

# Electric Vehicle Performance - Design Data

Vehicle: Honda Civic 1500S, 1984

version: 1.1

Electric Motor: Err:508

<b>Weights:</b> Original vehicle 1907 lbs - Components removed 450 lbs + Motor ### lbs + Batteries ### lbs + Other components 50 lbs Net Vehicle Weight ### lbs	<b>Gear Ratios:</b> 1st gear ratio 2.916 2nd gear ratio 1.764 3rd gear ratio 1.181 4th gear ratio 0.846 5th gear ratio 0.714 Differential ratio 4.066
<b>Drag:</b> Drive train efficiency 0.91 Rolling Resistance 0.012 Steering and Brake, Csb 0.003	<b>Tires:</b> 175/70R1 Overall diameter 24 Revolutions per mile <b>Err:508</b>
<b>Aerodynamic Drag:</b> Average wind velocity 9 mph Frontal area 16 square feet Coefficient of drag, Cd 0.3 Relative wind coefficient, Crw 1.2	<b>Batteries:</b> Battery voltage 12 Number 10 Weight per battery 86 Battery pack voltage <b>Err:508</b>

Design speed 65 mph	Motor RPM at design HP <b>Err:508</b>
Design Wheel Torque ### ft-lbs	
Motor horsepower ### hp	Optimum gear ratio <b>Err:508</b>

<b>Cd for different vehicles:</b> cars 0.30 - 0.35 vans 0.33 - 0.35 pickups 0.42 - 0.46
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<b>Crw for different vehicles:</b> streamlined 1.2 average sedan 1.4 pickup or van 1.6	<b>Cr for different surfaces:</b> hard surface 0.015 medium-hard 0.08 soft 0.3
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<b>Trojan Battery Specs:</b>	Minutes	Energy Density	20 AH
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Model	Volts	@ 75 amps	lbs	watt-hours/lb	Cap.
T-105	6	107	61	15.5	217
T-125	6	125	66	15.6	235
T-145	6	145	71	15.0	244
27TMH	12	50	60	15.2	117
5SHP	12	78	86	14.2	165

based on equations and data in "Build Your Own Electric Vehicle" by Bob Brant, Tab Books, 1994  
courtesy of Doug Wilson (send comments, corrections and improvements to [wilson@bwco.com](mailto:wilson@bwco.com))

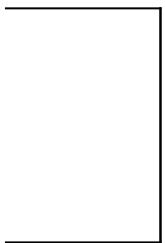
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Overall  
**11.856**  
**7.172**  
**4.802**  
**3.440**  
**2.903**

3  
inches

volts

lbs



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wtt-hrs

per bat.  
1302  
1410  
1464  
1404  
1980