

Safety - Performance - Sustainability - LiFePO4

 **SHIDO**®

LITHIUM ION
BATTERIES



Catalogue



Introduction



Shido Lithium batteries have 4 cells LiFePO4 (Lithium Iron Phosphate) of 3.2 volts connected in series in order to reach an OCV of 12.8 volts. A perfect voltage to use as a starter battery for motorcycles. The electronic Battery Management System or BMS spread the charge and discharge regularly over the four cells. Thanks to its small internal resistance a Shido Lithium battery can generate a very high starting current with little Ah. This starting power delivers a powerful and quick start of the vehicle.



Lithium Iron Phosphate Technology



CHARGE STATUS INDICATOR LEDS



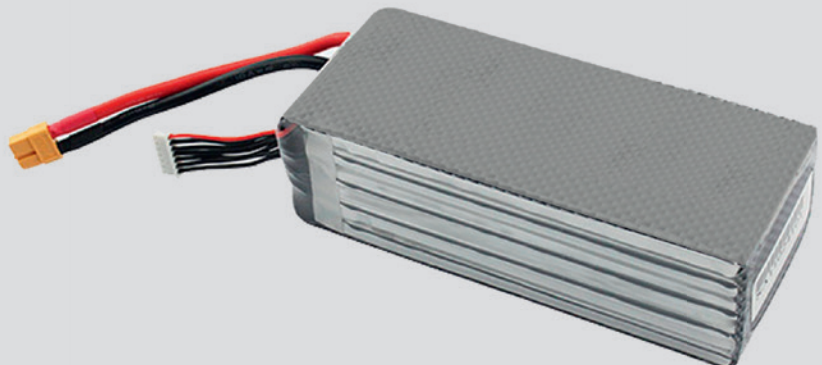
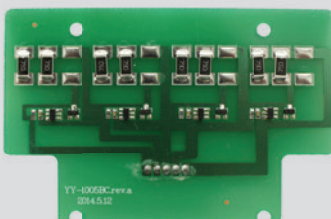
By pressing the TEST button you check the charge status of the battery.

LITHIUM IRON PHOSPHATE CELLS

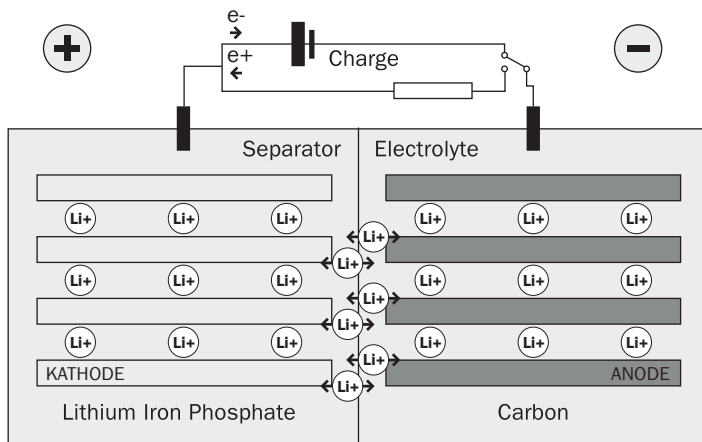
Shido Lithium batteries have 4 cells Lithium Ferro Phosphate as a cathode. Therefore, the Shido Lithium batteries are extremely stable, have a long lifetime and can manage high charge and discharge currents.

BATTERY MANAGEMENT SYSTEM

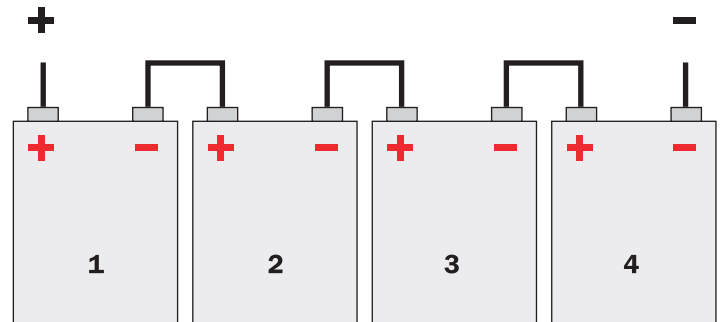
Divided voltage and current evenly over the 4 cells to provide a uniform charge and discharge. The delivered stable capacity improves the performance and extends the life of the battery.



Working Principles



4 cells LiFePO₄ (Lithium Ferro Phosphate) 3.2 Volt in series - OCV is 12.8 volts.



