



YUASA BATTERY



PRODUCT RANGE BROCHURE

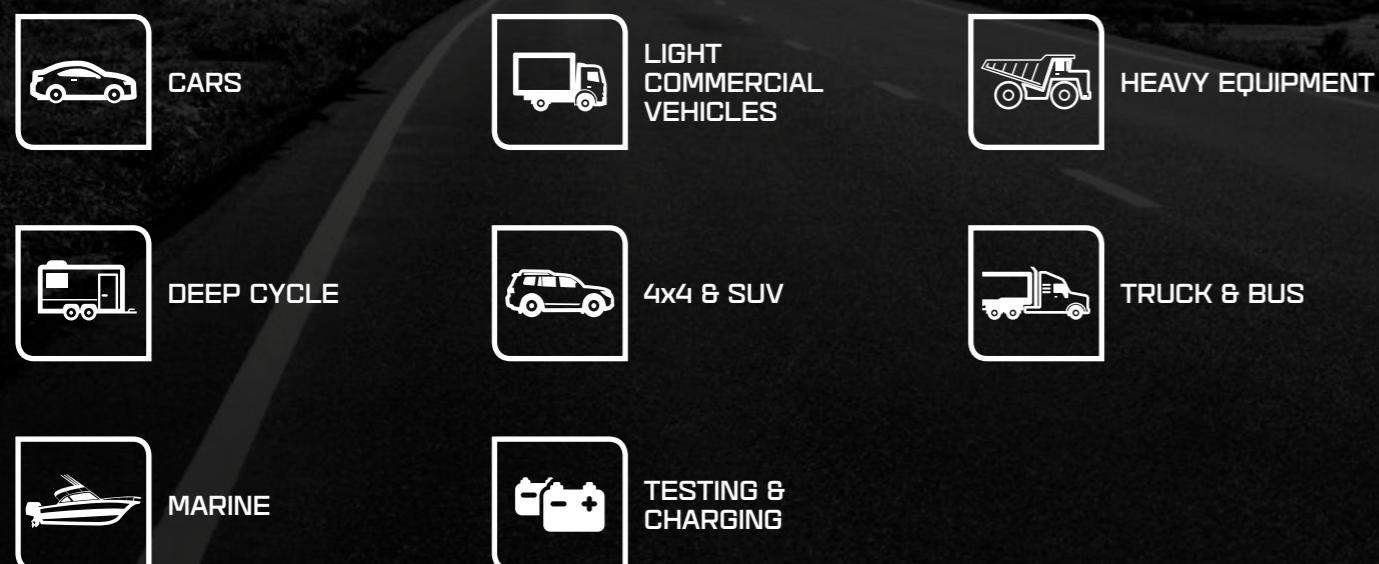
A PROVEN LEADER FOR STORED ENERGY SOLUTIONS.

Yuasa Batteries is part of the Century Yuasa group, New Zealand's leading battery supplier. Our reputation for quality and innovation has been refined and demonstrated over many decades.

In this time we have developed the engineering expertise and technical know-how to ensure we deliver a range of superior quality batteries better suited to New Zealand's diverse climate and tough conditions.

Today we pride ourselves in offering our customers a range of market leading products and services which continue to set new standards in technology and performance.

The Yuasa product range includes a comprehensive selection of technologically advanced products for use in a diverse range of applications including:



Contents

02	Company Background
05	CCA v Life
06	Understanding Battery Ratings
08	The Yuasa Batteries Difference
10	Battery Technology
12	ISS Active
16	Car & Passenger Vehicle
24	SUV, 4x4 & Light Commercial
28	Truck, Bus & Heavy Equipment
32	Marine
36	Deep Cycle
40	Testing, Charging & Diagnostic Equipment
42	Warranty
44	Battery Life
46	Battery Care & Maintenance
47	Battery Health & Safety
48	Battery Testing
50	Battery Charging
52	New Battery Installation

A True Global Leader

OUR PARENT COMPANY GS YUASA IS ONE OF THE WORLD'S LARGEST BATTERY MANUFACTURERS AND A GLOBAL LEADER IN QUALITY AND INNOVATION.

Since its foundation in 1895, GS Yuasa has continually worked to create advanced stored energy solutions under the corporate vision of "innovation and growth". It is this philosophy that has seen GS Yuasa establish itself as a leading manufacturer of automotive and motorcycle batteries.

Proven Performance

GS YUASA ARE ORIGINAL EQUIPMENT SUPPLIERS TO THE WORLD'S LEADING VEHICLE MANUFACTURERS INCLUDING:



As an affiliate of the GS Yuasa Corporation, Yuasa has access to some of the most advanced technical and R&D resources available in the battery industry. This gives you the assurance that every battery in the Yuasa range has been developed using state-of-the-art manufacturing processes and technical expertise to ensure we satisfy the demands of tomorrow's car parc.



