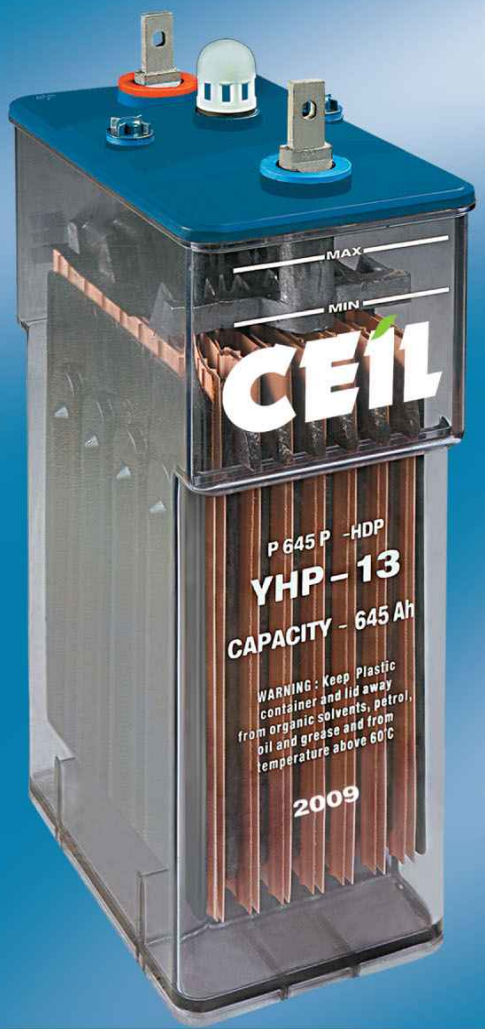
Planté

PLANTÉ
STANDBY BATTERIES



CEÍL

TRUSTED
BATTERY
SYSTEMS

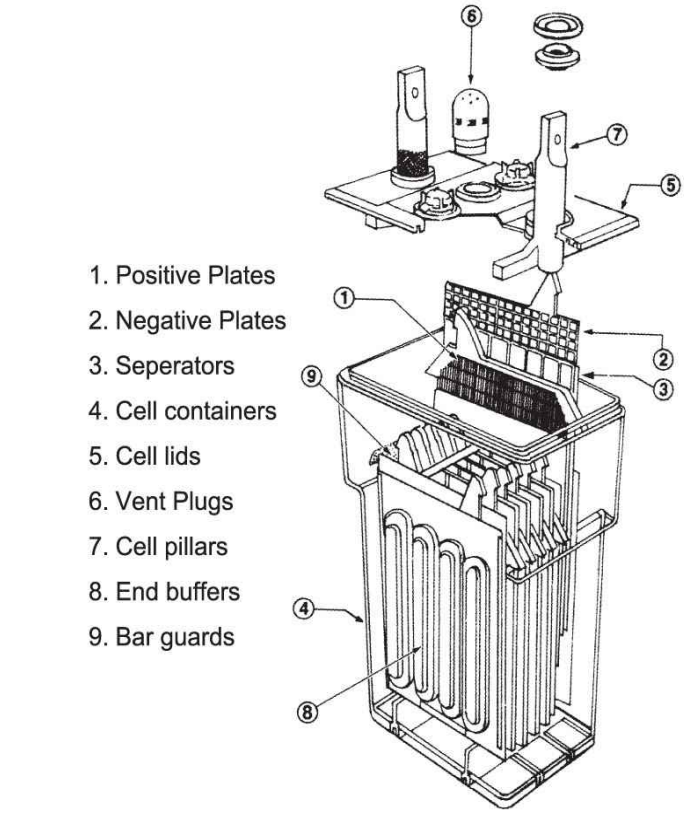
EXIDE (INDIA): Leader In Storage Power

One of the largest battery manufacturers in the world, Exide (India) Industries Limited, has led the way in bringing the best and latest of battery technology into India. Formerly known as Chloride India Limited, it traces its heritage to Chloride plc, UK, the pioneers of commercially produced batteries.

In South & South East Asia, Exide (India) is the largest battery maker by far with the widest range of Pasted Plate, Tubular, Planté and SMF VRLA batteries. Technology, innovation, quality and a country-wide service network set it apart from the competition.