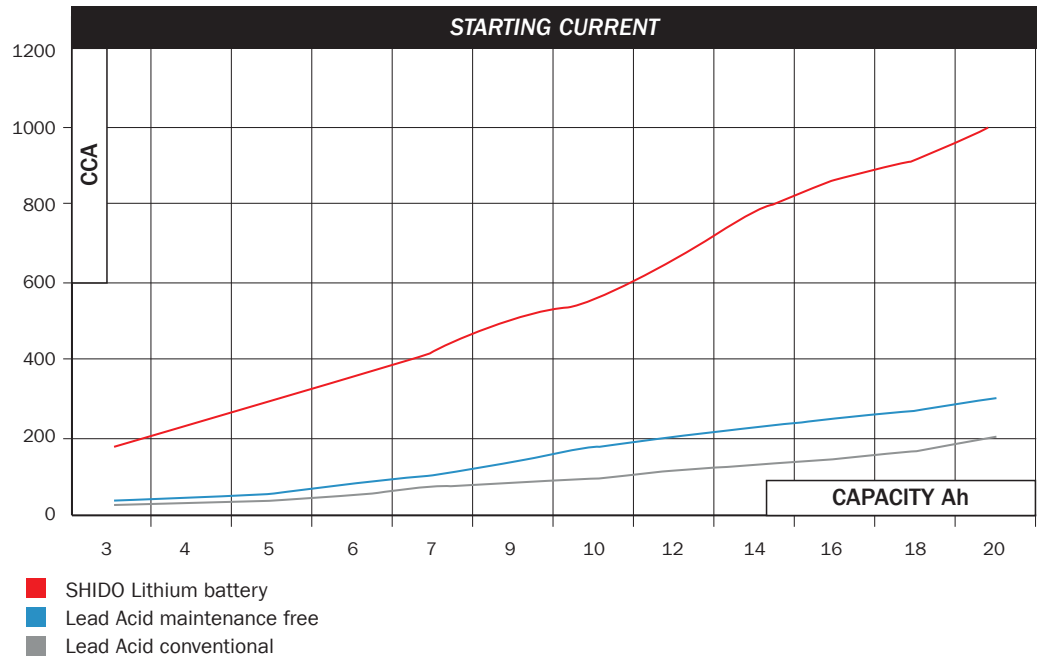
Advantages



- Superb cranking capacity
- Up to 75% lighter than Lead-Acid batteries
- Long capacity retention
- Lower self discharge: Longer shelf life
- Excellent cycle life: more than 1200 cycles
- More economical
- Drop-in replacement
- Less fuel consumption
- Super-fast recharge
- Safe in use
- No maintenance
- Stable discharge voltage
- No pollution, no lead and no acid
- Capacity indicator
- IP68 waterproof

Higher starting power

The starter needs sufficient starting current (CCA) to start. Depending on the necessary starting current a lead-acid battery requires a number of Ah to be able to generate this current. Shido Lithium batteries generate a similar or greater starting power than a comparable lead-acid battery with a smaller Ah value. This is because the internal resistance of a lithium battery is about three times less than a lead-acid battery. As a result, the maximum discharge current is 3 times higher than for a lead-acid battery. A higher starting current guarantees a smoother start.

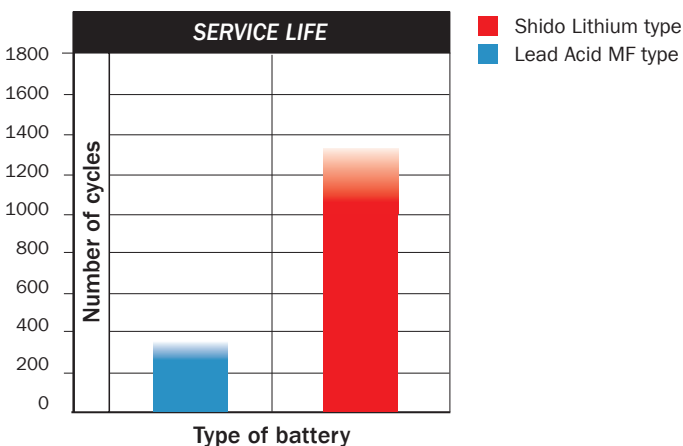


LEAD-ACID BATTERY		
TYPE	CAPACITY	STARTING CAPACITY
	Ah	CCA
YB4L-B	4	56
YTX7A-BS	6	105
YTZ10S	8,6	190
YB9-B	9	130
YTX14-BS	12	200