100 Years of History, 200 Years of Expertise



Service & Delivery

OUR NETWORK OF NATIONAL BRANCHES AND DISTRIBUTION CENTRES ARE STRATEGICALLY LOCATED ACROSS NEW ZEALAND ENSURING ACCESS TO LOCALLY HELD PRODUCTS AND BATTERY EXPERTS.



Even more reasons to partner with Century Yuasa Batteries



Innovation & Technology

We invest significantly in research and development to ensure we continue to meet the needs of the market place and the next generation of vehicles.



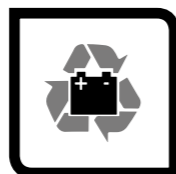
Extensive Product Range

The Yuasa product range includes a comprehensive selection of technologically advanced products including starting, deep cycle, dual purpose and heavy duty batteries for use in a diverse range of applications.



Nationwide Warranty

Each Yuasa battery is backed by a fully comprehensive warranty. This provides peace of mind that your battery is covered against faulty materials or workmanship for up to 36 months[^].



Nationwide Recycling Program

Yuasa Batteries is proud to be part of the Century Yuasa Battery Recycling Program which recycles more than 70,000 batteries each year.



Key Partnerships

A majority of leading Original Equipment Manufacturers (OEM) and New Zealand's biggest retail brands trust Century Yuasa Batteries for their energy solutions. We continually work with our partners to deliver on design, technology and quality.



Yuasa batteries are backed by a fully comprehensive nationwide warranty[^].

[^]Conditions apply. Refer to individual warranty statements attached to each product.

CCA v LIFE – UNDERSTANDING THE POWER YOU NEED

Modern vehicles are becoming increasingly complex, placing extra demands on a battery's performance.

OPTIONAL ELECTRICAL ACCESSORIES, REGENERATIVE BRAKING TECHNOLOGY AND ADVANCED ENGINE MANAGEMENT SYSTEMS, ALL PLACE EXTRA LOADS ON THE BATTERY. IF THESE REQUIREMENTS ARE NOT FACTORED INTO THE DESIGN AND MANUFACTURING PROCESS, THEY CAN LEAD TO PREMATURE BATTERY FAILURE.

Higher CCA's can be achieved through the addition of more battery plates; at the detriment of plate thickness, separator quality and paste density. In colder climates more plates and higher CCA excel, however in hotter climates, the ability to combat corrosion, water loss, vibration and constant idling is as important as cranking power.

Yuasa batteries are designed and manufactured to better suit our unique conditions and diverse climate.

An optimum balance between CCA and service life, they feature specialist internal components and advanced design features to combat the causes of battery failure and deliver what motorists really need – longer life and superior performance.

Don't be misled by high CCA ratings. Always consider the battery's design features and internal components to ensure they are better suited to the vehicle's requirements and operating conditions.

LIKE A HIGH PERFORMANCE RACE CAR THE MORE POWER PRODUCED WILL SHORTEN SERVICE LIFE.

Understanding Battery Ratings

BATTERIES ARE RATED ACCORDING TO A RANGE OF SPECIFICATIONS AND STANDARDS. UNDERSTANDING THESE RATINGS AND THEIR RELEVANCE TO THE BATTERY'S APPLICATION AND OPERATING CONDITIONS IS KEY TO SELECTING THE RIGHT BATTERY.

CCA [Cold Cranking Amperes]

Is a measurement of the current, a fully charged battery can deliver for 30 seconds and maintain a voltage of 7.2 volts (12 volt battery) at a temperature of -18°C.

It is used to determine a battery's ability to supply high cranking current to start the engine and maintain sufficient voltage to power the ignition requirements under severe cold starting conditions.

TEMPERATURE PLAYS A KEY ROLE IN A BATTERY'S ABILITY TO DELIVER CCA



-18°

x2 Twice the power available

+18°



Marine Cranking Amperes [MCA]

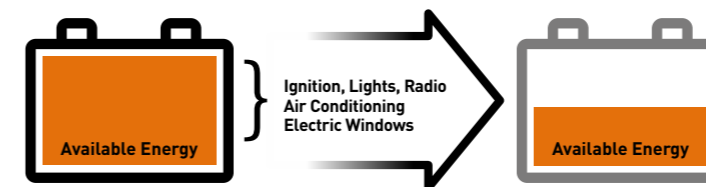
Similar to CCA, MCA is used to measure the number of amperes a battery can deliver for 30 seconds at a specific temperature, however with MCA the test is conducted at 0°C rather than -18°C. MCA ratings are 20 - 25% higher than CCA ratings and commonly used to rate marine starting batteries.

