

PowerTec[®]

Red Label

High Power & Long Life

A Family of **High Performance**
DIN & JIS Car, Truck & Motorcycle
Batteries

Maintenance-Free Car & Truck Batteries



AGM & Standard Motorcycle Batteries



www.kyotojap.com

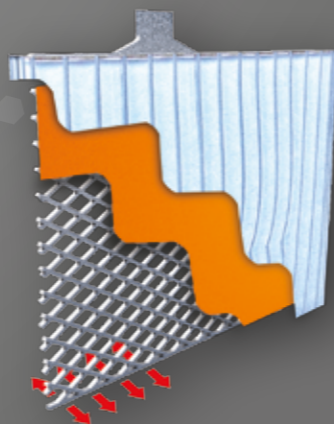


DIN Car Series New Technology

PowerTec Red Label DIN Car Series batteries are designed to meet the most stringent performance requirements of the type of vehicles in use. They have been developed to ensure high performance in any condition of use. The Energy range in the charged version is made with expanded grid Pb/Ca technology, while the dry charge version is made with Pb/Sb alloy. The latter minimises the effect of hydrolysis and consequently the consumption of water. At the same time, it limits the accumulator's self-discharge phenomenon.



Due to this series of factors the battery fully deserves to be called MAINTENANCE FREE. The lead used in the construction of the grids has a degree of purity of 99.99% and comes directly from mines, which gives the battery a very high resistance to corrosion. The thickness of the positive plates is greater than standard technology. This choice was made to ensure a greater reserve of energy and longer cycles, with the aim of satisfying the ever more demanding request of onboard electronics. The HI-PERFORMANCE polyethylene envelope separator has a high mechanical strength which is a guarantee against internal short circuits. The cover, with its centralised degasification, has an explosion-proof pad inserted in it which minimises the possibility of explosions, caused by accidental emission of external sparks and flames. There is also a higher safety level in the smooth surface plugs, to limit the possibility of opening by non-expert personnel.



JIS Asian Series New Technology

PowerTec Red Label JIS Asian Car Series batteries are sized for use on Asian vehicles. Maintenance is zero thanks to the use of grids obtained through the expansion of foils in metal alloys of Lead/Calcium/Tin, which make water consumption basically negligible and ensure greater resistance to corrosion of the positive electrodes thanks to the extremely reduced grid porosity. Low auto-discharge in normal conditions of storage in cool, dry places (20° C RH 50%). The series is also fitted with an optical hydrometer device for controlling the level of the electrolyte inside the battery. The lid has a handle fitted into it with an ergonomic design, to ensure easy transport and installation into areas where space is limited. Greater safety is also guaranteed by the sealed lid. The presence of the antiexplosion pad in the lid prevents any external sparks or flames from penetrating inside the battery and causing explosion. The series has been developed to meet the needs of Asian vehicles, in respect of dimensions, polarity and manufacturer characteristics.

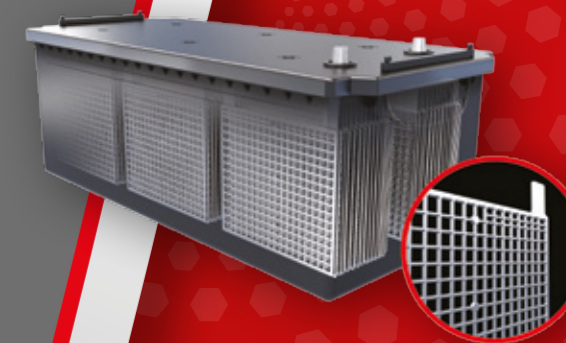


PowerTec Red Label Expanded Grid-Technology for Cars

The wet charged series is made with flat Pb/Ca/St/Al plates of increased thickness to better withstand the effect of cycles (duration) over time, in line with the new energy needs of cars. This is possible thanks to the innovative design of the grid, which allows an excellent distribution of the current in the discharging and charging phases. The irregular diamond-shaped grid, which is narrower at the top of the grid and wider at the bottom, facilitates the chemical/electric reaction in the discharging and re-charging phases, thus enhancing starting performance, without sacrificing durability (life-cycle), thanks to the greater thickness of the plates. This is possible due to the widened cross points of at the geometric intersections. The alloy is manufactured using primary lead (99.99%) with calcium/aluminium and tin, so it is possible to support the concept of ZERO MAINTENANCE with very low self-discharge (temp. 25/30°C), in addition excellent resistance to corrosion.

