

STATIONARY CATALOGUE 2020 - 2021

Batteries for professional



TUDOR

Baterias

HISTORY

Tudor Industries Ltd. was founded in Brazil in 1993 by a group of highly experienced Brazilian entrepreneurs with expertise of more than 40 years in the battery business. Production facilities are strategically located to supply Brazilian and International markets with agility and efficiency. One facility is located in Governador Valadares in the state of Minas Gerais – Tudor MG – which supplies north, northeast and northwest regions of Brazil. The other plant is located in Bauru, in the state of Sao Paulo – Tudor SP – supplying the markets of south, southeast, southwest regions as well as exports to international markets.

CATE. 07.2020



Bauru Unit - SP - Brazil



Governador Valadares Unit - MG - Brazil

ENVIRONMENT

Tudor Industries SP and MG de Baterias Ltda. and its network of wholesale distributors comply with CONAMA resolution 401/08, which provides guidance on the proper treatment in the handling, storage, collection, transportation and recycling of battery scraps. Tudor is part of IBER (Brazilian Institute of Recyclable Energy) and is duly certified by the competent national bodies, which highlights its commitment to the environment.

MISSION

"To be recognized for the quality of our products and services, together with our human capital and suppliers, for respect for the environment and our consumers".

PRINCIPLES OF QUALITY

- Promote continuous improvement in quality management through customer, regulatory and statutory requirements.
- Form and develop partnerships with customers and suppliers, encouraging the improvement of Tudor quality management and the innovation of products and services

CERTIFICATIONS

We strive for excellence in the manufacture and marketing of our products with high technology and quality standards. Both units have a quality management system certified according to ISO 9001 by Bureau Veritas Certification, a certifying body with national recognition by INMETRO and internationally by UKAS in the United Kingdom. Indústrias Tudor - SP de Baterias also has the certification of the environmental management system according to ISO 14001, a process that includes the development, manufacture, delivery of its products, as well as the reverse logistics and system according to IATF 16949, a requirement for the supply of batteries for the automakers market. Our product lines are approved according to ordinances 301/2011 and 299/2012 INMETRO.



TECHNOLOGY: V-SRPA

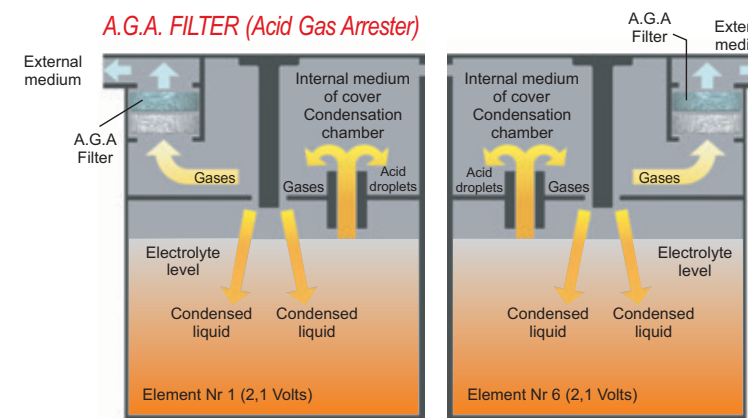
The Tudor Stationary Battery was designed with the objective of providing excellent electrical performance combined with high reliability and robustness. Its internal components have been designed to overcome the most severe conditions of use. Using Ventilated technology with Acid Particulate Retention System (V-SRPA) the Tudor Stationary battery with A.G.A. filter (Acid Gas Arrester). This measure allows to differentiate this technology from the VRLA (Valve Regulated Lead Acid) and Ventilated categories, allowing the user to specify which technology meets their demands.

APPLICATIONS

Telephone exchange, base radio stations, street offices, hospitals, micro BTS, mini BTS, remote access networks, fiber optic networks, GSM networks, wireless networks, microwave repeaters, sheters IVR's, signaling, UPS/UPS, alarms and electronic surveillance, emergency lighting, power substations and telecommunications.