When comparing battery ratings it is important to compare like for like. Always ensure the CCA rating is compared against CCA and MCA rating against MCA. Some manufacturers may rate the battery according to a CA standard. This test is conducted at the same temperature as the MCA rating and should not be confused with CCA.

Ampere-Hour @ 20hr [Ah]

Ah refers to the battery's storage capacity and is the current a fully charged battery will deliver over a 20 hour period before the voltage falls to 10.50V at 25°C.

The more accessories in use the more the available energy is consumed. Consumption of the battery's capacity is referred to as 'discharging' the battery.



Reserve Capacity [RC]

Refers to the length of time in minutes, that a battery at 25°C can deliver a current of 25 Amps until the voltage drops to 10.50V (5.25V for a 6V Battery).

25 Amps represents a typical electrical load on a car under normal running conditions.

RC provides an indication of the time that a vehicle with a normal electrical load will run for if the charging system (alternator) fails.



It is important to note that although a battery may feature an Ah rating, it does not imply suitability for cyclic use. Repeated deep discharge of a standard starting battery will damage the internal components and lead to premature failure. Deep Cycle batteries are designed to withstand repeated cycling and should only be recommended for cycling applications.

The Yuasa Batteries Difference

Yuasa's range of sealed maintenance free batteries are the ultimate in battery performance and technology. Featuring specialist internal components, unique design features and industry leading technologies to combat the causes of battery failure and deliver reliability, longer life and superior performance. Delivering more than just superior starting power, Yuasa batteries deliver exceptional corrosion resistance, longer life and the performance to handle the demands of today's modern vehicles.



1 ROLLED EXPANDED HIGH TIN GRID

Provides improved corrosion resistance and longer life.

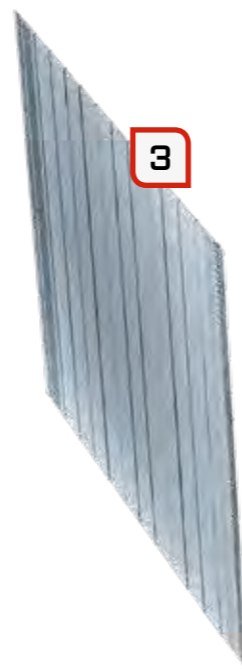
2 WROUGHT LEAD-CALCIUM GRIDS

Improves resistance to grid corrosion and overcharging, while minimising gassing and water usage for reduced self-discharge.



3 LOW-RESISTANCE ENVELOPE SEPARATORS

Improves vibration resistance & helps prevent internal shorts between positive and negative plates.



4 NST PLATE TISSUE

Special tissue on positive plates prevents active material shedding during frequent charging and discharging.



5 PLATELOCK™ TECHNOLOGY

Combats vibration shock and damage from rough, uneven conditions.

6 DIAMOND MESH

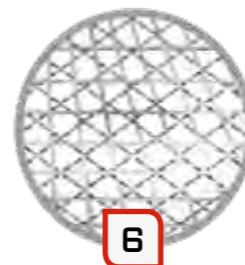
Increased conductivity for higher performance.

7 POLYPROPYLENE CASE

Reinforced design provides durability to withstand shock and vibration.

8 DOUBLE LID WITH LABYRINTH STRUCTURE

Prevents electrolyte loss by collecting and returning liquid to the reservoir. Vents allow the battery to breathe during temperature changes and charging.



9 FLAME ARRESTOR

Prevents external ignition sources from entering the battery.

10 STATE OF CHARGE INDICATOR

For on the spot diagnosis of battery condition.

11 CARRY HANDLE

Ergonomic easy fold-down carry handle.

12 COLD FORGED TERMINAL

Improves strength.

13 HEAT SEALED DOUBLE LID

Prevents contamination, improves strength & reduces water loss.