PowerTec Red Label Cast-Grid Technology for Trucks

The recent technological developments related to the manufacturing of the elements used for truck starter batteries, in specific grids, means that many manufacturers have chosen the expanded plates or punching. In the commercial vehicle sector the massive presence of electronics, electrical accessories, hydraulic and satellite systems, etc. means batteries do not start properly but, above all, that they must ensure a high energy supply as support even when the engine is switched off, particularly with E5-E6 engines. Kyoto Japan has always used cast grid technology, which is more robust and suitable to perform this dual task (starter and prolonged discharge). New grids (pos. and neg.) were made in view of the new requirements. With a new design studied to allow optimal performance of repeated discharges and recharges, as well as remarkable starting performance. More attention was focused on the thickness of the plate, in order to increase the nominal capacity (AH) of the battery. As is easy to understand, when analysing heavy vehicles used for transportation, agriculture, construction etc., we find ourselves faced with the usual problems of vibrations and bumps, present due to the uneven ground they have to cover. Specifically, the cast grid offers more robustness and reliability, without prejudicing devices for blocking elements, inside each cell of the box, which stop the fall of the active material on the plate. The alloy is manufactured using primary lead (99.99%) whether they are calcium (Ca) plates or those with a low content of antimony (Sb), which supports the ZERO MAINTENANCE concept and very low self-discharge (temp. 25/30°C), in addition to excellent corrosion resistance.

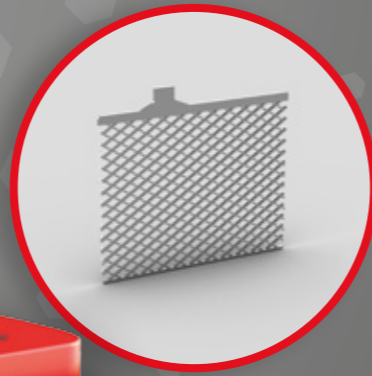


Family of Automotive Batteries

DIN Car Series

Wet Charged Version

Expanded Grid
Technology for Cars



- Wet charged and ready to use from 50 to 100 Ah
- Expanded alloy grids technology with Pb\Ca
- Thicker plates
- Hi-performance polyethylene envelope separator
- Hermetic DUPLEX lid with centralised gas recovery
- 180 degree rotation without leakage

- Higher starting capacity
- Explosion-proof pad
- Very low self-discharge
- Vibration resistant (V2)
- Maintenance free



LOW
MAINTENANCE



ANTI
EXPLOSION



ENVELOPE
SEPARATOR



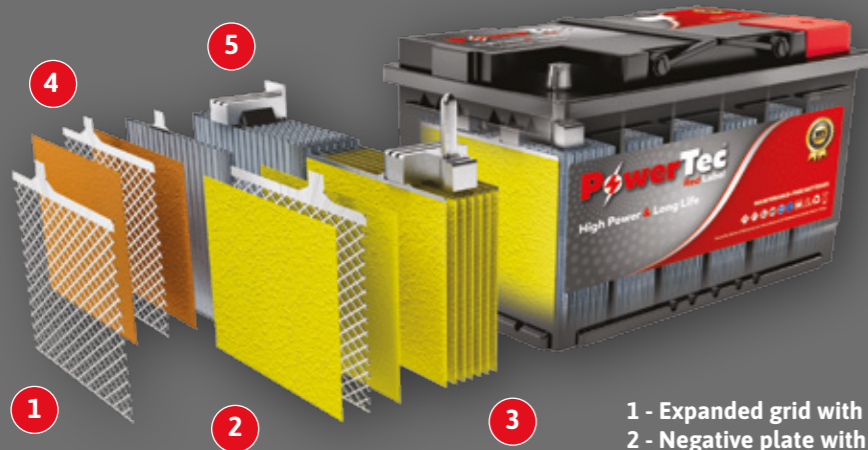
ANTI
VIBRATION



LOW
SELF-DISCHARGE



DOUBLE
COVER



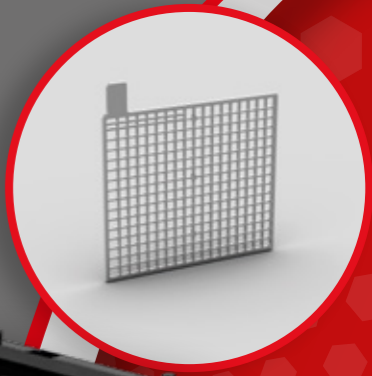
- 1 - Expanded grid with Pb\Ca alloy
- 2 - Negative plate with spongy Pb
- 3 - Negative set
- 4 - Positive plate with bi-oxide
- 5 - Enveloped positive set



Heavy Duty Truck Series

Wet Charged Version

Cast-Grid Technology
for Trucks



- Wet charged and ready to use from 105 to 230 Ah
- Casted grids technology with Pb\Sb
- New grid design
- Thicker plates

- Polyethylene envelope separator
- Vibration resistant (V2)
- Very low self-discharge
- Low maintenance



