



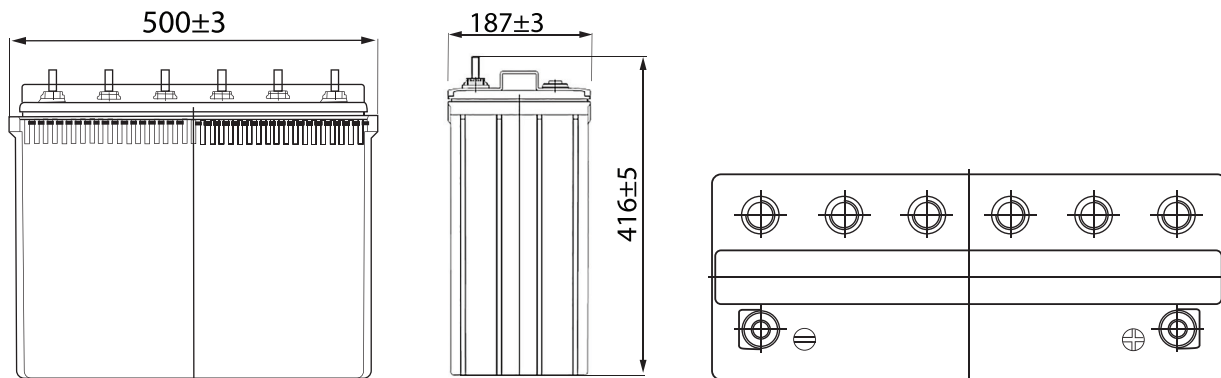
CHADHA POWER



INVATUBULAR

TECHNICAL DATA SHEET FOR
115 AH, 150 AH & 200 AH - 12V TALL TUBULAR BATTERIES

BATTERY OUTLINE & DIMENSIONS



FEATURES

- Ironclad® Tubular Technology
- Electrolyte Level Indicator
- High Acid Volume Per Ampere Hour
- Deep Cycle Design
- Resistance to abuse
- Tower type design
- Conforms to IS 13369 - 1992

ADVANTAGES

Very long life • User friendly • Acid Volume per Ampere Hour is 30% more than that of ordinary tubular batteries. It acts as a coolant and also ensures very low maintenance • Suited for use in areas of frequent power cuts (800 to 1000 cycles of deep discharge as against 300/400 cycles of other batteries) • Can withstand overcharge better • Occupies less floor space, totally new look • Less pollution, environment friendly • Ensures consistent quality.

SPECIFICATION CHART

Battery Type	Nominal Voltage (V)	Rated Capacity at 27°C (Ah) C ₂₀ up to 1.75 Vpc	Dimensions (in mm)			Weight (Kg)/±5%		Volume of Electrolyte (1.220 Sp. Gr.) (Litres per cell)	Initial Charge Minimum Ah Input (Ah)	Initial Charge at Constant Current (A)		Constant Potential Limiting Current (Amps)	Trickle Charge (Current in mA)	
			Overall Height ±/5	'L' ±/3	'W' ±/3	Dry	Filled			Start (up to 2.36 vpc)	Finish (up to 2.75 vpc)		Min	Max
IT 400	12	115	416	500	187	29.00	57.00	3.80	450	12.0	6.0	25	100	400
IT 500	12	150	416	500	187	33.00	59.00	3.50	540	14.4	7.2	30	120	480
IT 750	12	200	416	500	187	42.00	66.00	3.30	810	21.6	10.8	45	180	720

*The height mentioned is upto terminal top.