SHIDO LITHIUM BATTERY			DIFFERENCE CCA %
TYPE	CAPACITY	STARTING CAPACITY	
		Ah	CCA
LTX4L-BS LION	1,6	95	+ 70 %
LTX7A-BS LION	2,4	150	+ 43 %
LTZ10S LION	4	240	+ 26 %
LB9-B Q LION	3	180	+ 38 %
LTX14-BS LION	4	240	+ 20 %

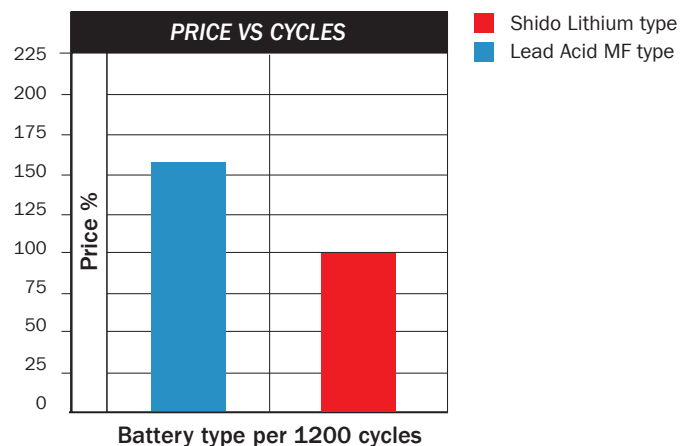
Longer life span

The service life of a battery is determined by the number of charge and discharge cycles. This is approximately 350 cycles for lead-acid batteries and about 1200 cycles for Shido Lithium (25% DOD or depth of discharge).



More economical

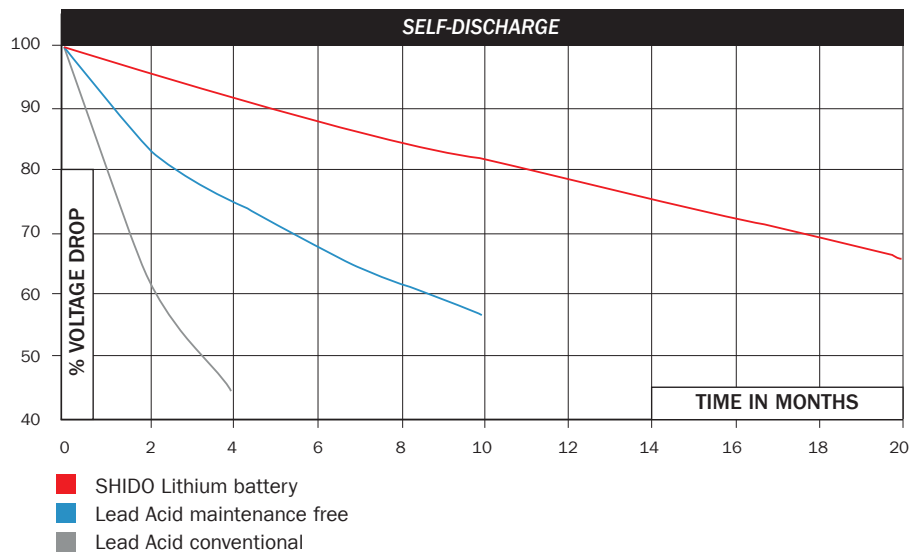
Over its entire lifetime a Lithium battery shows to be economical, in average about 2/3 the price of a lead-acid battery.



Low self-discharge

A lead-acid battery loses voltage relatively quickly through self-discharge when not using the motorcycle. After a winter the battery doesn't have sufficient capacity left to rotate the starter.

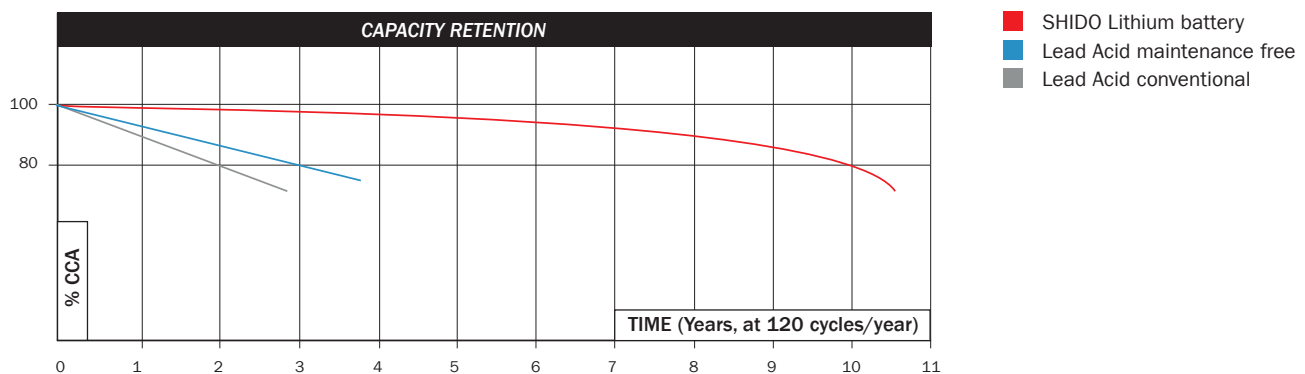
This self-discharge is very low for a Shido Lithium battery. Even after 2 year not using your motorcycle you still can start the engine. Note: Hidden power consumers such as alarm systems can discharge the battery much faster than only through the self-discharge.



