

JOINT NOTE

Place: Jet Airways (India) Limited, Domestic Airport, Mumbai.

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 : 24/02/2011

A team from Signet Components Pvt Ltd; Mumbai conducted demo at Jet Airways (India) Limited, Domestic Airport, Mumbai.

A 130 AH, 12 Volt, age 2 years, fully charged battery used for AC coach buses was selected for demo. Battery parameters viz. Specific gravity and voltage recorded at 12:00 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.

The total voltage of battery ranged at 11.80 V which was good but specific gravity for two cells dropped to 1160, hence discharge activity stopped. The discharge time was 3hrs after which the activity stopped

Signet ETP activator @ 13 ml/ cell added in each cell.
(Doses: 10% of Ah capacity in ml per cell)

Battery then put on charge at 7 amps.

Date: 25/02/2011

After attaining full charge Signet representative repeated the discharge activity on 25/02/2011. The prolongation in discharge period was checked by comparing initial data.

Section B:

Observations:

Before activation:

1. The selected battery voltage condition appears in good condition which ranged 12.57 V
2. Specific gravity in full charge condition ranged 1240 – 1200.
3. Voltage at the end of 180 minutes ie.3hrs was 11.80 V.
4. Specific gravity at the end of 180 minutes ranges 1180 to 1160.

After Activation:

1. Specific gravity in full charged condition ranged 1240- 1200.
2. Voltage at the end of 180 minutes recorded 11.93 V.
3. Battery sustained for 220 minutes and reaches the voltage of 11.85 V which is higher than initial data.
4. Specific gravity at the end of 180 minutes ranged 1200-1180.
5. After sustaining for 220 minutes specific gravity ranges 1180 to 1160.

Section C:

Inference / Improvement:

A) Voltage improvement

At start of discharge test

Before dosing ETP : 12.57 V
After dosing ETP : 12.77 V

At the end of discharge test (180 minutes)

Before dosing ETP : 11.80 V
After dosing ETP : 11.93 V

At the end of discharge test (220 minutes)
End Voltage : 11.85 V

B) Specific Gravity improvement

At the start of discharge test

Before dosing ETP : 1240 - 1200
After dosing ETP : 1240 - 1200

At the end of discharge test (180 minutes)

Before dosing ETP : 1180 to 1160
After dosing ETP : 1200 to 1180

C) Capacity improvement at the end voltage

Discharge time before ETP dosing : 180 minutes.
Discharge time after ETP dosing : 220 minutes.
Discharge prolonged by : 40 minutes.

Capacity improvement = $(220 - 180) / 180 * 100 = 22.22 \%$.
Capacity improvement of 22.22 % 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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