Some key features are:

- 6 factories strategically located across the country
- The only company in India to manufacture batteries from 2.5 Ah to 20,400 Ah
- Collaborations with Shin Kobe and Furukuwa of Japan
- Subsidiaries in Singapore, UK and Sri Lanka
- Fast growing exports, currently to 30 countries in 5 continents
- R & D Centre, set up in 1976, is counted among the premium battery research facilities in the world and is approved by the Dept. of science and technology, Govt. of India as independent test laboratory
- Certified with ISO 9001 and ISO 14001



1. Positive Plates
2. Negative Plates
3. Seperators
4. Cell containers
5. Cell lids
6. Vent Plugs
7. Cell pillars
8. End buffers
9. Bar guards

Vent Plugs – Specially designed incorporating a microporous ceramic filter which effectively returns all acid spray to the cell, but allows free exit of oxygen and hydrogen which is generated towards the end of boost charging.

Cell Pillars – Lead alloy (YAP) with cooper insert (YCP/YHP) designed to give minimum resistance and maximum current flow.

Cell containers – Moulded from transparent Styrene Acrylonitrile (SAN) giving excellent clarity, outstanding chemical resistance, rigidity and toughness with very high insulating qualities which eliminate the need for separate cell insulators. Transparency enables the electrolyte level and the cell condition to be monitored at a glance.

Cell lids – Moulded from opaque SAN and sealed to the Container. Can be easily removed if the need for repair occurs.

Negative Plates – Pasted grid construction. Designed for balanced performance and life.

Positive Plates – Unique lamellar construction from Ultra-pure lead (99.99%) to ensure least open circuit loss and no fall-off in capacity throughout their long life.

Seperators – Sintered PVC providing a complete diaphragm between the plates. Separators are inert chemically, have excellent oxidation resistance and their high degree of porosity ensures minimum internal resistance.

Bar guards – Safeguard against short circuits.

End buffers – Provide additional lateral support at each end of the element, ensuring a compact assembly to prevent plate movement during transit.

