

JOINT NOTE

Place: BEML, KGF, Bangalore.

Activity: Signet ETP battery life extender demo.

Purpose: To analyse the battery capacity improvement.

The analyses of the test results are presented in the following manner for ease of understanding:

Section A:

Testing procedure adapted.

Section B:

Observations

Section C:

Inference / Improvement

Section D:

Conclusion

Section A:

Testing Procedure adapted:

Date: 02/12/2010

A team from Signet Components Pvt Ltd; Mumbai conducted demo at MRPL, Mangalore.

A 120 AH, 12 Volt, age 1.5 years, fully charged battery used for Automobiles at Transportation dept was selected for demo. Battery parameters viz. Specific gravity and voltage recorded at 01:38 pm. Battery then put on discharge by a discharge unit. It was discharged at 12 amps. The voltage and specific gravity was recorded after every 1 hr.

During discharge specific gravity reached at 1170, hence discharge activity stopped. The end voltage of the battery at the end of 230 minutes observed 11.65 V.

Signet ETP activator @ 12 ml/ cell added in each cell.
(Doses: 10% of Ah capacity in ml per cell)

Battery then put on charge at 5 amps.

Date: 04/12/2010

After attaining full charge Signet representative repeated the discharge activity. The prolongation in discharge period was checked by comparing initial data.

Section B:

Observations:

Before activation:

1. The selected battery voltage condition was in good condition but the Specific gravity reached at 1170.
2. Battery in Off voltage condition was 12.52 V.
3. Voltage at the end of 230 minutes ie.3hrs & 50 mins was 11.65 V.
4. Specific gravity in full charge condition ranged 1250.

After Activation:

1. Specific gravity in full charged condition ranged 1250.
2. Voltage at the end of 230 minutes recorded 11.71 V.
3. Battery sustained for 260 minutes and reaches the voltage of 11.64 V with specific gravity reaching at 1170.
4. Specific gravity at the end of 230 minutes ranged 1180.
5. Battery in Off Voltage condition was 12.63 V.

Section C:

Inference / Improvement:

A) Voltage improvement

At start of discharge test

Before dosing ETP : 12.52 V

After dosing ETP : 12.63 V

At the end of discharge test (230 minutes)

Before dosing ETP : 11.65 V

After dosing ETP : 11.71 V

At the end of discharge test (180 minutes)

End Voltage : 11.64 V

B) Specific Gravity improvement

At the start of discharge test

Before dosing ETP : 1.250

After dosing ETP : 1.250

At the end of discharge test (230 minutes)

Before dosing ETP : 1.170

After dosing ETP : 1.180

At the end of discharge test (260 minutes)

After dosing ETP : 1.170

C) Capacity improvement at the end voltage 11.82 V and with Specific gravity

Discharge time before ETP dosing : 230 minutes.

Discharge time after ETP dosing : 260 minutes.

Discharge prolonged by : 30 minutes.

Capacity improvement = $(260 - 230) / 230 * 100 = 13 \%$.

Capacity improvement of 13 % is achieved.

Section D:
Conclusion:

The charge holding capacity of the battery increased. ETP has rejuvenated capacity of the battery which helped it to prolong discharge time. This capacity will further improve with charge discharge cycles over the period of time.

Signet-ETP treatment is focusing on resolving lead sulphate and rejuvenating battery capacity. This being chemical reaction further improvement is also expected and same can be verified by conducting similar test.

Signet-ETP also helps preventing crystallization of sulfation, reduces hydrogen evolution (loss of water) that attributes to increase life of NEW / IN USE BATTERIES.



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