A.G.A. FILTER

Composed of two layers of filters with different porosities and functions, the A.G.A. filter it retains the acidic particles that are carried away by the oxygen and hydrogen molecules emitted in the electrolysis process and simultaneously inhibit the passage of sparks from the external to the internal environment of the battery that could cause the battery to explode. For this reason, the A.G.A. filter allows the use of the Tudor Stationary battery in the same environment as people and electronic equipment. Perform preventive maintenance of the system and monitor the battery's electrolyte level to avoid any damage.



HIGH TEMPERATURES, THERMAL AVALANCHE AND RIPPLE

Learn more about the benefits and limitations of Tudor Stationary V-SRPA batteries with A.G.A.

LEAD LEAD-CALCIUM WITH HIGH TIN CONTENT

Manufactured with high standard lead and Lead-Calcium alloy with high tin content, providing low electrical resistance, minimum water consumption, greater resistance to corrosion at high temperatures and high resistance to cycling. This alloy allows excellent performance in a wide range of temperature variation (-20 °C to +70 °C) and in different operating regimes, such as cycling and fluctuation. This alloy also allows the equalization voltage to be reduced in comparison to the calcium-calcium alloy with low tin content, which results in a minimum water consumption, maximizing the useful life of Tudor Stationary batteries.

FREE ELECTROLYTE

The free electrolyte, that is, in a liquid state, has the characteristic of dissipating the increase in temperature in the external environment or by the oscillations of the electrical network (ripple). The free electrolyte technology allows the battery to operate in a high temperature environment or in places where the power quality is low and subject to constant variations. However, it prevents use in positions other than the usual (poles up).

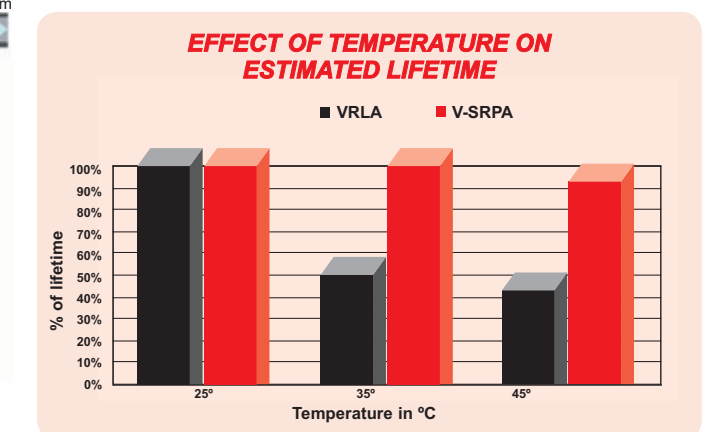
GRIDS AND PLATES

Grids: They are produced with laminated / expanded technology, being prepared in an automated and continuous system, where the laminated lead coils are expanded or, depending on the model and application, with a cast grid. Manufactured with high standard lead and Lead-Calcium alloy with high tin content, providing low electrical resistance, minimum water consumption,

greater resistance to corrosion at high temperatures and high resistance to cycling. Plates: Produced with high-density active material and the latest generation additives, which facilitate chemical reactions by optimizing the energy supply.

HIGH TEMPERATURES

VRLA batteries, which use oxygen recombination technology, are extremely sensitive to temperature when compared to V-SRPA batteries and therefore need more attention in temperature management. The VRLA technology is reduced by up to 50% of the service life for each 10 °C above 25 °C, against 2% of the V-SRPA technology. (see comparative chart).



THERMAL AVALANCHE

One of the main consequences of operating at high temperatures is the phenomenon called "Thermal Avalanche". Thermal Avalanche is the condition in which the heat generation exceeds the capacity of the battery and the installation environment to dissipate it. If this condition persists for a long period, the battery will suffer an accelerated loss of water, increasing the charging current and deformation of the container. The V-SRPA technology of the Tudor Stationary battery with A.G.A. filter, allows greater heat dissipation through the free electrolyte (in liquid state) and the retention system of the acid particles entrained during electrolysis (Condensation Chamber and A.G.A. filter). In VRLA batteries, the reduced volume of electrolyte and the oxygen recombination process accelerate the generation of heat. If operated under abnormal conditions (high ambient temperature, overload, etc.), VRLA batteries raise the temperature to levels where the battery is unable to dissipate it. In these conditions, the temperature of the VRLA battery will increase to the point of deforming the containers and breaking them, rendering the battery unusable.

