

Starter Battery: Interstate 550CCA (Mercury Sabre GS)

" BATTERY REGENERATION TEST "

Date: February 01, 2006

Type: Starter Battery for Automobile.

Maker:: Interstate Battery Mega Tron Pro-rate warranty 60 month MT-35

Spec.: Flooded battery /690 CA / 550 CCA

Age of the battery: November 1999 (6 years and 2 month)

<January 31, 2006>

* The battery is from recycle bin at "7th Ave. Service LLC". (Considered as a dead battery.)

* No plates were exposed but water was low and added.

* In all cell, electrolyte had larger specks of black spots and looked very damaged.

Technician at garage suggested electrolyte to be replaced. (but, not replaced.)

* Charged before installation, then driven for about 40 minutes with Nanopulser installed.

* After parked at 5:00 PM, Nanopulser was uninstalled, then battery rested over night.

**** All the recorded measurement were taken after over night rest.****

Specific Gravity from positive to negative.

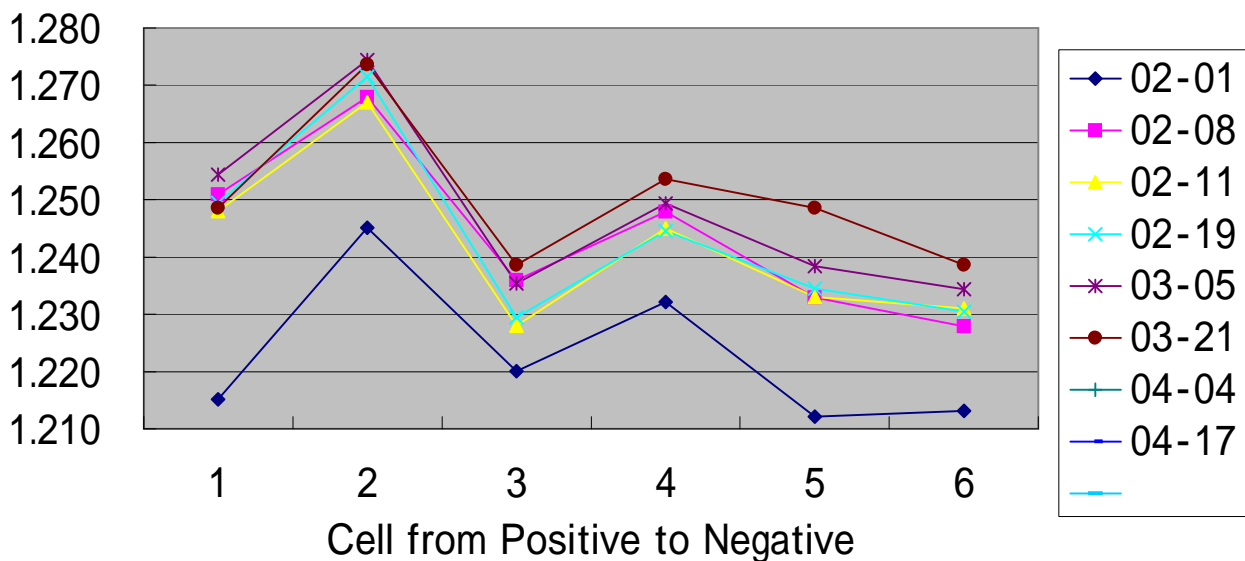
Cell / Date	02-01	02-08	02-11	02-19	03-05	03-21	04-04	04-17
1	1.215	1.251	1.248	1.250	1.254	1.249		
2	1.245	1.268	1.267	1.272	1.274	1.274		
3	1.220	1.236	1.228	1.230	1.235	1.239		
4	1.232	1.248	1.245	1.245	1.249	1.254		
5	1.212	1.233	1.233	1.235	1.238	1.249		
6	1.213	1.228	1.231	1.231	1.234	1.239		
Average S.G	1.223	1.244	1.242	1.243	1.248	1.250		
Temp	13	17	10	5	12	18		
Time	8:30 AM	8:30 AM	9:15 AM	12:00 PM	9:00 AM	8:45 AM		