CEIL
TRUSTED BATTERY SYSTEMS

Planté Standby

TECHNICAL SPECIFICATIONS

Cell Type	Capacity (Ah)at 27 deg. C when discharged at 10 hr. rate to 1.85V	Capacity (Ah) at 20 deg. C when discharged in			Charging Current (A)		Typical Weight (kg.) +/-5%		Approx. Qty. of acid 1.190 sp. gr. (litres)
		10 Hrs. @ 1.85V	3 Hrs. @ 1.80V	1 Hr. @ 1.75V	Starting Rate	Finishing Rate	Filled	Dry	
YAP									
YAP 5	16	15.0	12.0	9.0	2.0	1.0	4.8	2.7	1.7
YAP 7	24	22.5	18.0	13.5	3.4	1.7	5.4	3.5	1.6
YAP 9	32	30.0	24.0	18.0	5.0	2.5	6.1	4.3	1.5
YAP 11	40	37.5	30.0	23.0	6.0	3.0	8.9	5.4	2.9
YAP 13	48	45.0	36.0	27.0	7.0	3.5	9.6	6.2	2.8
YAP 15	56	52.5	43.0	31.5	8.0	4.0	10.3	7.0	2.7
YAP 17	64	60.0	49.0	36.0	9.0	4.5	11.1	7.8	2.6
YCP									
YCP 7	75	70.0	57.0	42.0	10.5	5.25	18.4	10.5	6.5
YCP 9	100	94.0	76.0	56.0	14.0	7.0	21.1	13.5	6.3
YCP 11	125	117.0	95.0	70.0	18.0	9.0	22.5	15.5	5.8
YCP 13	150	140.5	114.0	84.0	21.0	10.5	24.5	18.0	5.4
YCP 15	175	164.0	133.0	98.0	24.5	12.25	28.9	19.7	7.6
YCP 17	200	188.0	152.0	113.0	28.0	14.0	30.8	22.0	7.3
YCP 19	225	211.0	171.0	127.0	32.0	16.0	35.1	24.3	8.9
YCP 21	250	234.5	190.0	141.0	35.0	17.5	37.1	26.7	8.6
YCP 23	275	258.0	209.0	155.0	38.5	19.25	41.6	29.1	10.3
YCP 25	300	281.0	228.0	169.0	42.0	21.0	43.6	31.5	10.0
YCP 27	325	305.0	247.0	183.0	46.0	23.0	52.9	36.3	13.7
YCP 29	350	328.0	266.0	197.0	49.0	24.5	54.7	38.5	13.4
YCP 31	375	352.0	285.0	211.0	52.5	26.25	56.7	40.8	13.1
YCP 33	400	375.0	304.0	225.0	56.0	28.0	58.7	43.2	12.8
YCP 35	425	398.0	323.0	239.0	60.0	30.0	60.7	45.6	12.5
YHP									
YHP 11	535	502.0	407.0	301.0	75.0	37.5	97.2	64.3	27.1
YHP 13	645	605.0	491.0	363.0	90.0	45.0	105.9	74.8	25.7
YHP 15	750	703.0	570.0	422.0	105.0	52.5	135.7	89.6	38.1
YHP 17	860	806.0	654.0	484.0	120.0	60.0	144.4	100.0	36.7
YHP 19	965	904.0	733.0	542.0	135.0	67.5	153.1	110.3	35.4
YHP 21	1070	1003.0	813.0	602.0	150.0	75.0	175.8	121.4	44.8
YHP 23	1180	1106.0	897.0	664.0	165.0	82.5	184.4	131.8	43.5
YHP 25	1285	1204.0	976.0	722.0	180.0	90.0	215.6	145.3	58.1
YHP 27	1395	1307.0	1060.0	784.0	195.0	97.5	221.9	155.6	54.8
YHP 29	1500	1406.0	1140.0	844.0	210.0	105.0	230.6	165.9	53.5
YHP 31	1605	1504.0	1220.0	902.0	225.0	112.5	262.3	181.7	66.6
YHP 33	1715	1607.0	1303.0	964.0	240.0	120.0	270.9	192.0	65.2
YHP 35	1820	1705.0	138.3	1023.0	255.0	127.5	279.6	202.3	63.9
YHP 37	1930	1809.0	1467.0	1085.0	270.0	135.0	308.8	215.9	76.8
YHP 39	2035	1907.0	1547.0	1144.0	285.0	142.5	317.4	225.9	75.6
YHP 41	2140	2005.0	1626.0	1203.0	300.0	150.0	325.9	236.2	74.1
YHP 43	2250	2108.0	1710.0	1265.0	315.0	157.5	334.6	246.6	72.7

Note: Sp. Gr. Of acid of a fully charged cell to be 1.210 +/– 0.005

Planté *Standby*

TECHNICAL SPECIFICATIONS

Cell Type	Overall Dimensions of container (mm)			Overall Height of Cell (mm) +/- 5 mm	Cell Centre (mm)	Internal Resistance (milli Ohms)
	Length ±3mm	Width ±3mm	Height ±3mm			
YAP						
YAP 5	114	133	212	260	123	6.869
YAP 7	114	133	212	260	123	4.579
YAP 9	114	133	212	260	123	3.425
YAP 11	190	133	212	260	199	2.748
YAP 13	190	133	212	260	199	2.29
YAP 15	190	133	212	260	199	1.963
YAP 17	190	133	212	260	199	1.717
YCP						
YCP 7	173	203	349	423	211	1.564
YCP 9	173	203	349	423	211	1.11
YCP 11	173	203	349	423	211	1.05
YCP 13	173	203	349	423	211	0.91
YCP 15	210	203	349	423	211	0.78
YCP 17	210	203	349	423	211	0.75
YCP 19	248	203	349	423	211	0.68
YCP 21	248	203	349	423	211	0.65
YCP 23	286	203	349	423	211	0.59
YCP 25	286	203	349	423	211	0.52
YCP 27	362	203	349	423	211	0.48
YCP 29	362	203	349	423	211	0.44
YCP 31	362	203	349	423	211	0.42
YCP 33	362	203	349	423	211	0.38
YCP 35	362	203	349	423	211	0.36
YHP						
YHP 11	230	368	592	682	238	0.332
YHP 13	230	368	592	682	238	0.277
YHP 15	306	368	592	682	376	0.237
YHP 17	306	368	592	682	376	0.207
YHP 19	306	368	592	682	376	0.184
YHP 21	357	368	592	682	376	0.166
YHP 23	357	368	592	682	376	0.153
YHP 25	433	368	592	682	376	0.138
YHP 27	433	368	592	682	376	0.128
YHP 29	433	368	592	682	376	0.119
YHP 31	509	368	592	682	376	0.111
YHP 33	509	368	592	682	376	0.104
YHP 35	509	368	592	682	376	0.098
YHP 37	585	368	592	682	376	0.092
YHP 39	585	368	592	682	376	0.087
YHP 41	585	368	592	682	376	0.083
YHP 43	585	368	592	682	376	0.079