RIPPLE

The variation of current and voltage is called a ripple. Depending on the frequency of the ripple, the internal temperature of the battery will increase and will need to be dissipated, otherwise the battery will go into "Thermal Avalanche". In this case, again, the free electrolyte technology has an advantage, as it is capable of dissipating the temperature rise caused by the ripple, unlike the absorbed or immobilized electrolyte technologies in general. In addition to having an optional system for channeling the gases generated in these conditions. Note: Monitor the loss of electrolyte and replace the batteries when necessary. See item 18 on page 4.



SOLUTIONS x ADVERSITIES

Analyze the operational conditions where the batteries will be installed and identify the set of technical solutions that ensure your systems performs reliably. The solutions indicated are no limited to

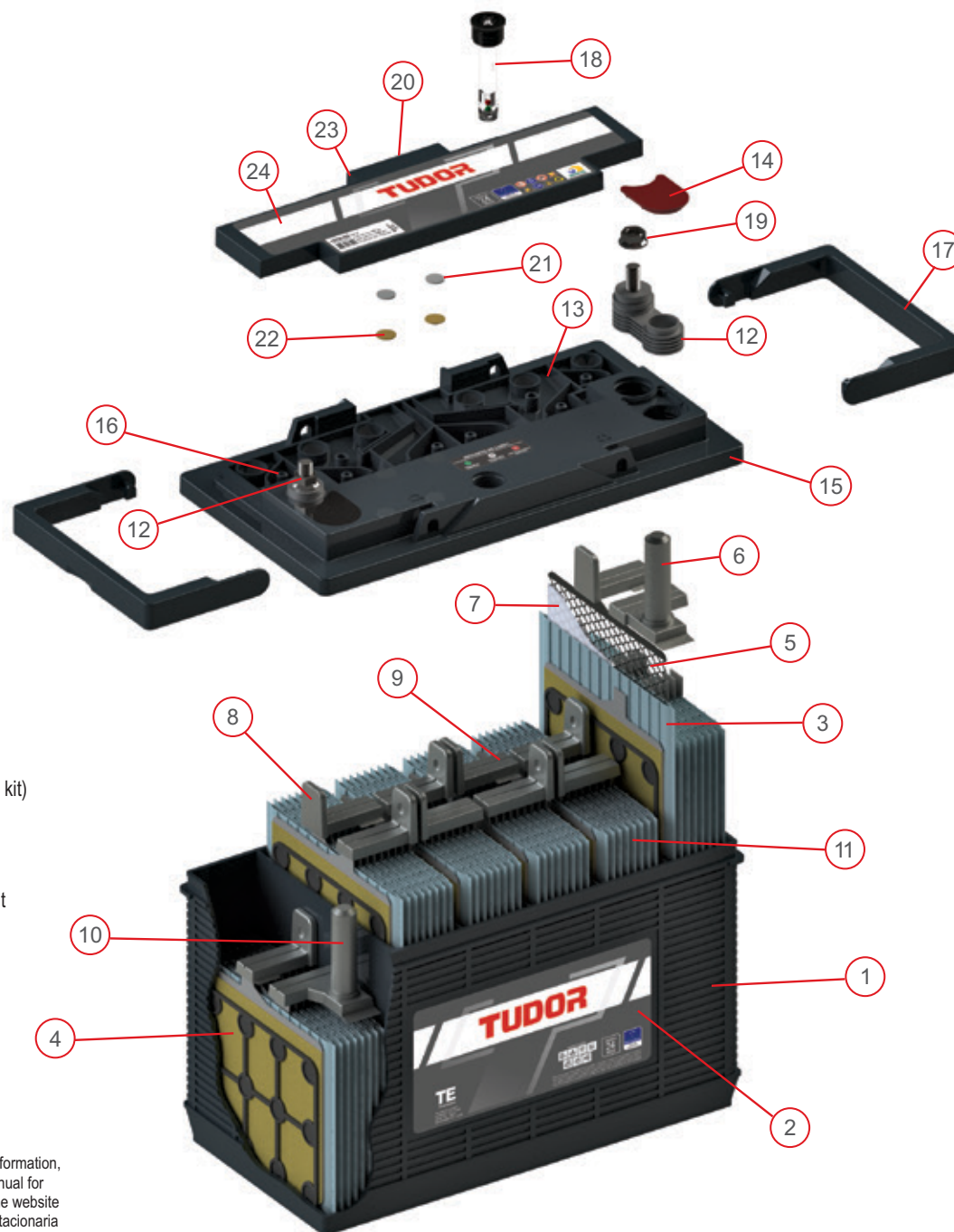
the adversities assigned. The technical set of solutions is what allows good operation and, consequently, optimized performance of the set.