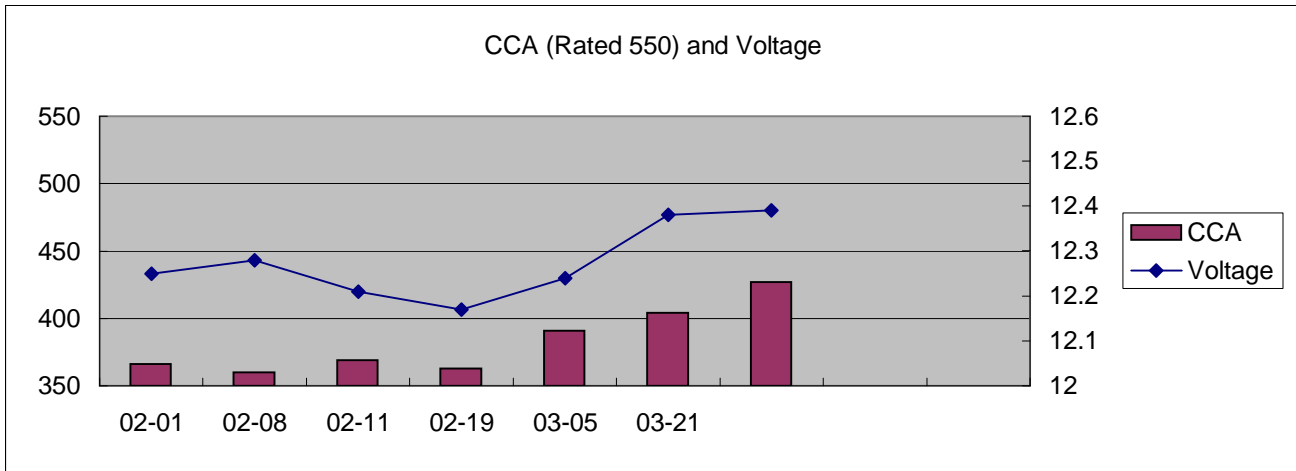
* Temperature adjustment / 1 = 0.0007 -- adjust to 20 . Example at 13 : (13-20)X0.0007=- 0.0049

CCA rating

Date	02-01	02-08	02-11	02-19	03-05	03-21		
CCA	366	360	369	363	391	404	427	
Voltage	12.25	12.28	12.21	12.17	12.24	12.38	12.39	
Status	Good-Rechr	Good-Rechr	Good-Rechr	Good-Rechr	Good-Rechr	Good-Rechr		