INITIAL CHARGING INSTRUCTIONS

1. Filling in Specific Gravity	1.220 +/- 0.005 at 27°C	<p>However in both cases, minimum Ah input to be given. Under no circumstances, battery temperature should exceed 50°C. In case the temperature exceeds 50°C, adequate rest to be given till the electrolyte temperature comes to ambient temperature and charging to be continued.</p>
2. Rest Period	12 hrs.	
3. Minimum Ah input	450Ah for IT400, 540Ah for IT500 and 810Ah for IT750	
4. In order to reduce the charging time, the following routine may be adopted. For IT400, the initial charging current may be 12A upto 2.36 vpc followed by 6A upto 2.75 vpc. For IT500, the initial charging current may be 14.4A upto 2.36 vpc followed by 7.2A upto 2.75 vpc. For IT750, the initial charging current may be 21.6A upto 2.36 vpc followed by 10.8A upto 2.75 vpc.		
5. Conditions of fully charged	<p>a) 3 consecutive hourly readings of specific gravity and voltage become constant</p> <p>b) Top of charge voltage will be around 16.2V - 16.5V</p> <p>c) All cells should gas freely</p> <p>d) Minimum Ah has been given</p>	
6. Specific Gravity at fully charged condition	1.250 +/- 0.005 at 27°C	

NORMAL RECHARGING INSTRUCTIONS

Recharging through Inverter at constant potential mode of 14.4V with limited current as specified. After battery potential reaches 14.4V, the battery should continue in trickle charge mode at constant potential of 13.5V.

DISCHARGE DATA AMPS AT 27° C

ECV	IT 400										
	1H	2H	3H	4H	5H	6H	7H	8H	9H	10H	20H
1.70	47.0	31.0	23.6	19.0	16.4	14.7	13.4	12.0	11.0	10.2	5.8
1.75	45.6	30.4	23.1	18.8	16.1	14.5	13.2	11.8	10.9	10.0	5.7
1.80	39.7	27.8	21.5	17.9	15.4	13.9	12.6	11.4	10.5	9.5	5.4
1.85	32.1	23.8	19.2	16.4	14.2	12.6	11.3	10.6	9.8	9.1	5.1

ECV	IT 500										
	1H	2H	3H	4H	5H	6H	7H	8H	9H	10H	20H
1.70	56.4	37.2	30.4	22.8	19.7	17.7	16.0	14.4	13.2	12.2	7.6
1.75	54.7	36.5	27.8	22.5	19.3	17.4	15.9	14.2	13.1	12.0	7.5
1.80	47.6	33.4	25.8	21.5	18.5	16.7	15.1	13.7	12.6	11.4	7.1
1.85	38.5	30.5	23.0	19.7	17.0	15.1	13.6	12.7	11.8	10.9	6.8

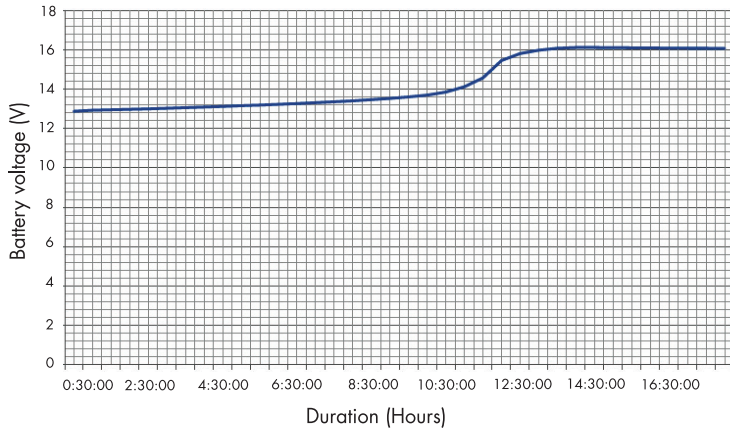
ECV	IT 750										
	1H	2H	3H	4H	5H	6H	7H	8H	9H	10H	20H
1.70	84.6	55.8	42.5	34.2	29.5	26.5	24.1	21.5	19.8	18.4	10.2
1.75	82.1	54.7	41.7	33.8	29.0	26.1	23.8	21.3	19.7	18.0	10.0
1.80	71.4	50.0	38.7	32.2	27.7	25.1	22.7	20.5	19.0	17.1	9.5
1.85	57.8	42.8	34.5	29.5	25.5	22.6	20.4	19.0	17.7	16.4	9.1

