applications.

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 injection pump inlet was maintained at 190°F (88°C). The pull in 3rd(A2Lo) gear was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD Code II test code procedure.

Note: Report reprinted. Supplemental sales permit for John Deere 9420, March, 2002.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1733**, Nebraska Summary 233, February 5, 2002.

Brent T. Sampson
Test Engineer

L.L. Bashford
M.F. Kocher
V.I. Adamchuck
Board of Tractor Test Engineers

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi(kPa)	Four 620/70R42;**,9(60)	Four 620/70R42;**,7(50)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	1824 lb (827 kg)	None
Front Tires - No., size, ply & psi(kPa)	Four 620/70R42;**,12(85)	Four 620/70R42;**,11(75)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	2222 lb (1008 kg)	None
Height of Drawbar	18.0 in (455 mm)	18.0 in (455 mm)
Static Weight with operator - Rear	18734 lb (8498 kg)	16910 lb (7670 kg)
- Front	22722 lb(10306 kg)	20500 lb (9299 kg)
- Total	41456 lb(18804 kg)	37410 lb(16969 kg)

DRAWBAR PERFORMANCE
(Unballasted at 1900 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 (A2 Lo) Gear									
254.30 (189.63)	38353 (170.60)	2.49 (4.00)	2138	9.01	0.457 (0.278)	15.35 (3.02)	179 (82)	49 (9)	29.03 (98.31)
4th (A2 Hi) Gear									
277.47 (206.91)	35725 (158.91)	2.91 (4.69)	2043	7.12	0.437 (0.266)	16.06 (3.16)	182 (83)	53 (12)	29.04 (98.34)
5th (A3 Lo) Gear									
293.63 (218.98)	34315 (152.64)	3.21 (5.16)	1953	6.07	0.421 (0.256)	16.67 (3.28)	181 (83)	54 (12)	29.05 (98.37)
6th (A3 Hi) Gear									
313.94 (234.10)	30776 (136.90)	3.83 (6.16)	1905	4.48	0.421 (0.256)	16.69 (3.29)	184 (84)	55 (13)	28.85 (97.70)
7th (B1 Lo) Gear									
319.18 (238.01)	30983 (137.82)	3.86 (6.22)	1905	4.48	0.415 (0.252)	16.93 (3.34)	184 (84)	54 (12)	28.84 (97.66)
8th (C1 Lo) Gear									
362.71 (270.48)	32072 (142.66)	4.24 (6.83)	1904	4.82	0.411 (0.250)	17.08 (3.36)	180 (82)	56 (13)	28.86 (97.73)
9th (B1 Hi) Gear									
364.00 (271.44)	29387 (130.72)	4.64 (7.48)	1904	3.80	0.409 (0.249)	17.17 (3.38)	184 (84)	58 (14)	28.87 (97.77)
10th (B2 Lo) Gear									
367.50 (274.04)	27519 (122.41)	5.01 (8.06)	1905	3.63	0.399 (0.242)	17.62 (3.47)	182 (83)	56 (13)	29.06 (98.41)
11th (C1 Hi) Gear									
367.37 (273.95)	26789 (119.16)	5.14 (8.28)	1903	3.46	0.404 (0.245)	17.40 (3.43)	185 (85)	56 (13)	29.06 (98.41)
12th (C2 Lo) Gear									
370.70 (276.43)	25202 (112.10)	5.52 (8.88)	1894	3.20	0.399 (0.243)	17.60 (3.47)	185 (85)	55 (13)	29.06 (98.41)
13th (B2 Hi) Gear									
364.36 (271.71)	22593 (100.50)	6.05 (9.73)	1903	2.67	0.403 (0.245)	17.42 (3.43)	188 (86)	58 (14)	29.07 (98.44)
14th (C2 Hi) Gear									
363.05 (270.72)	20288 (90.24)	6.71 (10.80)	1908	2.40	0.409 (0.249)	17.17 (3.38)	189 (87)	62 (17)	28.88 (97.80)
15th (B3 Lo) Gear									
363.29 (270.90)	19642 (87.37)	6.94 (11.16)	1903	2.23	0.409 (0.249)	17.16 (3.38)	191 (88)	63 (17)	28.88 (97.80)
16th (C3 Lo) Gear									
362.58 (270.38)	17743 (78.92)	7.66 (12.33)	1902	1.96	0.410 (0.249)	17.14 (3.38)	189 (87)	63 (17)	28.88 (97.80)
17th (B3 Hi) Gear									
363.52 (271.07)	16363 (72.79)	8.33 (13.41)	1898	1.87	0.413 (0.251)	17.02 (3.35)	196 (91)	63 (17)	28.88 (97.80)