Specific Gravity

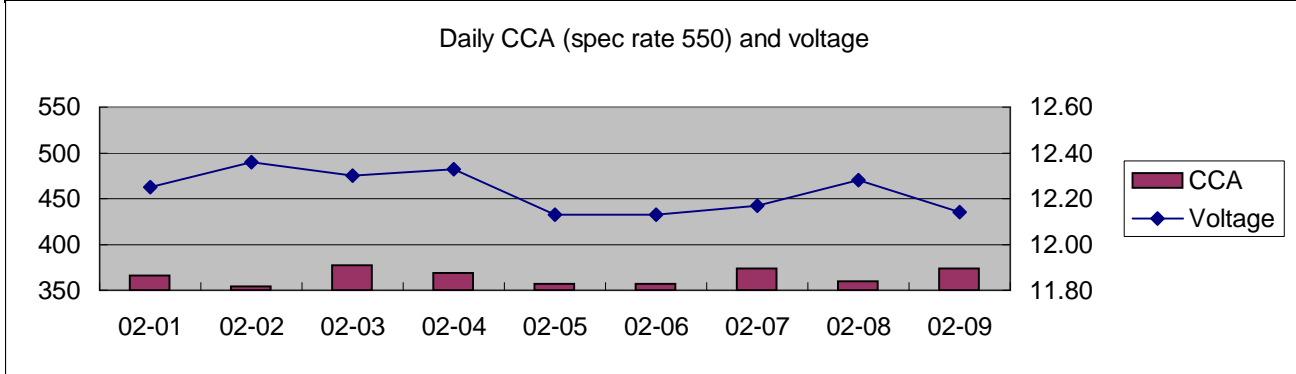




Below is Daily CCA rate

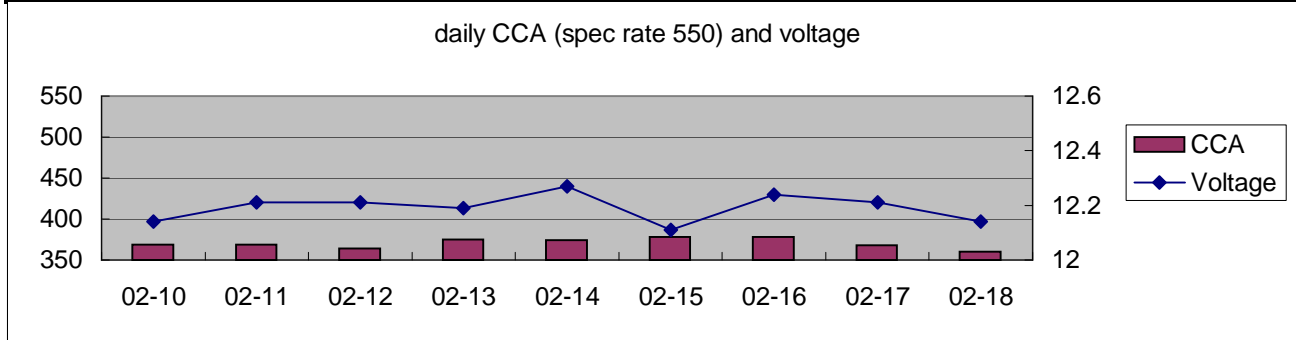
Daily CCA rating

Date	02-01	02-02	02-03	02-04	02-05	02-06	02-07	02-08	02-09
CCA	366	354	377	369	357	357	374	360	374
Voltage	12.25	12.36	12.30	12.33	12.13	12.13	12.17	12.28	12.14
Status	Good-Rechrg	Chge ReTest	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg
Time	8:30AM	8:30AM	8:15AM	11:30AM	10:30AM	8:45AM	8:30AM	8:30AM	8:45AM



Daily CCA rating

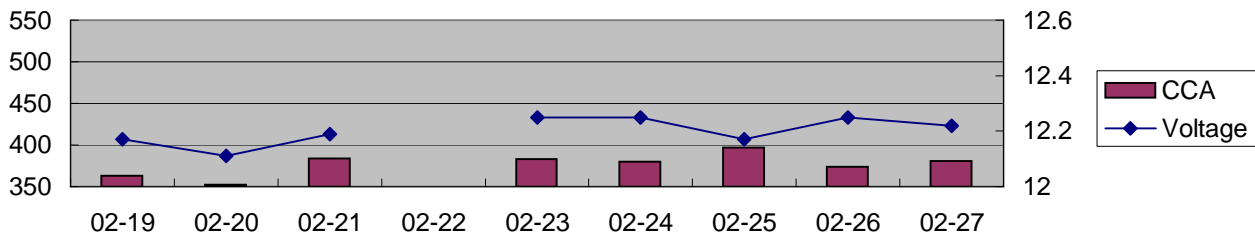
Date	02-10	02-11	02-12	02-13	02-14	02-15	02-16	02-17	02-18
CCA	369	369	364	375	374	378	378	368	360
Voltage	12.14	12.21	12.21	12.19	12.27	12.11	12.24	12.21	12.14
Status	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg	Gd - Rechrg
Time	10:00AM	9:15AM	11:00AM	9:00AM	8:45AM	8:30AM	8:30AM	8:30AM	8:30AM



Daily CCA rating

Date	02-19	02-20	02-21	02-22	02-23	02-24	02-25	02-26	02-27
CCA	363	352	384		383	380	397	374	381
Voltage	12.17	12.11	12.19		12.25	12.25	12.17	12.25	12.22
Status	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq		Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq
Time	12:00PM	9:00AM	9:00AM		9:00AM	9:00AM	9:30AM	12:00 noon	8:45AM

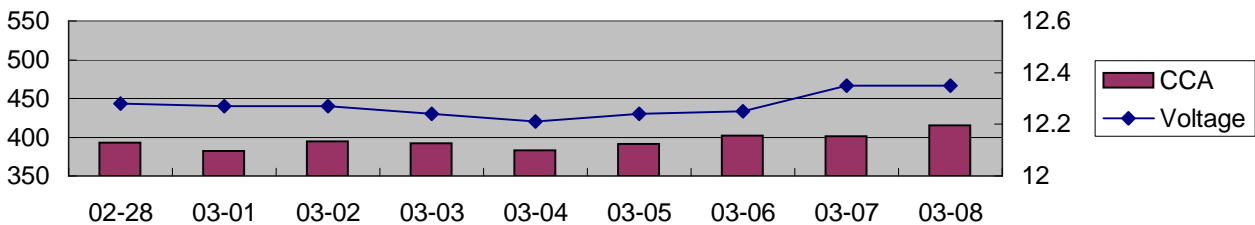
Daily CCA and Voltage



Daily CCA rating

Date	02-28	03-01	03-02	03-03	03-04	03-05	03-06	03-07	03-08
CCA	393	382	395	392	383	391	402	401	415
Voltage	12.28	12.27	12.27	12.24	12.21	12.24	12.25	12.35	12.35
Status	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq
Time	8:00AM	8:30AM	8:30AM	8:45AM	12:00 noon	9:00 AM	8:15 AM	8:00 AM	6:15 AM