If there are operating conditions other than those listed, contact Tudor for guidance

	HIGH TEMPERATURE	CONSTANT CYCLING	COMPATIBILITY WITH ELECTRONIC EQUIPMENT	SECURE CONNECTIONS	EXTERNAL SHORT CIRCUIT	INTERNAL SHORT CIRCUIT	FLUCTUATION	RIPPLE FREQUENCY	ACID GASES	ELECTROLYTE LEAKAGE	VIBRATION	LONG SERVICE LIFE
CA-CA ALLOY HIGH TIN CONTENT	•	•					•		•			•
FREE ELECTROLYTE	•							•				
A.G.A. FILTER	•		•						•	•		
GRID FILLETS WITH ALTERNATING WIRES	•	•									•	•
ENVELOPED SEPARATOR	•	•				•	•				•	•
CONDENSATION CHAMBER	•	•	•						•	•		•
POLES WITH EXTERNAL OR PROTECTED THREAD			•	•	•						•	
SCREWS, NUTS AND WASHERS IN STAINLESS STEEL	•	•	•	•					•			
SEALING RESIN OR RING O-RING	•	•	•	•					•	•		•

EXPANDED VIEW

1. Monoblock/box polypropylene
2. Label
3. Polyethylene separator
4. Positive active material
5. Grade
6. Positive reinforced post
7. Negative active material
8. Reinforced connector
9. Reinforced strap
10. Reinforced post negative
11. Element 2 Volts (nominal)
12. Terminal type T/M R.E. RW3/8"
13. Condensation chamber
14. Cavity to epoxy finish
15. Polypropylene cover (sealed in monoblock)
16. Back orifice condensate liquid
17. Strap
18. Densimeter "Magic eye"
19. Hex nut RW3/8" - inox
20. Arrester (allows gas installation kit)
21. A.G.A. filter layer 1
22. A.G.A. filter layer 2
23. Overcap - polypropylene without stoppers or valves (the sealed cap)
24. Label



For complete technical information, consult our Technical Manual for Stationary Batteries on the website tudor.com.br/produtos/estacionaria or access through QRCode.

ELECTRICAL AND DIMENSIONAL FEATURES



12TE25

Voltage (V)	Weight (kg)	
12	10,00	
C10 (Ah)	C20 (Ah)	C100 (Ah)
24	25	27
Configuration	Base	Terminals
D2	B0	X
Dimensions L x W x H (mm)		
196 x 128 x 187		



12TE26

Voltage (V)	Weight (kg)	
12	9,80	
C10 (Ah)	C20 (Ah)	C100 (Ah)
25	26	28
Configuration	Base	Terminals
D1	B3	X
Dimensions L x W x H (mm)		
205 x 175 x 175		



12TE36

Voltage (V)	Weight (kg)	
12	11,00	
C10 (Ah)	C20 (Ah)	C100 (Ah)
34	36	40
Configuration	Base	Terminals
D1	B3	X
Dimensions L x W x H (mm)		
205 x 175 x 175		



12TE45

Voltage (V)	Weight (kg)	
12	11,60	
C10 (Ah)	C20 (Ah)	C100 (Ah)
40,5	45	50
Configuration	Base	Terminals
D1	B3	X
Dimensions L x W x H (mm)		
205 x 175 x 175		