LOW
MAINTENANCE



ANTI
EXPLOSION



ENVELOPE
SEPARATOR



ANTI
VIBRATION



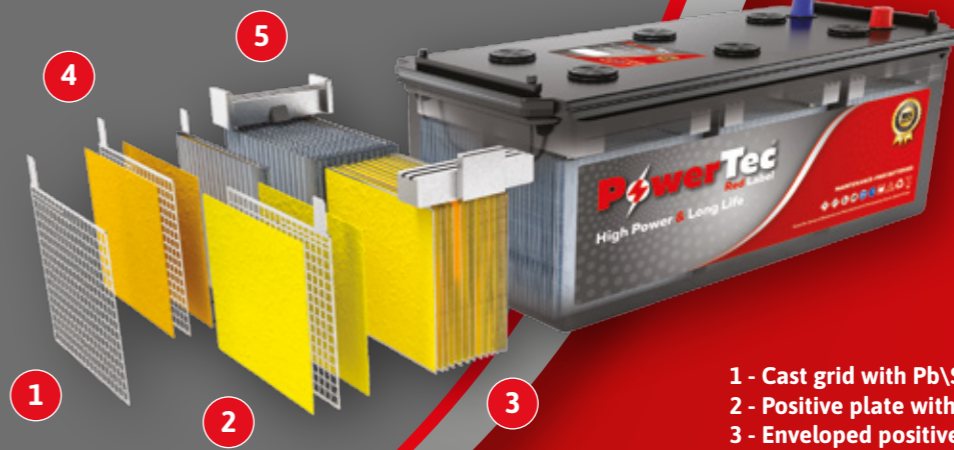
LOW
SELF-DISCHARGE



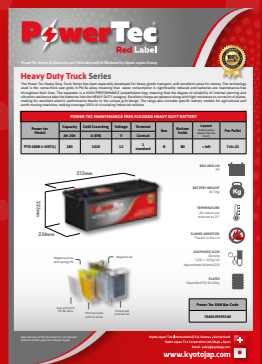
ENERGY ON
BOARD



DOUBLE
COVER



- 1 - Cast grid with Pb\Sb alloy
- 2 - Positive plate with bi-oxide
- 3 - Enveloped positive set
- 4 - Negative plate with spongy Pb
- 5 - Negative set





AGM Motrocycle Series

Power Tec Red Label Motorcycle AGM batteries are Ideal for motorcycles, scooters, ATVs, ride on mowers and personal watercraft, these permanently sealed batteries do not require topping up. Aside from periodic charging, they remain maintenance free for the life of the battery.

- Increased cranking power - up to 30% more CCA than conventional type batteries
- Superior resistance to vibration & corrosion
- Fully maintenance free once activated
- Premium AGM technology with no free acid
- Sealed & spill-proof design
- Selected models supplied filled & ready to fit



Motrocycle Series

Power Tec Red Label Motorcycle batteries are designed to meet the special demands of personal watercraft, snowmobiles and ATVs. Dependable power, reduced maintenance and longer life plus a unique power boosting design makes the range ideal for touring bikes and modified vehicles.

- High cranking power - constructed with special thin plate separators
- Low maintenance, water loss & self-discharge with easy access vent plug design
- Heavy-duty glass mat technology for high vibration resistance
- Heat sealed case to protect against seepage & corrosion



Motrocycle Terminal Types

TYPE	FRONT	SIDE	TOP
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

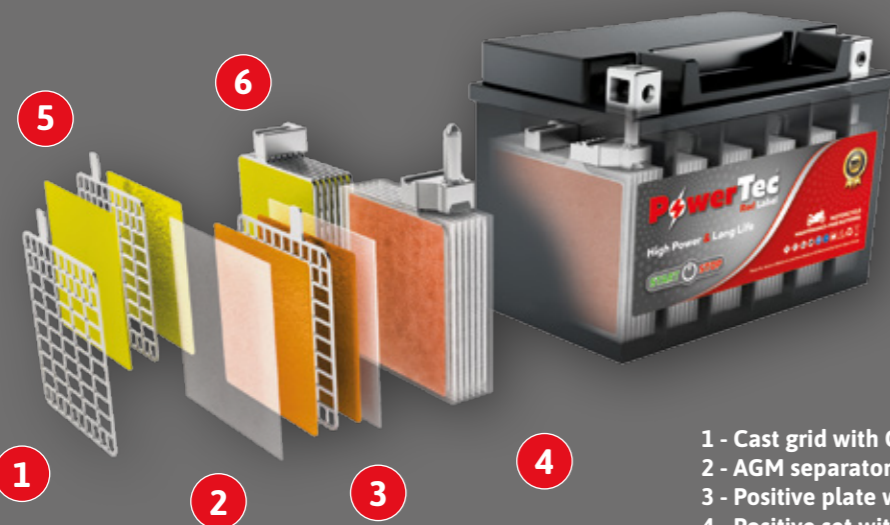
AGM Motorcycle Series

Dry Charged Version



- AGM dry charged (Separate acid pack included) from 3 to 24 Ah
- Casted alloy grids technology with Ca/Ca
- 180 degree rotation without leakage
- Hi-performance AGM separator
- VRLA valves on the caps.