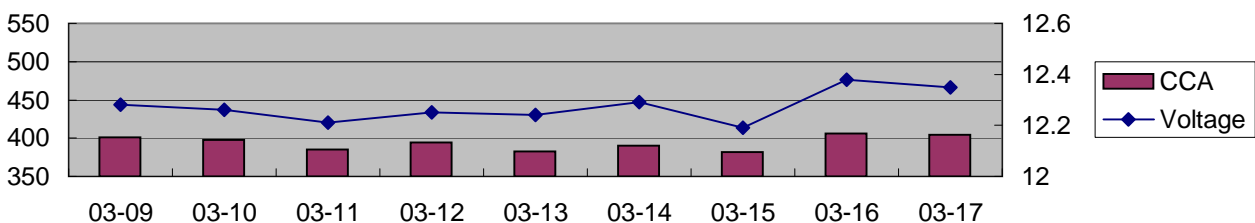
Daily CCA and Voltage



Daily CCA rating

Date	03-09	03-10	03-11	03-12	03-13	03-14	03-15	03-16	03-17
CCA	401	398	385	394	383	390	382	406	404
Voltage	12.28	12.26	12.21	12.25	12.24	12.29	12.19	12.38	12.35
Status	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq
Time	8:15 AM	8:15 AM	11:30 AM	10:30 AM	8:15 AM	8:15 AM	8:15 AM	6:30 AM	7:45 AM

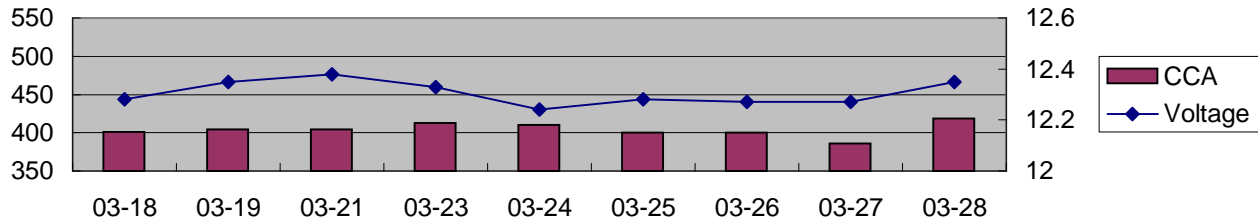
Daily CCA and Voltage



Daily CCA rating

Date	03-18	03-19	03-21	03-23	03-24	03-25	03-26	03-27	03-28
CCA	401	404	404	413	410	400	400	386	419
Voltage	12.28	12.35	12.38	12.33	12.24	12.28	12.27	12.27	12.35
Status	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq
Time	8:15 AM	8:15 AM	8:45 AM	6:45AM	8:45AM	11:30AM	12:30PM	8:15AM	8:15AM