Capacity retention

Typically for a lead-acid battery is the decrease of capacity in the course of time. A new lead-acid battery has a higher starting power than a battery pack that is already several years old. The starting current of a Shido Lithium remains all his life at a high level which

guarantees you a smooth start for a very long time. It is generally assumed that a battery must have at least 80% of its original capacity to be able to start the engine.



Safety

A Shido Lithium battery is completely maintenance-free, the composition LiFePO4 cannot explode and does not contain substances hazardous to the environment. All Shido Lithium batteries are IP68 waterproof.

Shido Lithium batteries cannot leak and may be installed in any position, even upside down.



Weight

Shido Lithium batteries are on average 3 to 4 times lighter than a lead-acid battery.

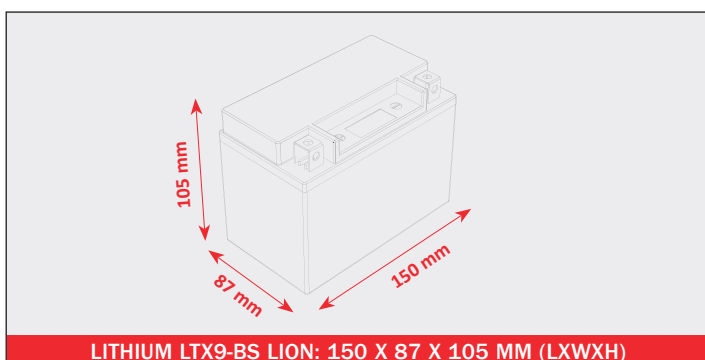
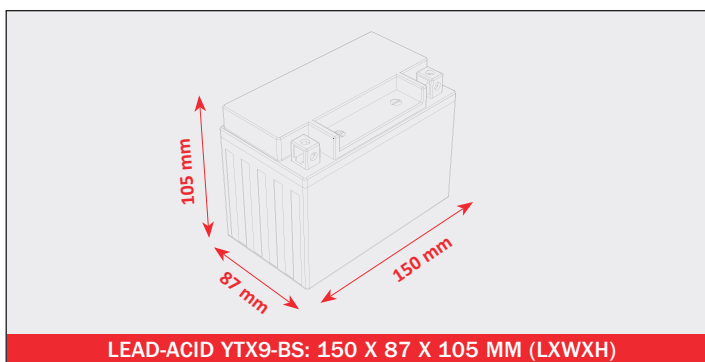


LEAD-ACID BATTERY		SHIDO LITHIUM BATTERY		DIFFERENCE
ITEM	Kg	ITEM	Kg	Kg
YB4L-B	1,5	LTX4L-BS LION -S-	0,4	-1,1
YTX7A-BS	2,6	LTX7A-BS LION -S-	0,6	-2,0
YTZ10S	3,2	LTZ10S LION -S-	0,9	-2,3
YB9-B	3,1	LB9-B Q LION -S-	0,6	-2,5
YTX14-BS	4,6	LTX14-BS LION -S-	1,1	-3,5
YTX20-BS	6,7	LTX20L-BS Q LION -S-	1,4	-5,3



Dimensions

Shido Lithium batteries have exactly the same dimensions as the original lead-acid battery and can be connected easily via universal terminals. Some batteries are provided with spacers to approximate the dimensions of the lead-acid battery.



