HBL®

Triumph™ HP

Valve regulated lead-acid batteries

Designed To Perform
in Tropical Conditions
For Float/Cyclic Applications

Specifications at a glance

Design and Construction:

- **Positive Plate:** Flat Pasted type with high corrosion resistant alloy for deep discharge and long life characteristics
- **Negative Plate:** Flat pasted type with Lead-calcium grid alloy for reduced gassing.
- **Container:** High impact Polypropylene co-polymer, ribbed jar design for better heat dissipation and strength.
- **Separator:** Low resistance, high porosity and highly absorbent type glass mat separator (AGM).
- **Electrolyte:** High purity Sulphuric acid to maximize shelf life.
- **Terminals:** Lead plated brass inserts.
- **Safety Valve:** Self resealing, pressure regulated.
- **Container and cover sealing:** Heat Sealing Method for better joint strength.

Operation:

- **Type of charging:** Constant potential, current limited to 20% of the rated capacity (0.2 C_{10} Amp)
- **Float Application:**
  Float Voltage : 2.250± 0.005 VPC at 25°C
  Boost Voltage : 2.300± 0.005 VPC at 25° C
- **Cyclic Application:**
  Float Voltage : 2.270± 0.005 VPC at 25°C
  Boost Voltage : 2.350± 0.005 VPC at 25°C
- **Maximum limit for AC Ripple:**
  Ripple current shall not exceed 3% RMS w.r.t battery nominal capacity.

  Ripple voltage shall not exceed 1% RMS w.r.t battery nominal voltage rating

Performance Conforms to:

- IEC 60896-21&22:2004.
- TEC/GR/TX/BAT-001/04 June 2011
- IS 15549:2005

Standards for maintenance:

- *IEEE Std1188TM - IEEE Recommended Practice for Maintenance, Testing and Replacement of Valve Regulated Lead-Acid (VRLA) Batteries for Stationary Applications*

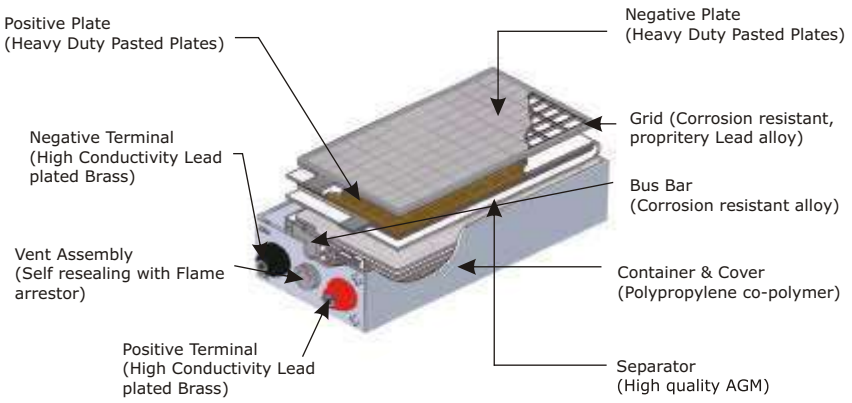
- **Float life:** 20 years designed life at 25°C on full float with recommended charging methods
- **Designed Cyclic life at 25°C**
  1200 Cycles at 80% Depth of Discharge
  2000 Cycles at 50% Depth of Discharge
  4000 Cycles at 20% Depth of Discharge

The Widest range of specialised DC Power Systems

HBL is the largest manufacturer of specialized batteries in India, for Industrial, Telecom, Railways and Defence applications. HBL offers its Customers the most appropriate technology based on the requirement, from the wide range of batteries – Lead acid & Nickel-cadmium, Silver zinc, Lead acid and Lithium thermal batteries. Chargers for rechargeable batteries are also manufactured in both TR and SMR versions from 24V to 220V. The company has sales of about US $ 275 million and a very substantial design and development capabilities, in-house.

Over 30 years of experience in the domestic market and over 10 years in exporting to many areas of the world, including North America, South America, the Middle East and South East Asia, has given HBL an understanding of the customers special varied requirements. Several major customers have found the company's products to be reliable. The company has adequate marketing and service network, which can support the customers at short notice.

Design and construction



ISO 14001 ISO 9001 BS OHSAS 18001

The Triumph-HP series is a premium design valve regulated lead acid battery. The battery works on the gas recombination principle and has been designed to meet the requirements of a wide range of applications. This product has been manufactured under the controls established by a quality / environmental management system that meets the requirements of ISO 9001:2008/ISO 14001:2004, which has been independently certified by BVCI.

Features of Triumph-HP batteries

Horizontal plate stacking	• Consistent performance and longer life • Eliminates acid stratification
Ventilated module design	• Excellent thermal management of battery
20 years designed life	• Tested as per ANSI T1.330 standard
Grid growth provision	• Enhancement of battery life by prevention of failure due to grid growth

Benefits to our customers

- No water top-up required throughout its life - Maintenance-free
- No special battery rooms required, as no corrosive fumes
- Better foot print due to stackable design
- Customized solutions to address variety of applications
- Designed for high integrity and long life
- Ease of installation and ready to use - supplied in factory charged condition
- UL recognized plastic components (optional)
- Reduced installation and maintenance time

Applications

*** Telecommunications * Power * Oil and Gas * Solar Photovoltaic Systems**
*** Process control systems * UPS * Emergency Lighting * Railways**