12TE60

Voltage (V)	Weight (kg)	
12	14,00	
C10 (Ah)	C20 (Ah)	C100 (Ah)
54	60	65
Configuration	Base	Terminals
D1	B3	X
Dimensions L x W x H (mm)		
242 x 175 x 175		



12TE65

Voltage (V)	Weight (kg)	
12	16,80	
C10 (Ah)	C20 (Ah)	C100 (Ah)
60	65	68
Configuration	Base	Terminals
D1	B1	X
Dimensions L x W x H (mm)		
287 x 174 x 175		



12TE86

Voltage (V)	Weight (kg)	
12	24,50	
C10 (Ah)	C20 (Ah)	C100 (Ah)
82	86	92
Configuration	Base	Terminals
D2	B0	T/M r.e
Dimensions L x W x H (mm)		
330 x 174 x 242		



12TE105

Voltage (V)	Weight (kg)	
12	26,70	
C10 (Ah)	C20 (Ah)	C100 (Ah)
95	105	115
Configuration	Base	Terminals
D2	B0	T/M r.e
Dimensions L x W x H (mm)		
330 x 174 x 242		



12TE150

Voltage (V)	Weight (kg)	
12	42,90	
C10 (Ah)	C20 (Ah)	C100 (Ah)
142	150	160
Configuration	Base	Terminals
D3	B0	T/M r.e
Dimensions L x W x H (mm)		
508 x 215 x 250		



12TE170

Voltage (V)	Weight (kg)	
12	44,90	
C10 (Ah)	C20 (Ah)	C100 (Ah)
160	170	180
Configuration	Base	Terminals
D3	B0	T/M r.e
Dimensions L x W x H (mm)		
508 x 215 x 250		



12TE180

Voltage (V)	Weight (kg)	
12	55,50	
C10 (Ah)	C20 (Ah)	C100 (Ah)
165	180	200
Configuration	Base	Terminals
D3	B0	T/M r.e
Dimensions L x W x H (mm)		
515 x 275 x 245		