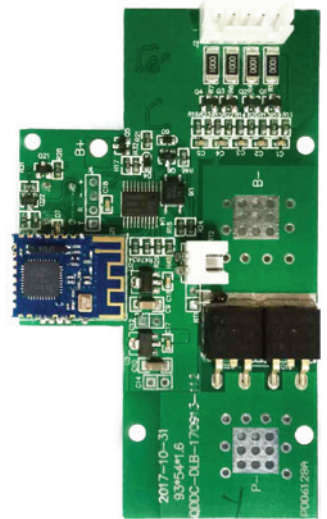
SHIDO[®]CONNECT

Smart Lithium Ion Start Batteries



REVOLUTIONARY BMS

- Latest development in LiFePO4
- Completely new Battery Management System
- Personal QR code per battery
- Battery data on your smartphone
- Access and monitor data
- Consult history
- Compatible with iOS and Android
- Maintain battery health
- Various safety functions



Specifications

FIRST LiFePO4 SMART BATTERY

- Developed and engineered exclusively for Shido

CONNECT YOUR BATTERY WITH YOUR SMARTPHONE

- Retrieve all battery info via personal QR code

MONITOR YOUR BATTERY

- Battery and individual cell voltage
- Cell balancing
- Battery temperature
- Battery state of charge
- End of life indication

SAFETY FUNCTIONS

- Alarm records: over-temperature, over-charge, low voltage, under discharge
- Notification after 7 days without connection

SLEEP FUNCTION

- Put your battery safely in sleep mode for long time storage



SHIDO[®] MARINE



IP68 WATERPROOF

- A special sealing between cover & container prevents water seeping in



NO POLLUTION

- No lead, no acid on the water
- No liquids inside
- Only low impact materials
- High corrosion resistance



HIGHER START CAPACITY

LEAD ACID	SHIDO LION	SHIDO LION CONNECT	LEAD ACID	SHIDO LION
ITEM	ITEM	ITEM	START CAPACITY	START CAPACITY
YTX20HL-BS-PW	LTX20L-BS Q LION	LTX20 Q CNT LI	310 CCA	420 CCA
YB30CL-B	LIX30L-BS Q LION	LIX30 Q CNT LI	385 CCA	540 CCA



VERY LOW SELF DISCHARGE



75% LOWER WEIGHT



3 TIMES LONGER CYCLE LIFE



3 TIMES SHORTER CHARGING TIME



Charging

A Shido Lithium battery can be charged quickly with a high current (see max. A in the technical specifications). Use a charger that never and in any mode goes above 15 volts.

The lithium cells would be damaged irreparably. The Shido Lithium batteries are equipped with a charge status indicator.



SHIDO DC3 3A DUAL BATTERY CHARGER



FEATURES

Battery Charger/Maintainer

100% Automatic

Microprocessor-Controlled

Designed to charge 12V batteries between 1 - 110 Ah

IP64

Patented technology

Microprocessor controlled

Multi-stage charging for added precision, safety and battery life.

Scrolling digital display

Language selection: English, German, French.

Charging status LED

Safety

Reverse polarity, safety shut-off and spark proof, Patented Thermal Runaway.

Hook attachment

Protection bumpers

Switch for Lead Acid and Lithium function

MULTI STAGE CHARGING

- 1 ANALYZE
- 2 RECOVER
- 3 SOFT START
- 4 BULK MODE
- 5 ABSORPTION
- 6 MONITORING
- 7 FLOAT MODE
- 8 MAINTAIN



SPECIFICATIONS

BATTERY TYPE: Lithium LiFePO4, AGM, GEL, Lead-acid batteries, Stop - start batteries