PRODUCT DETAILS

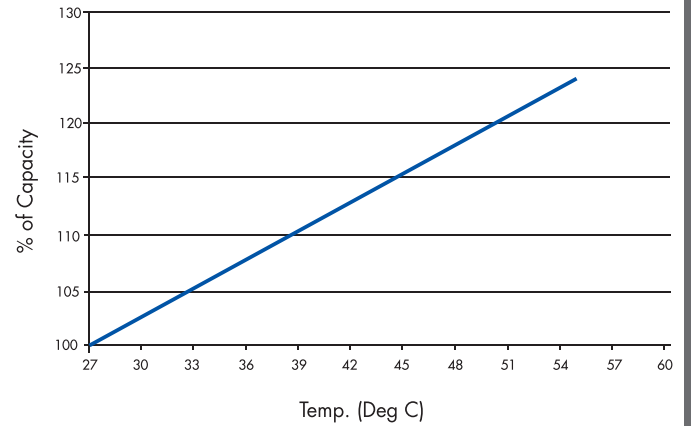
Ampere Hour Efficiency	> 90%
Watt Hour Efficiency	> 75%
Operating Temperature Range	- 5° C to 45° C
Self Discharge/Month at 27° C	Self discharge rate of the battery when kept in open circuit condition for 28 days would be <10% of its initial capacity.
Recommended Storage Life of Battery (Dry Shelf Life)	12 Months
Type of Plates	Positive Plates: Tubular Material: Lead - Antimony Alloy Negative Plates: Flat Pasted Material: Lead - Antimony Alloy
Separators	Micro Porous Polyethelyene (PE)
Type of Vent and Filling Plugs	Micro Porous Ceramic vent plug
Material of Container and Lid	PPCP
Type of Sealing	Heat Sealing
Terminal	Take off type

CHARACTERISTIC CURVES

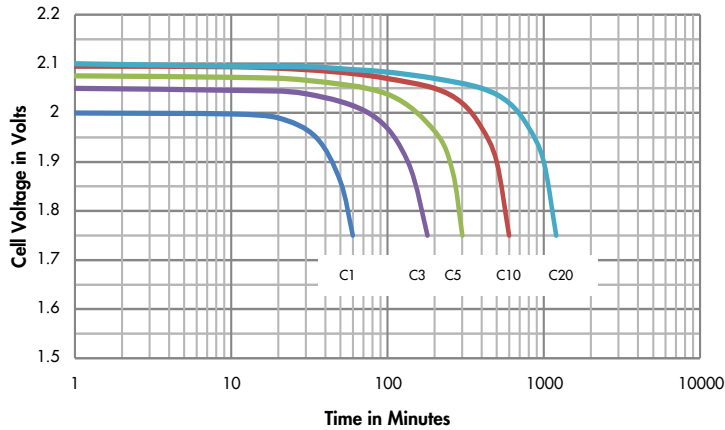
CHARGE CHARACTERISTIC GRAPH



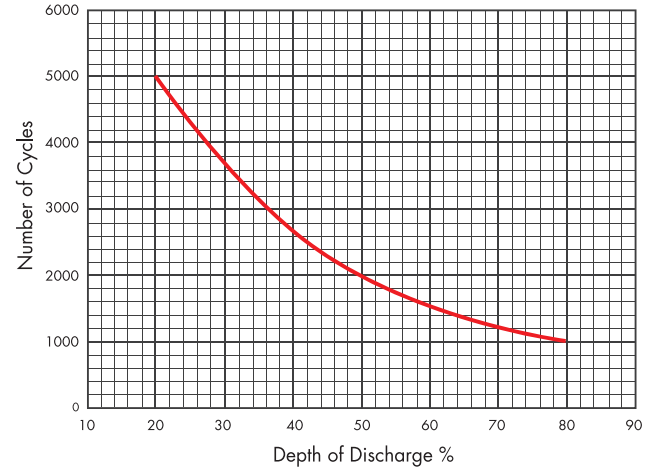
TEMPERATURE VS CAPACITY



PERFORMANCE CURVES AT DIFFERENT RATES OF DISCHARGE



CYCLE LIFE VS DOD FOR 12V



Technical specifications are subject to change without prior notice.

Battery image shown is indicative and may vary from the actual.



CHADHA POWER