Product Specifications

Model No.	Nominal Capacity (Ah) at C 10	No. of basic cells per module	No. of basic modules	Discharge current in Amps				Basic Module Dimensions & Weight				internal Res of each cell (± 15%) m. Ohm	Short Circuit Current in(± 15%) KA
				8 Hr (1.75 ECV)	5 Hr (1.75 ECV)	3 Hr (1.75 ECV)	1 Hr (1.70 ECV)	Length (mm)	Depth * (mm)	Height (mm)	Weight (kg)		
T-100 HP	100 Ah	12		13	17	27	62	755	381	251	105	1.118	1.85
T-150 HP	150 Ah	12	---	19	26	40	93	755	381	251	132	0.745	2.78
T-200 HP	200 Ah	12	---	25	34	53	123	755	381	303	161	0.660	3.19
T-250 HP	250 Ah	8	---	31	43	66	154	755	381	248	132	0.585	3.67
T-300 HP	300 Ah	8	---	38	52	80	185	755	381	288	153	0.509	4.14
T-350 HP	350 Ah	8	---	44	60	93	216	755	381	338	178	0.465	4.67
T-400 HP	400 Ah	4	---	50	69	106	247	755	381	209	105	0.420	5.19
T-450 HP	450 Ah	4	---	56	77	120	278	755	381	223	113	0.352	6.12
T-500 HP	500 Ah	4	---	63	86	133	309	755	381	251	132	0.284	7.04
T-550 HP	550 Ah	4	---	69	95	146	340	755	381	280	146	0.264	7.90
T-600 HP	600 Ah	4	---	75	103	160	370	755	381	280	152	0.244	8.75
T-650 HP	650 Ah	4	---	81	112	173	401	755	381	295	162	0.225	8.88
T-680 HP	680 Ah	4	---	85	117	181	420	776	640	246	216	0.340	6.22
T-760 HP	760 Ah	4	---	95	131	202	469	776	640	246	231	0.307	6.88
T-850 HP	850 Ah	4	---	106	146	226	525	776	640	246	247	0.283	7.46
T-925 HP	925 Ah	4	---	116	159	246	571	776	640	278	269	0.265	7.95
T-1000 HP	1000 Ah	4	---	125	172	266	617	776	640	278	287	0.246	8.60
T-1100 HP	1100 Ah	4	---	138	189	293	679	776	640	321	316	0.214	10.01
T-1200 HP	1200 Ah	4	---	150	207	319	741	776	640	321	327	0.195	10.54
T-1250 HP	1250 Ah	4	---	156	215	332	772	776	640	321	343	0.186	11.09
T-1360 HP	1360 Ah	4	---	170	234	362	840	776	640	376	374	0.164	12.58
T-1440 HP	1440 Ah	4	---	180	248	383	889	776	640	376	387	0.156	13.19
T-1500 HP	1500 Ah	4	---	188	258	399	926	776	640	376	401	0.153	13.47
T-1600 HP	1600 Ah	4	---	200	275	426	988	776	640	376	416	0.151	13.64
✧ T-1700 HP	1700 Ah	4	2	213	293	452	1049	776	640	246	247	0.149	14.22
✧ T-1850 HP	1850 Ah	4	2	231	318	492	1142	776	640	278	269	0.139	15.15
✧ T-2000 HP	2000 Ah	4	2	250	344	532	1235	776	640	278	287	0.129	16.38
✧ T-2200 HP	2200 Ah	4	2	275	379	585	1358	776	640	321	316	0.118	18.19
✧ T-2350 HP	2350 Ah	4	2	294	404	625	1451	776	640	321	327	0.107	19.16
✧ T-2500 HP	2500 Ah	4	2	313	430	665	1543	776	640	321	343	0.102	20.17
✧ T-2650 HP	2650 Ah	4	2	331	456	705	1636	776	640	376	374	0.094	21.88
✧ T-2800 HP	2800 Ah	4	2	350	482	745	1728	776	640	376	387	0.090	22.94
✧ T-3000 HP	3000 Ah	4	2	375	516	798	1852	776	640	376	401	0.088	23.43
✧ T-3200 HP	3200 Ah	4	2	400	551	851	1975	776	640	376	416	0.089	23.72
✧ T-3500 HP	3500 Ah	4	3	438	602	931	2160	776	640	321	327	0.078	26.34
✧ T-4000 HP	4000 Ah	4	3	500	688	1064	2469	776	640	376	374	0.066	31.26
✧ T-4300 HP	4300 Ah	4	3	538	740	1144	2654	776	640	376	387	0.064	32.15
✧ T-4500 HP	4500 Ah	4	3	563	775	1197	2778	776	640	376	401	0.063	32.71
✧ T-5000 HP	5000 Ah	4	4	625	861	1330	3086	776	640	321	343	0.060	34.13
✧ T-5500 HP	5500 Ah	4	4	688	947	1463	3395	776	640	376	387	0.051	40.58
✧ T-5800 HP	5800 Ah	4	4	725	998	1543	3580	776	640	376	401	0.050	41.45
✧ T-6000 HP	6000 Ah	4	4	750	1033	1596	3704	776	640	376	416	0.051	41.97

Note:
1. * Depth up to cell terminal
2. Dimensions Specified are without bottom mounting arrangements & front covers
3. Dimensions given in the General arrangement drawing will supersede the dimensions mentioned in the catalogue

- Nominal Capacity is at a discharge rate of 10 hours to an end cell voltage of 1.80 V at 25°C
- ✧ Indicates parallel models. Dimensions and weights given are for basic module only.
- Dimensions given are as per horizontal stacking arrangement. The battery modules can be stacked to different combinations of height and length depending on space availability, specific configuration and floor loading requirement
- Other special design and configurations of battery systems for specific application may be provided on request.
- In accordance with its policy of continuous improvement the company reserves the right to change specifications and designs without notice. Illustrations, data, dimensions and weights given in this brochure are for guidance only and cannot be held binding on the company.

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