CHARGING VOLTAGE: 14.2 - 14.4V

WEIGHT: 780g

DIMENSIONS: 194mm x 89mm x 83mm

INPUT: 230V AC ~ 50Hz, 0.6A

OUTPUTS: 12V - 3A

OUTPUT PROTECTION: Yes

MAX OUTPUT VOLTAGE: 14,7V

REVERSE POLARITY PROTECTION: Yes

IP RATING: IP64

WORKING TEMPERATURE: -20 °C to +50 °C

CABLE LENGTH: 197 cm



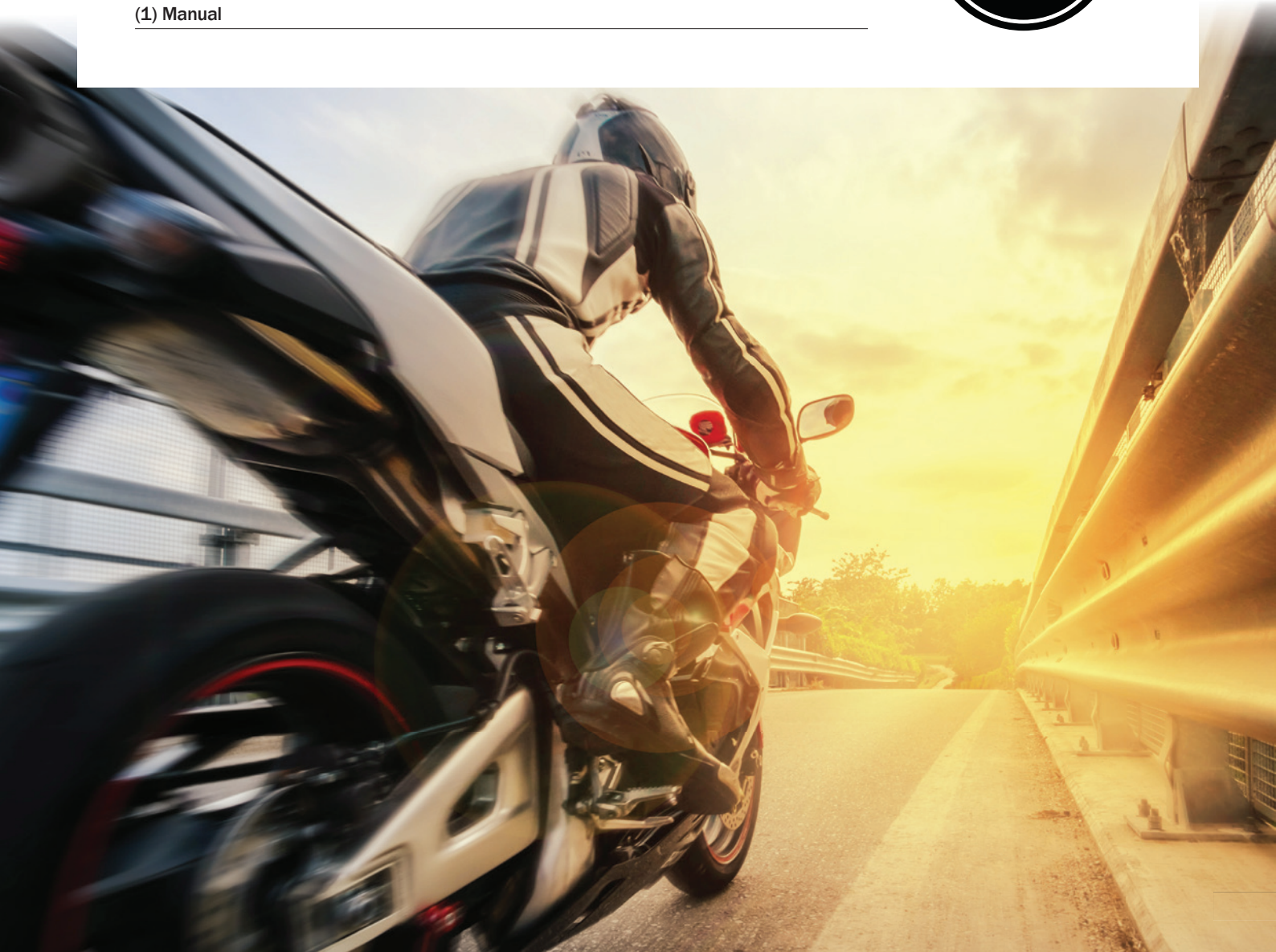
BOX CONTENT

(1) SHIDO DC3 3 A dual battery charger/maintainer

(1) Clamp adapter

(1) 60 cm fused ring leads harness with weather cap

(1) Manual








Cross Reference












LEAD ACID ITEM	SHIDO LITHIUM ITEM	SHIDO CONNECT ITEM	LEAD ACID ITEM	SHIDO LITHIUM ITEM	SHIDO CONNECT ITEM
YT4L-BS	LTX4L-BS LION -S-	LTZ5S CNT Li -S-	YT14B-4	LT14B-BS LION -S-	
YB4L-B	LTX4L-BS LION -S-	LTZ5S CNT Li -S-	YT14B-BS	LT14B-BS LION -S-	
YTX5L-BS	LTX5L-BS LION -S-	LTZ5S CNT Li -S-	YTX15L-BS	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YTC4L-BS	LTX4L-BS LION -S-	LTZ5S CNT Li -S-	12N14-3A	LTX14AHL-BS LION -S-	
YB5L-B	LB5L-B LION -S-		YB14-A2	LTX14AHL-BS Q LI -S-	
YTC5L-BS	LTX5L-BS LION -S-	LTZ5S CNT Li -S-	YB14-B2	LTX14AHL-BS Q LI -S-	
12N5.5-3B	LB5L-B LION -S-		YB14A-A2	LTX14AHL-BS Q LI -S-	
12N5.5-4A	LB5L-B LION -S-		YB14L-A2	LTX14AHL-BS Q LI -S-	
12N5.5-4B	LB5L-B LION -S-		YB14L-B2	LTX14AHL-BS Q LI -S-	
YTZ7S	LTZ7S LION -S-	LTZ7S CNT Li -S-	HVT 08	LB16AL-A2 LION -S-	
YTX7A-BS	LTX7A-BS LION -S-		HVT 03	LT14B-BS LION -S-	
YTX7L-BS	LTX7L-BS LION -S-	LTZ7S CNT Li -S-	YTX16-BS	LTX16-BS LION -S-	
YT7B-4	LT7B-BS LION -S-		YTX16-BS-1	LTX16-BS LION -S-	
YT7B-BS	LT7B-BS LION -S-		YB16AL-A2	LB16AL-A2 LION -S-	
12N7-3B2	LB9-B Q LION -S-		YB16B-A1	LTX16-BS LION -S-	LTX16 CNT Li -S-
YB7-A	LB9-B Q LION -S-		HYB16A-AB	LTX16-BS LION -S-	LTX16 CNT Li -S-
YB7L-B	LB9-B Q LION -S-		51814	51913 LION -S-	
YB7L-B2	LB9-B Q LION -S-		YB18L-A	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
HVT 09	LB9-B Q LION -S-		YTX20CH-BS	LTX20CH-BS LION -S-	
YTX9-BS	LTX9-BS LION -S-	LTX9 CNT Li -S-	YTX20H-BS	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YT9B-4	LT9B-BS LION -S-		YTX20HL-BS	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YT9B-BS	LT9B-BS LION -S-		YTX20L-BS	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YTZ10S	LTZ10S LION -S-	LTZ10S CNT Li -S-	YTX20-BS	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