TRACTOR SOUND LEVEL WITH CAB

	dB(A)
At 75% load in 9th (B1Hi) gear	76.2
Bystander in 24th (D3 Hi) gear	90.2

DRAWBAR PERFORMANCE
(Ballasted at 1900 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	Air dry bulb	Barom. inch Hg (kPa)
268.40 (200.14)	40758 (181.30)	2.47 (3.97)	2115	8.74	0.451 (0.274)	15.58 (3.07)	181 (83)	54 (12)	29.28 (99.15)
				3rd (A2 Lo)Gear					
289.44 (215.83)	38099 (169.47)	2.85 (4.58)	1983	6.61	0.428 (0.260)	16.42 (3.23)	185 (85)	56 (13)	29.28 (99.15)
				4th (A2 Hi)Gear					
295.74 (220.53)	35372 (157.34)	3.14 (5.05)	1907	6.02	0.427 (0.259)	16.46 (3.24)	189 (87)	69 (21)	29.03 (98.31)
				5th (A3 Lo)Gear					
315.38 (235.18)	30851 (137.23)	3.83 (6.17)	1905	4.19	0.420 (0.256)	16.71 (3.29)	187 (86)	70 (21)	29.02 (98.27)
				6th (A3 Hi)Gear					
319.57 (238.31)	31005 (137.92)	3.87 (6.22)	1903	4.19	0.416 (0.253)	16.89 (3.33)	192 (89)	70 (21)	29.01 (98.24)
				7th (B1 Lo)Gear					
364.80 (272.03)	32002 (142.35)	4.27 (6.88)	1914	4.45	0.411 (0.250)	17.09 (3.37)	185 (85)	68 (20)	29.04 (98.34)
				8th (C1 Lo)Gear					
368.67 (274.92)	29679 (132.02)	4.66 (7.50)	1901	3.50	0.407 (0.248)	17.26 (3.40)	192 (89)	58 (14)	29.28 (99.15)
				9th (B1 Hi)Gear					
374.20 (279.04)	27957 (124.36)	5.02 (8.08)	1902	3.24	0.400 (0.243)	17.55 (3.46)	194 (90)	59 (15)	29.29 (99.15)
				10th (B2 Lo)Gear					
369.74 (275.71)	26876 (119.55)	5.16 (8.30)	1901	2.98	0.403 (0.245)	17.43 (3.43)	196 (91)	59 (15)	29.29 (99.15)
				11th (C1 Hi)Gear					
372.29 (277.62)	25077 (111.55)	5.57 (8.96)	1905	2.80	0.403 (0.245)	17.44 (3.44)	191 (88)	60 (16)	29.29 (99.15)
				12th (C2 Lo)Gear					
370.39 (276.20)	22893 (101.83)	6.07 (9.76)	1904	2.54	0.430 (0.245)	17.42 (3.43)	193 (89)	61 (16)	29.28 (99.15)
				13th (B2 Hi)Gear					
365.81 (272.78)	20385 (90.67)	6.73 (10.83)	1910	2.36	0.408 (0.248)	17.22 (3.39)	190 (88)	62 (17)	29.28 (99.15)
				14th (C2 Hi)Gear					
367.70 (274.20)	19897 (88.50)	6.93 (11.15)	1898	2.10	0.406 (0.247)	17.30 (3.41)	197 (91)	63 (17)	29.28 (99.15)
				15th (B3 Lo)Gear					
367.29 (273.89)	17949 (79.84)	7.67 (12.35)	1902	1.92	0.406 (0.247)	17.30 (3.41)	199 (93)	64 (18)	29.29 (99.19)
				16th (C3 Lo)Gear					
363.76 (271.25)	16316 (72.57)	8.36 (13.46)	1902	1.83	0.413 (0.251)	17.02 (3.35)	192 (89)	66 (19)	29.28 (99.15)
				17th (B3 Hi)Gear					