- Higher starting capacity
- Very low self-discharge
- Vibration resistant
- Maintenance free
- Thicker plates



- 1 - Cast grid with Ca/Ca alloy
- 2 - AGM separator
- 3 - Positive plate with bi-oxide and separator
- 4 - Positive set with separator
- 5 - Negative plate with spongy Pb
- 6 - Negative set



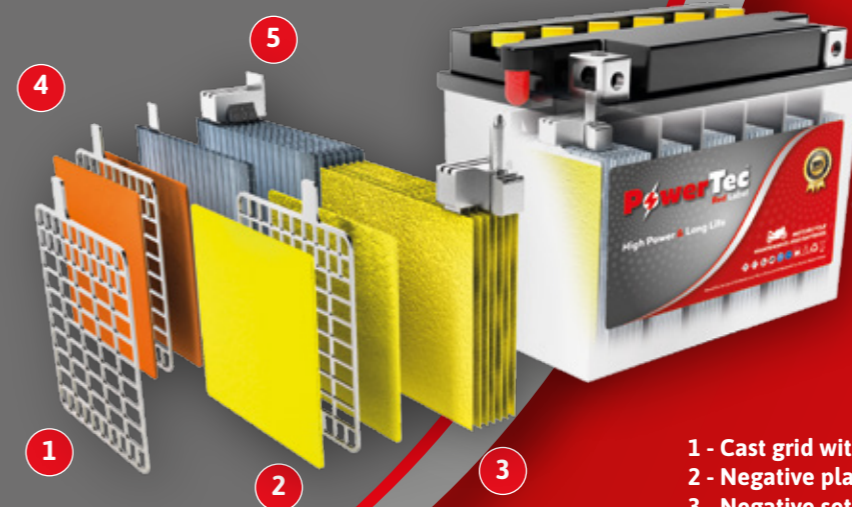
Motrocycle Series

Dry Charged Version



- Dry charged (Separate acid pack included) from 3 to 20 Ah
- Casted alloy grids technology with Pb/Sb
- Hi-performance polyethylene envelope separator
- Good starting capacity

- Low self-discharge
- Standard vibration resistant
- Standard maintenance



- 1 - Cast grid with Pb/Sb alloy
- 2 - Negative plate with spongy Pb
- 3 - Negative set
- 4 - Positive plate with bi-oxide
- 5 - Enveloped positive set



PowerTec Full Range of Maintenance-Free Cars and Trucks Batteries

Ah	DIN JIS	PowerTec Battery Code	Polarity (Viewed from Front) - +	Magic Eye	Capacity C20	C.C.A.	Tester C.C.A	Voltage	Classification
					Ah	(A/EN)	(A/EN)	Volts	

PowerTec Red Label DIN Car Series Car Batteries

Maintenance-Free, Wet-Charged, Sealed, Expanded alloy grids technology with Pb/Ca, with centralised degassing cover, ready to use.



50	DIN	PTR-050-0L1-CAR	+ on the Right	- +	Red Terminal Cover	50	330	330	12	EN50342
60	DIN	PTR-060-0L2-CAR	+ on the Right	- +	Red Terminal Cover	62	420	430	12	EN50342
72	DIN	PTR-072-L3B-CAR	+ on the Right	- +	Red Terminal Cover	74	530	550	12	EN50342
77	DIN	PTR-077-0L3-CAR	+ on the Right	- +	Red Terminal Cover	77	540	555	12	EN50342
80	DIN	PTR-080-0L3-CAR	+ on the Right	- +	Red Terminal Cover	80	550	560	12	EN50342
85	DIN	PTR-085-0L4-CAR	+ on the Right	- +	Red Terminal Cover	85	700	710	12	EN50342
100	DIN	PTR-100-0L5-CAR	+ on the Right	- +	Red Terminal Cover	100	750	760	12	EN50342

PowerTec Red Label Heavy Duty Series Truck Batteries

Top-UP & Maintenance-Free, Wet-Charged, Cast Grids Technology with Pb/Sb, Heavy Duty, ready to use.



105	DIN	PTR-105C-1-HDT	+ on the Right	- +	Heavy Duty	750	-	12	EN50342	EN50342
140	DIN	PTR-140A-1-HDT(L)	+ on the Left	+ -	Heavy Duty	750	-	12	EN50342	EN50342
	DIN	PTR-140A-2-HDT(L)	+ on the Left	+ -	Heavy Duty	960	-	12	EN50342	EN50342
	DIN	PTR-140D-3-HDT(L)	+ on the Left	+ -	Heavy Duty	1.020	-	12	EN50342	EN50342
	DIN	PTR-140M-4-HDT(L)	+ on the Left	+ -	Heavy Duty	1.020	-	12	EN50342	EN50342
160	DIN	PTR-160B-1-HDT(L)	+ on the Left	+ -	Heavy Duty	1.020	-	12	EN50342	EN50342
180	DIN	PTR-180B-1-HDT(L)	+ on the Left	+ -	Heavy Duty	1.020	-	12	EN50342	EN50342
	DIN	PTR-180B-2-HDT(L)	+ on the Left	+ -	Heavy Duty	1.040	-	12	EN50342	EN50342
200	DIN	PTR-200B-1-HDT(L)	+ on the Left	+ -	Heavy Duty	1.040	-	12	EN50342	EN50342
210	DIN	PTR-210C-1-HDT(L)	+ on the Left	+ -	Heavy Duty	1.250	-	12	EN50342	EN50342
230	DIN	PTR-230C-1-HDT(L)	+ on the Left	+ -	Heavy Duty	1.250	-	12	EN50342	EN50342