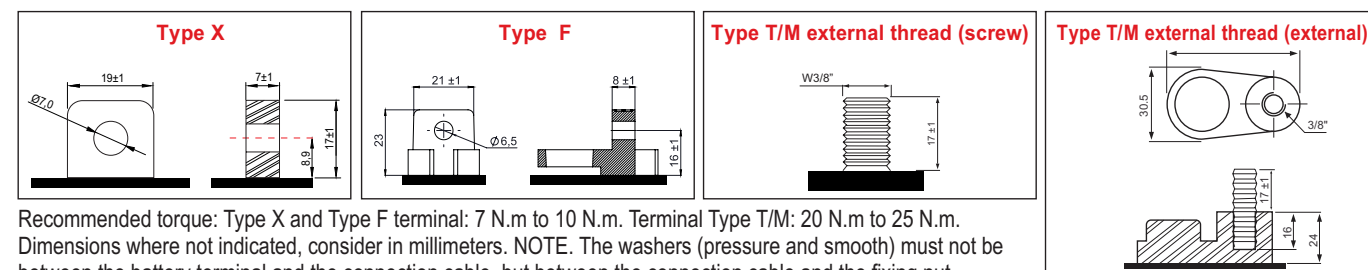


12TE220

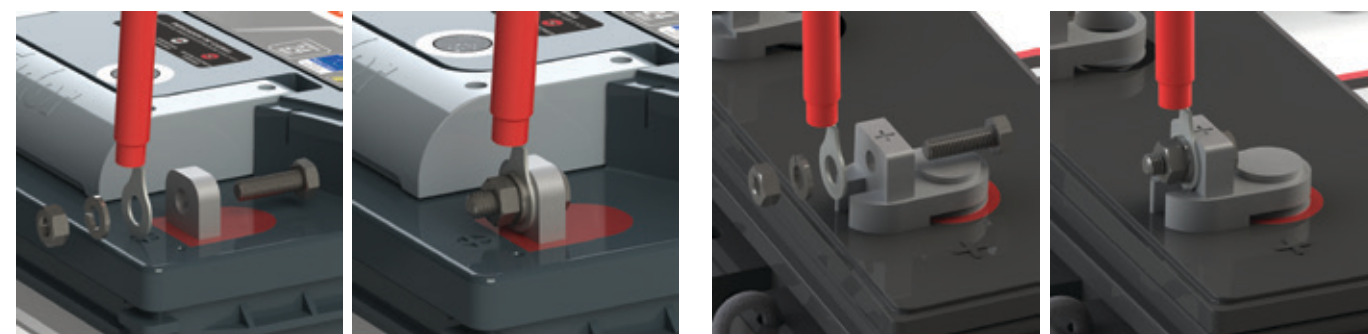
Voltage (V)	Weight (kg)	
12	60,90	
C10 (Ah)	C20 (Ah)	C100 (Ah)
200	220	230
Configuration	Base	Terminals
D3	B0	T/M r.e
Dimensions L x W x H (mm)		
515 x 275 x 245		

For all models: Voltage floating 13.40 V to 13.80 V. Load voltage 14.40 V to 14.80 V. Equalization voltage 15.20 V to 15.80 V.

TERMINALS

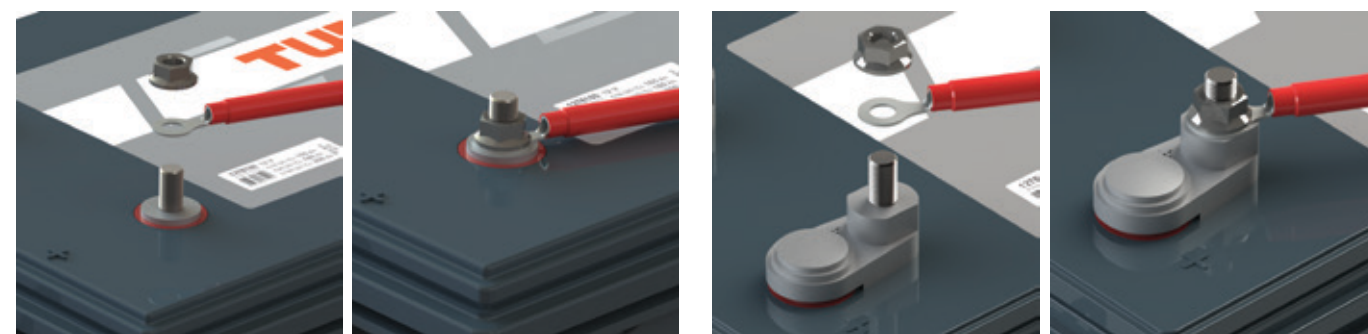


Recommended torque: Type X and Type F terminal: 7 N.m to 10 N.m. Terminal Type T/M: 20 N.m to 25 N.m. Dimensions where not indicated, consider in millimeters. NOTE: The washers (pressure and smooth) must not be between the battery terminal and the connection cable, but between the connection cable and the fixing nut.