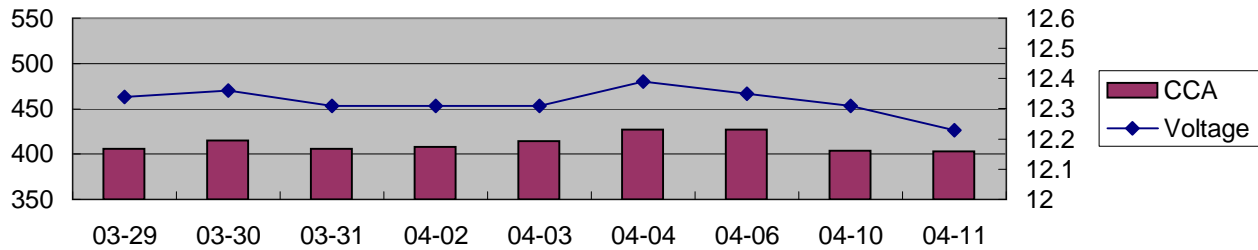
Daily CCA and Voltage



Daily CCA rating

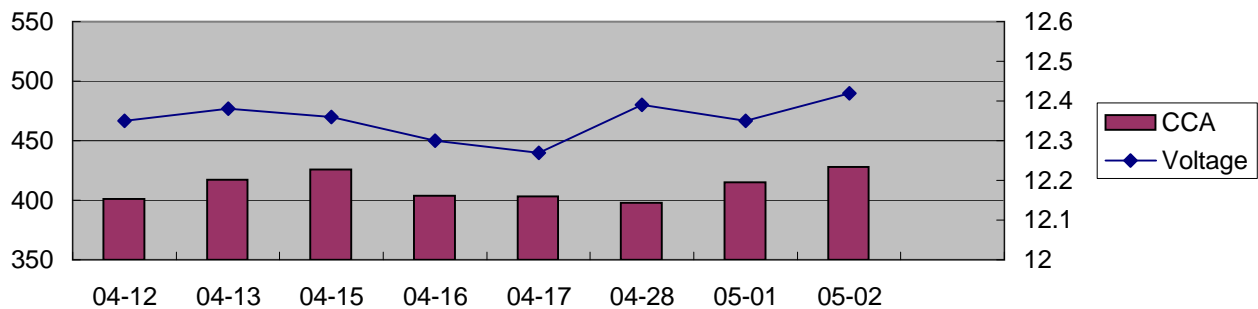
Date	03-29	03-30	03-31	04-02	04-03	04-04	04-06	04-10	04-11
CCA	406	415	406	408	414	427	427	404	403
Voltage	12.34	12.36	12.31	12.31	12.31	12.39	12.35	12.31	12.23
Status	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq
Time	7:30AM	6:45 AM	8:30AM	9:40 AM	6:30AM	8:45AM	6:45AM	7:00AM	7:00AM

Daily CCA and Voltage



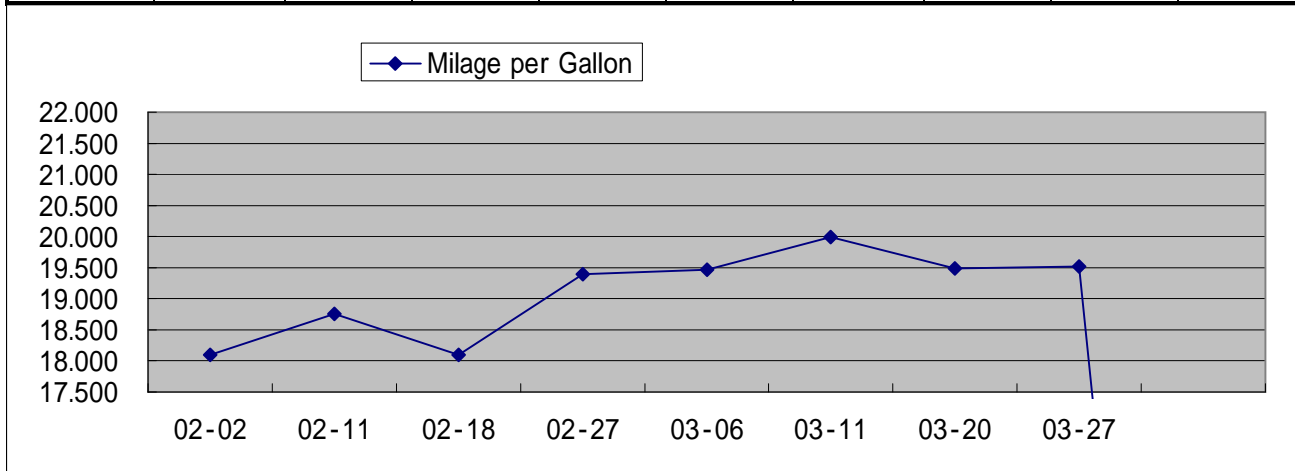
Daily CCA rating

Date	04-12	04-13	04-15	04-16	04-17	04-28	05-01	05-02
CCA	401	417	426	404	403	398	415	428
Voltage	12.35	12.38	12.36	12.3	12.27	12.39	12.35	12.42
Status	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq	Gd - Rechrq
Time	8:45AM	7:00AM	9:00AM	2:00PM	8:15AM	8:15AM	8:15AM	8:15AM



Milage per Gallon

Date	02-02	02-11	02-18	02-27	03-06	03-11	03-20	03-27	
Trip Meter	237.100	258.3	238.3	251.5	237.6	262.7	268.7	255	
Gasoline	13.098	13.768	13.168	12.966	12.203	13.143	13.788	13.063	
Mile / Gal.	18.102	18.761	18.097	19.397	19.471	19.988	19.488	19.521	#DIV/0!