ETN	Battery Construction	Box	Hold Down	Weight	Quantity per Pallet	Dimensions mm			Powertec EAN Bar Codes
				Kgs		Length	Width	Height	

540024030	MF + Degassing Sealed Cover	L1	B13	11	20x4	80	207	175	190	7640249195179
550035051	MF + Degassing Sealed Cover	L2	B13	12	18x4	72	242	175	190	7640249195186
560112060	MF + Degassing Sealed Cover	L3	B13	15	16x4	64	278	175	175	7640249195193
563102064	MF + Degassing Sealed Cover	L4	B13	15,4	16x4	64	278	175	190	7640249195797
565101054	MF + Degassing Sealed Cover	L5	B13	15,8	16x4	64	278	175	190	7640249195209
570128064	MF + Degassing Sealed Cover	L6	B13	19,5	12x4	48	310	175	190	7640249195285
588027064	MF + Degassing Sealed Cover	L6	B13	20,3	12x4	48	354	175	190	7640249195292

590047075	Top-Up Removable Caps	98 Comp	B0	26,5	12x2	24	343	175	232	7640249195308
635047075	Top-Up Removable Caps	A	B0	33,6	8x3	24	513	190	223	7640249195315
635048096	Top-Up Removable Caps	A	B0	35,6	8x3	24	513	190	223	7640249195322
640027072	Top-Up Removable Caps	110D	B3	35,5	8x3	24	514	175	201	7640249195339
635109095	Top-Up Removable Caps	Mac 140	B0	37,6	7x3	21	509	210	209	7640249195346
643014090	Top-Up Removable Caps	B	B0	41,5	7x3	21	513	223	223	7640249195353
670029090	Top-Up Removable Caps	B	B0	41,5	7x3	21	513	223	223	7640249195360
680022110	Top-Up Removable Caps	B	B0	43	7x3	21	513	223	223	7640249195377
690102110	Top-Up Removable Caps	B	B0	43	7x3	21	513	223	223	7640249195384
700027105	Top-Up Removable Caps	C	B0	56,5	6x3	18	518	273	242	7640249195391
710014115	Top-Up Removable Caps	C	B0	56,5	6x3	18	518	273	242	7640249195407

PowerTec Full Range of Motorcycle Batteries

Ah	DIN JIS	PowerTec Battery Code	Polarity (Viewed from Front) - +	Magic Eye	Capacity C20	C.C.A.	Tester C.C.A	Voltage	Classification
					Ah	(A/EN)	(A/EN)	Volts	

PowerTec Red Label AGM Motorcycle Batteries

Maintenance-Free, Dry-Charged, Sealed, Casted alloy grids technology with Ca/Ca.



3	AGM	PTM-YTX4L-B5-AGM	+ on the Right	- +	AGM Dry Charged	3	50	-	12	-
4	AGM	PTM-YTX5L-B5-AGM	+ on the Right	- +	AGM Dry Charged	4	70	-	12	-
6	AGM	PTM-YTX7L-B5-AGM	+ on the Right	- +	AGM Dry Charged	6	85	-	12	-
6	AGM	PTM-YTX7A-B5-AGM	+ on the Left	+ -	AGM Dry Charged	6	90	-	12	-
6	AGM	PTM-YTZ7S-B5-AGM	+ on the Right	- +	AGM Dry Charged	6	80	-	12	-
6.5	AGM	PTM-YT7B-B5-AGM	+ on the Left	+ -	AGM Dry Charged	6.5	80	-	12	-
8	AGM	PTM-YT9B-B5-AGM	+ on the Left	+ -	AGM Dry Charged	8	100	-	12	-
8	AGM	PTM-YTX9-B5-AGM	+ on the Left	+ -	AGM Dry Charged	8	120	-	12	-
8,6	AGM	PTM-YTZ10S-B5-AGM	+ on the Left	+ -	AGM Dry Charged	8,6	130	-	12	-
9	AGM	PTM-YT9A-B5 (ex YB9-B)	+ on the Left	+ -	AGM Dry Charged	9	130	-	12	-
9.5	AGM	PTM-YT12A-B5-AGM	+ on the Left	+ -	AGM Dry Charged	9.5	120	-	12	-
10	AGM	PTM-YT12B-B5-AGM	+ on the Left	+ -	AGM Dry Charged	10	125	-	12	-
10	AGM	PTM-YTX12-B5-AGM	+ on the Left	+ -	AGM Dry Charged	10	180	-	12	-
12	AGM	PTM-YTZ14S-B5-AGM	+ on the Left	+ -	AGM Dry Charged	12	180	-	12	-
12	AGM	PTM-YTX14-B5-AGM	+ on the Left	+ -	AGM Dry Charged	12	200	-	12	-
12	AGM	PTM-YTX14HL-B5-AGM	+ on the Right	- +	AGM Dry Charged	12	160	-	12	-
14	AGM	PTM-YTX16-B5-AGM	+ on the Left	+ -	AGM Dry Charged	14	210	-	12	-
14	AGM	PTM-YTX20CH-B5-AGM	+ on the Left	+ -	AGM Dry Charged	14	210	-	12	-
18	AGM	PTM-YTX20L-B5-AGM	+ on the Right	- +	AGM Dry Charged	18	260	-	12	-
19	AGM	PTM-BMW-AGM	+ on the Left	+ -	Factory Activated	19	220	-	12	-
24	AGM	PTM-YTX24HL-B5-AGM	+ on the Right	- +	AGM Dry Charged	24	290	-	12	-