THREE POINT HITCH PERFORMANCE (OECD Static Test)

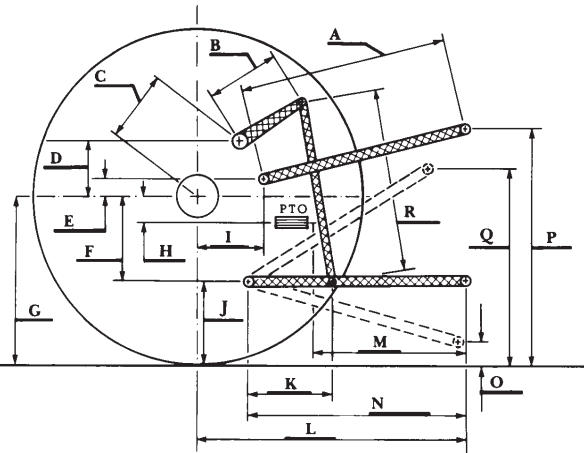
CATEGORY: III, IV

Quick Attach: yes

Maximum Force Exerted Through Whole Range: Category III
 13104 lbs (58.3 kN) (Cat. III hitch)
 14382 lbs (64.0 kN) (Cat. IV hitch)

i) Opening pressure of relief valve: NA
 Sustained pressure at compensator cutoff: 3000 psi (207 bar)
 Pump delivery rate at minimum pressure and rated engine speed: 44.3 GPM (167.7 l/min)

iii) Pump delivery rate at maximum hydraulic power: 40.2 GPM (152.2 l/min)
 Delivery pressure: 2550 psi (176 bar)
 Power: 59.8 HP (44.6 kW)



THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. (bar): 2950 (203)
 Location: remote outlet
 Hydraulic oil temperature: °F (°C): 147 (64)
 Location: hydraulic sump
 Category: III, IV
 Quick attach: yes

Category III (lift cylinders - 2x90 mm) SAE Static Test—System pressure 2575 psi (177 Bar)

Hitchpoint distance to ground level in. (mm)	8.0 (203)	16.0 (409)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb	14589	14463	14418	13995	12978
" " " " " " (kN)	(64.9)	(64.3)	(64.1)	(62.3)	(57.7)

ASAE Static Test—System pressure 2775 psi (191 Bar)

Hitchpoint distance to ground level in. (mm)	8.0 (203)	16.0 (409)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb	15715	15580	15531	15076	13980
" " " " " " (kN)	(69.9)	(69.3)	(69.1)	(67.1)	(62.2)

Category IV (lift cylinders - 1x90 mm & 1x100 mm) SAE Static Test - System pressure 2575 psi (177 Bar)

Hitchpoint distance to ground level in. (mm)	8.0 (203)	15.2 (386)	22.4 (569)	29.6 (752)	36.8 (935)	43.0 (1092)
Lift force on frame lb	16074	15908	16029	15696	14994	13518
" " " " " " (kN)	(71.5)	(70.8)	(71.3)	(69.8)	(66.7)	(60.1)

ASAE Static Test—System pressure 2775 psi (191 Bar)

Hitchpoint distance to ground level in. (mm)	8.0 (203)	15.2 (386)	22.4 (569)	29.6 (752)	36.8 (935)	43.0 (1092)
Lift force on frame lb	17199	17020	17208	16851	16152	14562
" " " " " " (kN)	(76.5)	(75.7)	(76.6)	(75.0)	(71.8)	(64.8)

HITCH DIMENSIONS AS TESTED—NO LOAD

	Category III		Category IV	
	inch	mm	inch	mm
A	30.8	780	30.3	770
B	18.6	472	18.6	472
C	26.2	666	26.2	666
D	24.4	620	24.4	620
E	11.3	288	11.3	288
F	13.8	350	13.8	350
G	35.6	905	35.6	905
H	4.8	122	4.8	122
I	22.7	577	22.7	577
J	21.8	555	21.8	555
K	28.8	731	28.3	718
L	55.3	1405	54.5	1384
*L'	61.8	1570	60.5	1537
M	25.4	645	24.6	625
N	44.0	1117	43.2	1097
O	8.0	203	8.0	203
P	48.6	1234	48.6	1234
Q	39.1	993	39.0	991
R	44.8	1137	45.0	1143

*L' to Quick Attach ends



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