Date									
Trip Meter									
Gasoline									
Mile / Gal.									

* Comments

Feb. 01	Battery rested over night. Electrolytes are a little cloudy in black color. Nanopulser is not installed.
Feb. 04	Battery rested over night.
Feb. 08	Electrolyte is clear. 8 days average CCA is 364.5CCA.
Feb. 11	After specific gravity is measured and gasoline was pumped, Nanopulser is installed.
Feb. 15~	Starting Feb 15, the temperature is very cold. Ground is forzen in the morning.
Feb. 20	It is freezing cold in the morning. Long dist drive of 50 miles today may increase CCA tomorrow.
March 07	Drived over 120 miles (Longer than usual charge time.)
March 08	Drived over 60 miles (Longer than usual charge time.)
March 09	Did not drive as much as last two days.
March 15	Did not drive much.
March 29	Today getting a two new front tires. Therefore we can expect milage would be influenced by this change. Before this date nothing was done to the car since February 01, 2006.
April 03	To visit Astoria, OR the car was driven over 6 hours this day.
April 14	Drove over 3 hours.
April 17 thru 27	Car was parked at long term airport parking for 9 days On 27 night car started without a problem. On 28th morning CCA was less than 400, but 3 days later when checked it was over 400 again.

<February 01, 2006>

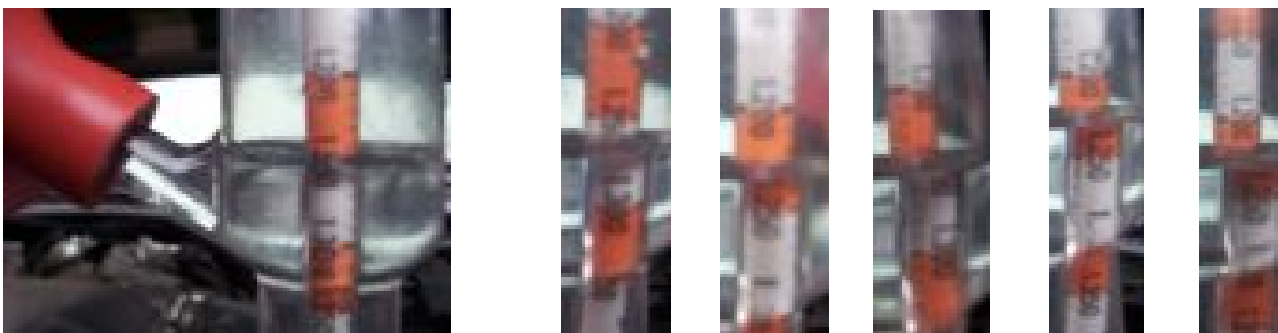
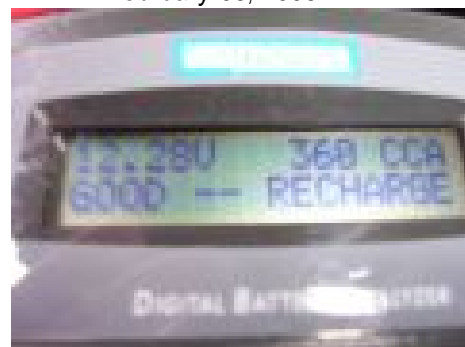


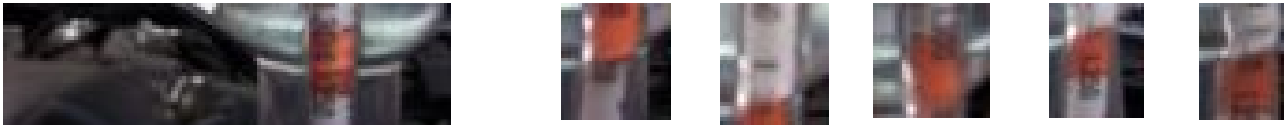
Hydrometer reading on Feb. 01, 2006 (left to right / Pos to Neg.) Slightly cloudy in black color.



February 01, 2006

February 08, 2006





Hydrometer reading on Feb. 08, 2006 (left to right / Pos to Neg.) Electrolytes are clear.

March 30, 2006