PowerTec Red Label Motorcycle Batteries

Dry-Charged, Sealed, Casted alloy grids technology with Pb/Sb.



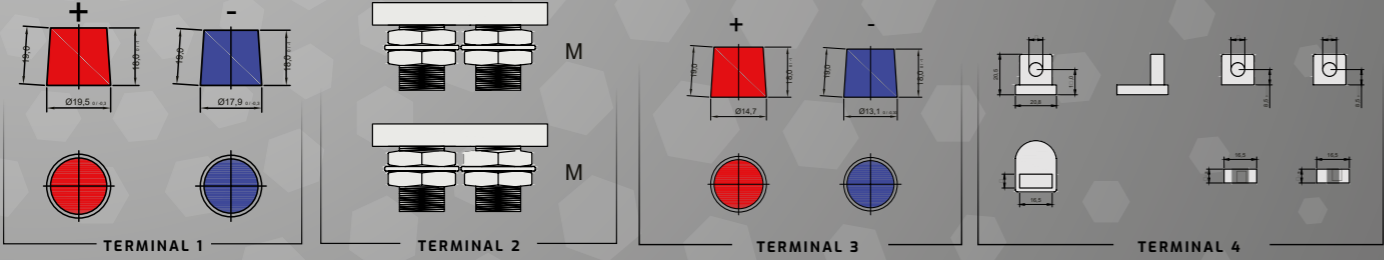
3	FL	PTM-YB3L-A	+ on the Right	- +	Flooded	3,0	30	-	12	-
4	FL	PTM-YB4L-B	+ on the Right	- +	Flooded	4,0	45	-	12	-
5	FL	PTM-YB5L-B	+ on the Right	- +	Flooded	5,0	60	-	12	-
8	FL	PTM-YB7-A	+ on the Left	+ -	Flooded	8,0	100	-	12	-
8	FL	PTM-YB7L-B2	+ on the Right	- +	Flooded	8,0	100	-	12	-
9	FL	PTM-YB9L-A2	+ on the Right	- +	Flooded	9,0	115	-	12	-
11	FL	PTM-YB10L-B	+ on the Right	- +	Flooded	11,0	130	-	12	-
11	FL	PTM-YB10L-A2	+ on the Right	- +	Flooded	11,0	130	-	12	-
12	FL	PTM-YB12A-A	+ on the Left	+ -	Flooded	12,0	155	-	12	-
12	FL	PTM-YB12AL-A2	+ on the Right	- +	Flooded	12,0	155	-	12	-
14	FL	PTM-YB14L-A2	+ on the Right	- +	Flooded	14,0	170	-	12	-
14	FL	PTM-YB14-A2	+ on the Left	+ -	Flooded	14,0	170	-	12	-
16	FL	PTM-YB16AL-A2	+ on the Right	- +	Flooded	16,0	190	-	12	-
18	FL	PTM-YB18L-A	+ on the Right	- +	Flooded	18,0	200	-	12	-
19	FL	PTM-YB16-B	+ on the Left	+ -	Flooded	19,0	230	-	12	-
20	FL	PTM-Y50-N18L-A	+ on the Right	- +	Flooded	20,0	250	-	12	-

ETN	Battery Construction	Terminal Type	Weight kg +/- 5%		Quantity per carton	Dimensions mm			PowerTec EAN Bar Codes
			Dry Net Battery	Battery with acid		Length	Width	Height	