CEIL High Performance Planté Cells manufactured in India.

- Unmatched high discharge performance.
- Expected service life is greater than 20 years when operated on float or trickle charge at 25°C.
- 100% capacity retained throughout life span and therefore no aging factor to be considered during battery sizing – as referred in IEEE485 : 1997.
- Very Low maintenance – Topping up frequency : once in 12/18 months.
- Superior all round voltage profile and energy (Wh) output. Maximum energy output within a narrow operation voltage band.
- Capable of rapid recharging.
- Transparent containers for ease of inspection and maintenance.
- Much higher energy output compared to Tubular Cells of similar capacity and therefore, for a given application, Planté capacity will be much lower than Tubular.
- Higher Ampere-hour and Watt-hour efficiencies.
- Conforms to BS 6290 : Part 2 : 1999 and IS 1652 : 1991.

CHARGING INSTRUCTIONS

INITIAL CHARGING

- Filling-in specific gravity : 1.190±0.005 at 20°C.
- Rest Period 12-18 hours.
- Charging may be commenced at any rate between the starting and finishing rates.
- Once cell voltages reach 2.36V, reduce current to finishing rate and continue charging, till the cells are fully charged.
- If during any time of charging, temperature exceeds 50°C, suspend charging. Allow temperature to come down to 40°C and continue charging at finishing rate. If however, the time taken for the cell to cool down to 40°C is inordinately long, recharging may be started at 45°C.
- Cell are considered to be fully charged once three successive hourly readings of cell voltage and electrolyte gravity are found to be constant. All cells should also gas freely. The voltage of each cell should be around 2.75V on top of charge condition. However, the minimum total Ah input, as mentioned in the table must be provided to the cells even if the voltages and specific gravities are observed to be constant before that. On completion of charge, adjust acid level to 'Maximum' after correcting specific gravity of electrolyte to 1.210±0.005 at 20°C.

RECHARGE

FLOAT/TRICKLE CHARGE

All Planté cells should strictly be floated at voltages as mentioned in Table 2. In case of lower float voltage because of any system constraint, an equalising must be given once in 3 months.

Trickle charging currents should be so adjusted, anywhere between the maximum and minimum allowed levels given in the Table 2, such individual cells remain fully charged.

TABLE - 2

Temperature	Float Voltage
< 5°C	2.30 ± 0.02 VPC
5°C - 19°C	2.27 ± 0.02 VPC
20°C - 35°C	2.25 ± 0.02 VPC
36°C - 45°C	2.23 ± 0.02 VPC

QUICK RECHARGE

Exide (India) Planté cells after a deep discharge can also be recharged quickly by applying the Starting Rates mentioned in the table. However, currents will have to be reduced to the Finishing Rate once individual cells attain a voltage level of 2.36 volts. Care will also have to be taken so that electrolyte temperature does not exceed the maximum of 50°C in which case the charging has to be discontinued until the temperature drops below 40°C. Charging may be resumed at the finishing rate from this point.

Equalizing charge

Periodical Equalising Charge to be done, depending on the Float Voltage, by charging at Constant Current Charge at Finishing Rate, upto 2.75vpc, till Sp. Gravity reaches steady value and all cells gas freely, followed by a Constant Current Charge at half the Finishing rate for 16 to 24 hours.

Applications

CEIL High Performance Planté range of Cells are suitable for Standby duties in:

Power Plants

Telecommunication Systems

Transmission & Distribution Substations

UPS Systems for critical operation

Switchgear Operation

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