Type X

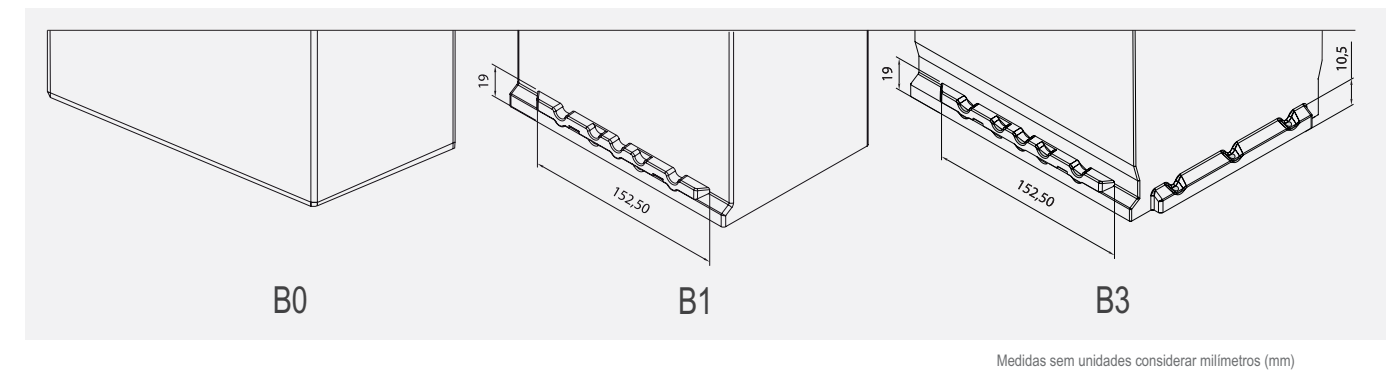
Type F



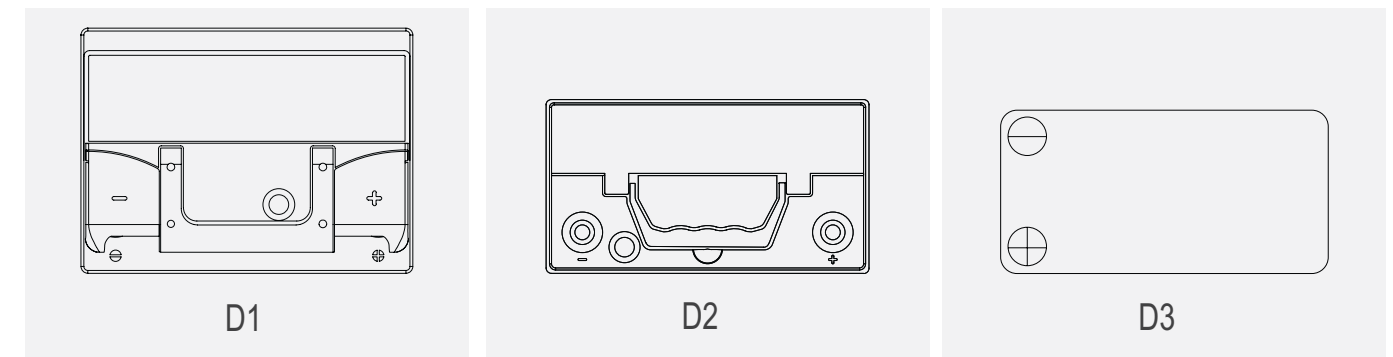
Type T/M external thread (screw)

Type T/M external thread (external)

BASE



CONFIGURATION



DANGER YOU SHOULD TAKE PRECAUTIONS WITH BATTERY AND THE ENVIRONMENT

- Explosive gases**
Protect your eyes and face when handling the battery. Do not charge or use electrical cords without prior knowledge.
- Avoid**
Cigarettes, flames or sparks can cause battery explosion.
- Contains sulfuric acid**
Causes burns. Avoid contact with skin, eyes and clothing.
- Installing the equipment**
After fixing the battery in support, first connect the positive cable and then the positive pole, the negative. To pull it off, simply performing the reverse process, ie to disconnect the negative lead and soon after the positive. Thus, it avoids the sparking these operations.
- Antidotes - First Aid**
Skin contact: Carefully remove the clothing and footwear contaminated and wash the affected area with running plenty water for 15 minutes.
Eye contact: Immediately flush eyes with running water for 15 minutes, lifting eyelids to allow total removal of product. After these precautions search for an ophthalmologist.
Ingestion: Never give anything by mouth to an unconscious person or convulsive state. The conscious injured can drink water, always slowly to not induce vomiting. Do not induce vomiting. Search for a doctor informing the product features.
- No discard the batteries in the trash**
The improper disposal can pollute water, soil and harm the health. As CONAMA resolution 401/08, can the even be framed in the Environmental Crimes Law. Basic composition: lead, plastic and dilute sulfuric acid.
- The battery is a recyclable**
Dispose of the same in a Service Desk. OBS.: See addresses of main stations on Customer TUDOR the Warranty Certificate.

KEEP AWAY FROM CHILDREN REACH.

The data and information contained in this catalog do not constitute a contractual commitment, and can be modified without prior notice, subject to normal manufacturing tolerances. Illustrative images.

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TUDOR
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