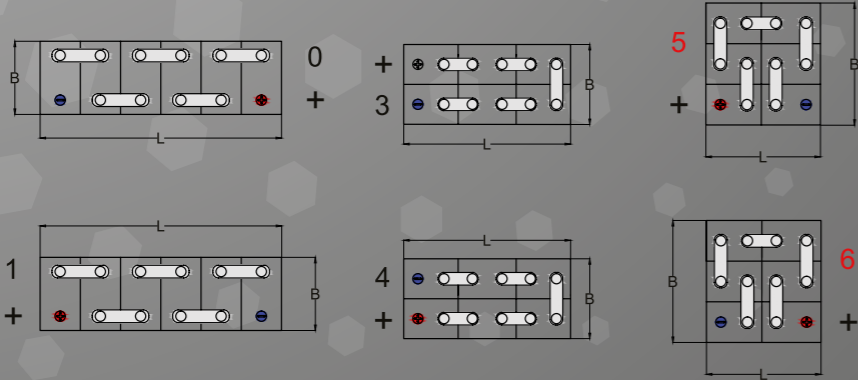
-	AGM Dry Charged	G2	1,14	1,44	8	113	70	85	7640249195582
-	AGM Dry Charged	G2	1,48	1,86	8	113	70	105	7640249195599
-	AGM Dry Charged	G2	1,85	2,39	8	113	70	130	7640249195605
-	AGM Dry Charged	G3	1,87	2,4	6	150	87	93	7640249195612
-	AGM Dry Charged	G2	1,56	1,93	8	113	70	105	7640249195629
-	AGM Dry Charged	G2	1,68	2,16	6	150	65	93	7640249195636
-	AGM Dry Charged	G13	2,05	2,65	6	150	65	105	7640249195643
-	AGM Dry Charged	G3	2,21	2,85	6	150	87	105	7640249195667
-	AGM Dry Charged	G13	2,57	3,2	6	150	87	93	7640249195650
-	AGM Dry Charged	G1	1,85	2,43	6	135	75	139	7640249195469
-	AGM Dry Charged	G3	2,31	2,95	6	150	87	105	7640249195674
-	AGM Dry Charged	G2	2,44	3,19	6	150	69	130	7640249195681
-	AGM Dry Charged	G3	3,00	3,86	6	150	87	130	7640249195698
-	AGM Dry Charged	G13	3,04	3,92	6	150	87	110	7640249195704
-	AGM Dry Charged	G3	3,43	4,4	6	150	87	145	7640249195711
-	AGM Dry Charged	G2	3,22	4,22	4	135	87	165	7640249195735
-	AGM Dry Charged	G3	3,85	4,93	4	150	87	161	7640249195728
-	AGM Dry Charged	G3	3,85	4,93	4	150	87	161	7640249195742
-	AGM Dry Charged	G3	4,57	5,87	3	175	87	155	7640249195766
-	Factory Activated	B10	-	6,08	4	181	77	167	7640249195773
-	AGM Dry Charged	G2	5,35	7,03	3	205	87	162	7640249195759

-	Flooded	G1	0,88	1,3	10	98	56	110	7640249195414
-	Flooded	G3	1,14	1,62	8	120	70	92	7640249195421
-	Flooded	G1	1,44	2,06	8	120	60	130	7640249195438
-	Flooded	G1	1,95	2,8	6	135	75	133	7640249195445
-	Flooded	G1	1,95	2,8	6	135	75	133	7640249195452
-	Flooded	G3	2,25	3,2	6	135	75	139	7640249195476
-	Flooded	G1	2,62	3,65	6	135	90	145	7640249195483
-	Flooded	G3	2,62	3,65	6	135	90	145	7640249195490
-	Flooded	G1	3,03	4,06	6	134	80	160	7640249195506
-	Flooded	G3	3,03	4,06	6	134	80	160	7640249195513
-	Flooded	G3	3,16	4,38	6	134	89	166	7640249195520
-	Flooded	G3	3,16	4,38	4	134	89	166	7640249195537
-	Flooded	G5	4,10	6,02	4	205	70	162	7640249195544
-	Flooded	G8	3,90	5,82	4	180	90	162	7640249195551
-	Flooded	G3	4,50	6,42	4	175	100	155	7640249195568
-	Flooded	G8	4,35	6,27	4	205	90	162	7640249195575

CAR AND TRUCK BATTERIES - TYPES OF TERMINALS



BATTERY LAYOUT 12V



CODE	B3=B4: with adapters		
B 00	Without hold down		
B 01			
B 03			
B 04			
B 05			
B 06			
B 07			
B 09			
B 11			
B 12			
B 13			
B 14			

International Warranty

Thank you for purchasing our product. Flawless functioning of the battery is guaranteed for from the date of purchase. The warranty is valid only when the user has followed the instructions listed below and properly handled the product during ownership:

- In case of ignition problems, users are advised to visit an authorised Auto Electrical Service Agent, where the electrical system will be checked and the battery recharged and checked, if necessary.
- When claiming the warranty, the battery should be returned to the nearest authorised Service Agent. The battery must not be mechanically damaged, and no factory labels can be damaged. The battery should be returned together with proof of purchase and duly completed Warranty Certificate, since the Warranty cannot be claimed without these documents.
- In the case of proven manufacturer's fault within the Warranty period the battery repair or replacement costs shall be borne by the Authorised Importer. In the case of an unjustified Warranty claim (i.e. discharged battery), the costs shall be borne by the purchaser.
- The Manufacturer or Authorised Importer will not be responsible for the battery in the following circumstances:
 - * damage caused by defective or damaged electrical system in the purchaser's vehicle,
 - * the battery is mechanically damaged,
 - * the battery has not been installed, maintained, charged or used according to the instructions,
 - * the battery has been used for a purposes it was not designed for,
 - * the battery is completely worn-out and come to the end of its normal life.
- The Manufacturer provides services covering maintenance and spare parts for the average 5-year service life of the product.

Instructions for Use of the Starter Battery

Battery Maintenance in the Vehicle:
The battery is designed for starting internal combustion engines, the battery must be clean and dry at all times. It is especially important to keep clean the poles/posts/terminals. The battery must be correctly connected (positive connector to the positive pole, negative connector to the negative pole). Striking the connecting couplings may cause irreparable damage due to potential mechanical disconnection of the electrical circuit in the battery, as well as an explosion. To ensure smooth functioning of the battery, a regular check at qualified workshops or service agent is recommended each year. At the workshops or service agent correct functioning of the vehicle's electrical system will be checked and the level of electrolyte in the battery will be inspected (for the types of batteries that allow that). Appropriate voltage for charging the vehicle's electrical system is between 14.2 V and 14.8 V. If the level of electrolyte in the cells is below the marking, only distilled (demineralised) water may be added. Discharge batteries must be charged up immediately, otherwise irreparable damage may occur. Electrolyte of a discharged battery freezes at 0°C. Frozen electrolyte permanently damages the battery and can mechanically damage the battery casing.

Installation of the Battery into the Vehicle

It is recommended that the installation is performed in accordance with the vehicle manufacturer's instructions and by an expert, especially in the case of coded electric consumers in the vehicle. Special care should be taken to avoid contact between the poles and any tools used during installation. When removing the battery, the negative pole (-) should be disconnected first, followed by the positive pole (+). Before installing the battery, all electric consumers should be turned off and the packing material removed from the new battery. The battery should first be mechanically fixed into the vehicle and then correctly connected. The positive pole (+) should be connected first, and then the negative pole (-). Short circuit may cause permanent battery damage, battery explosion, and injury by sulphuric acid or battery particles. Make sure the connectors are tightly fastened, the positive pole protection is in place, and, if necessary, the battery compartment cover is in place. The place where the battery is being installed must be ventilated.

Charging the Battery outside of the Vehicle

The battery may be charged with direct current only. With the battery charger unplugged, connect the battery. Connect the positive pole (+) of the battery to the positive cable of the charger, and the negative pole (-) of the battery to the negative cable of the charger. When the charging is completed, first turn off the charger, and then disconnect the battery. The battery must be charged in a well ventilated room. Charge the battery with an appropriate charger. The maximum initial charge current must be 1/10 of the battery's capacity (for example, for a 60 Ah battery, the initial charge current is 6A). During the charging, the battery temperature must not rise above 55°C. If this maximum temperature is reached, charging must be stopped. The battery charging is complete, when the density of electrolyte and the charging voltage do not increase within a 2-hour period.

Storage and Transportation

Charged batteries should be stored in a cool and dry place. If the battery remains in the vehicle, disconnect the negative pole (-). If the voltage drops below 12.2 V, the battery must be recharged. At this voltage, the electrolyte does not freeze if the temperature is above -15°C. The battery must be stored or transported in an upright position and secured to prevent toppling over and leakage of electrolyte. Batteries must always be stored in well ventilated areas.

Safety Instructions

- * Due to explosive gas batteries must not be brought into contact with sparks, open fire, or any smouldering elements.
- * The electrolyte in the battery is diluted sulphuric acid. Should the acid get have contact with eyes, immediately rinse with plenty of water for a few minutes and seek medical advice. If the acid is in contact with skin or protective clothing, undress immediately and rinse the affected spot with water for at least 15 minutes. Seek medical advice if necessary.
- * The battery must always be placed in an upright position to prevent electrolyte leakage.
- * During use, storage or charging the battery must be placed in a well ventilated area. Avoid direct exposure of the battery to sunlight.
- * Batteries are heavy, to aid manual handling always use the built-in handles for transportation.
- * Metallic parts can cause short circuits when placed between the poles, which can cause permanent battery damage, explosion or injury by sulphuric acid or battery particles.
- * Children are not allowed to handle the batteries.

PowerTec Red Label Series of Batteries are Manufactured & Marketed
by **Kyoto Japan Group**



PowerTec Red Label Official Distributor:

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