12N9-3B	LB9-B Q LION -S-		YTX20A-BS	LTX20CH-BS LION -S-	
YB9-B	LB9-B Q LION -S-		51913	51913 LION -S-	
YB9A-A	LB9-B Q LION -S-		YB16-B	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YB9L-A2	LB9-B Q LION -S-		YB16CL-B	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YB9L-B	LB9-B Q LION -S-		YB16L-B	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YTX9A-BS	LB9-B Q LION -S-		Y50-N18A-A	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YT12A-BS	LT12A-BS LION -S-		Y50-N18L-A	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YT12B-4	LT12B-BS LION -S-		Y50-N18L-A3	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YT12B-BS	LT12B-BS LION -S-		Y50-N18L-A-CX	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YTX12-BS	LTX12-BS LION -S-	LTX12 CNT Li -S-	HVT 01	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YB10L-A2	LB12AL-A2 Q LION -S-		SY50-N18L-AT	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YB10L-B2	LB12AL-A2 Q LION -S-		YTX24H-BS	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YTZ12S	LTZ12S LION -S-	LTZ12S CNT Li -S-	YTX24HL-BS	LTX24HL-BS LION -S-	LTX20 Q CNT Li -S-
YTZ14S	LTZ14S LION -S-	LTZ14S CNT Li -S-	HVT 04	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
12N12A-4A-1	LB12AL-A2 Q LION -S-		HVT 05	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YB12A-A	LB12AL-A2 Q LION -S-		HVT 06	LTX20L-BS Q LION -S-	LTX20 Q CNT Li -S-
YB12A-B	LB12AL-A2 Q LION -S-		Y60-N24AL-B	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YB12AL-A	LB12AL-A2 Q LION -S-		Y60-N24L-A	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YB12AL-A2	LB12AL-A2 Q LION -S-		YHD-12	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YB12B-B2	LB12B-B2 LION -S-		53030	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YB12C-A	LTX14AHL-B Q LI -S-		Y60-N30L-A	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YTX14-BS	LTX14-BS LION -S-	LTX14 CNT Li -S-	YB30CL-B	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YTX14AH-BS	LTX14AHL-BS Q LI -S-		HVT 07	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YTX14AHL-BS	LTX14AHL-BS Q LI -S-		HVT 02	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YTX14H-BS	LTX14-BS LION -S-	LTX14 CNT Li -S-	YTX30L-BS	LIX30L-BS Q LION -S-	LIX30 Q CNT Li -S-
YTX14L-BS	LTX14L-BS LION -S-				

Shido Lion Data Sheet

ITEM	Volt	Capacity	CA	Energy	Dimensions (mm)			Weight	Charge Current (A)		Assembly Figure
		Ah	A	Wh	L	W	H	(Kg)	STD	MAX	
LB5L-B LION -S-	12	1,6	95	19	120	60	120	0,4	1	8	
LTX4L-BS LION -S-	12	1,6	95	20	113	70	85	0,4	1	8	
LTX5L-BS LION -S-	12	1,6	95	20	113	70	105	0,4	1	5	
LTZ5S LION -S-	12	2	120	24	113	69	85	0,5	1	10	
LTKTM04L LION -S-	12	2	120	24	89	49	90	0,5	1	10	
LTZ7S LION -S-	12	2,4	150	30	113	69	105	0,6	1,5	12	
LTX7A-BS LION -S-	12	2,4	150	30	150	87	93	0,6	1,5	12	
LTX7L-BS LION -S-	12	2,4	150	30	113	69	125	0,6	1,5	12	
LT7B-BS LION -S-	12	3	180	36	150	65	92	0,7	1,5	15	
LB9-B Q LION -S-	12	3	180	36	134	75	134	0,6	1,5	12	
LT9B-BS LION -S-	12	3	180	36	150	65	106	0,7	1,5	15	
LTX9-BS LION -S-	12	3	180	36	150	87	105	0,7	1,5	15	
LT12A-BS LION -S-	12	3,5	210	42	150	87	107	0,9	2	18	
LTZ10S LION -S-	12	4	240	48	150	87	93	0,9	2	20	
LB12AL-A2 Q LION -S-	12	4	240	48	130	75	160	0,9	2	20	
LTX12-BS LION -S-	12	4	240	42	150	87	130	0,9	2	18	
LTX14-BS LION -S-	12	4	240	48	150	87	145	1,1	2	20	
LTX14AHL-BS Q LION -S-	12	4	240	48	134	75	168	1,1	2	20	
LTX14L-BS LION -S-	12	4	240	48	150	87	145	1,1	2	20	
LTZ8V LION -S-	12	4,5	270	54	113	69	105	0,88	2,5	22,5	
LB16AL-A2 LION -S-	12	5	300	60	150	65	144	1,1	2,5	25	
LT12B-BS LION -S-	12	5	300	60	150	65	130	1,1	2,5	25	
LTZ12S LION -S-	12	5	300	60	150	87	110	1,1	2,5	25	
LTZ14S LION -S-	12	5	300	60	150	87	110	1,1	2,5	25	
LT14B-BS LION -S-	12	5	300	60	150	65	144	1,1	2,5	25	
LTX16-BS LION -S-	12	6	360	72	150	87	164	1,4	3	24	

ITEM	Volt	Capacity	CA	Energy	Dimensions (mm)			Weight	Charge Current (A)		Assembly Figure
		Ah	A	Wh	L	W	H	(Kg)	STD	MAX	
LTX20CH-BS LION -S-	12	6	360	72	150	87	164	1,4	3	24	
LTX20L-BS Q LION -S-	12	7	420	84	175	87	155	1,4	3,5	28	
LTX24HL-BS Q LION -S-	12	7	420	84	175	87	163	1,7	3,5	28	
51913 LION -S-	12	7,5	420	90	181	77	170	1,7	4	28	
LIX30L-BS Q LION -S-	12	8	480	96	167	124	163	2	4	32	

Shido Connect Data Sheet

ITEM	Volt	Capacity	CA	Energy	Dimensions (mm)			Weight	Charge Current (A)		Assembly Figure
		Ah	A	Wh	L	W	H	(Kg)	STD	MAX	
LTZ5S CNT Li -S-	12	2	120	24	113	69	85	0,5	1	10	
LTZ7S CNT Li -S-	12	2,4	150	30	113	69	105	0,6	1,5	12	
LTX9 CNT Li -S-	12	3	180	36	150	87	105	0,7	1,5	15	
LTZ10S CNT Li -S-	12	4	240	48	150	87	93	0,9	2	20	
LTX12 CNT Li -S-	12	4	240	42	150	87	130	0,9	2	18	
LTX14 CNT Li -S-	12	4	240	48	150	87	145	1,1	2	20	
LTZ12S CNT Li -S-	12	5	300	60	150	87	110	1,1	2,5	25	
LTZ14S CNT Li -S-	12	5	300	60	150	87	110	1,1	2,5	25	
LTX16 CNT Li -S-	12	6	360	72	150	87	164	1,4	3	24	
LTX20 Q CNT Li -S-	12	7	420	84	175	87	155	1,4	3,5	28	
LIX30 Q CNT Li -S-	12	8	480	96	167	124	163	2	4	32	

All batteries have the same terminal type: CU



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