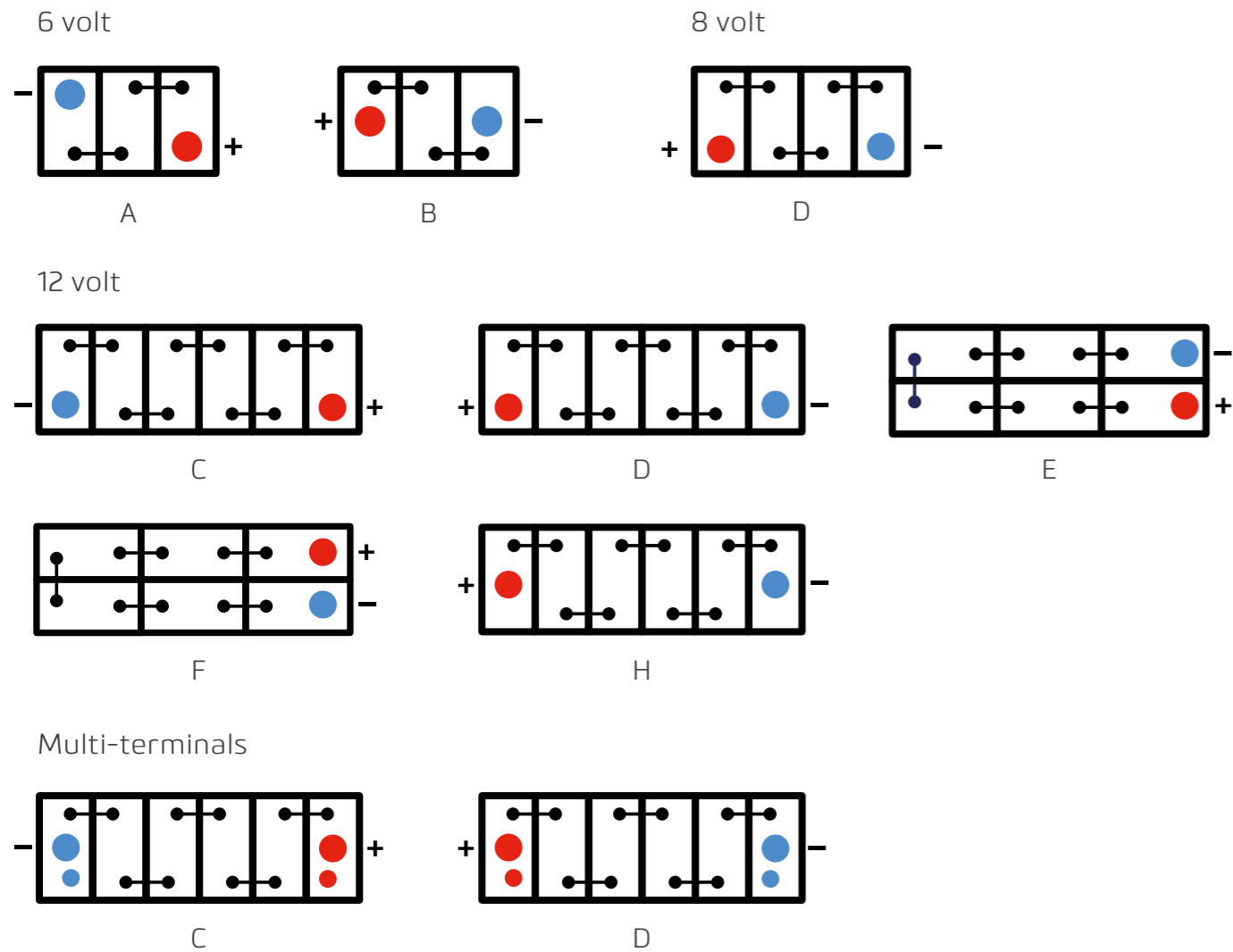
14 CAST-ON PLATE STRAPS

Stronger than conventional connectors. Reduces damage from rough uneven conditions, shock & vibration.

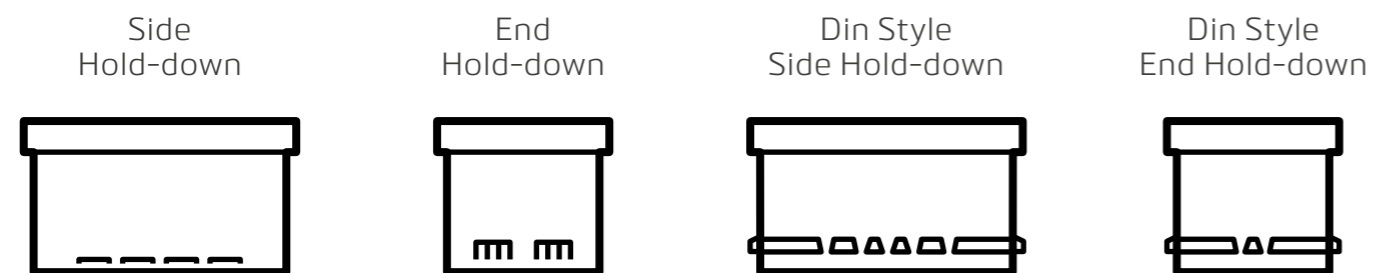


Based on 58EBMF battery.

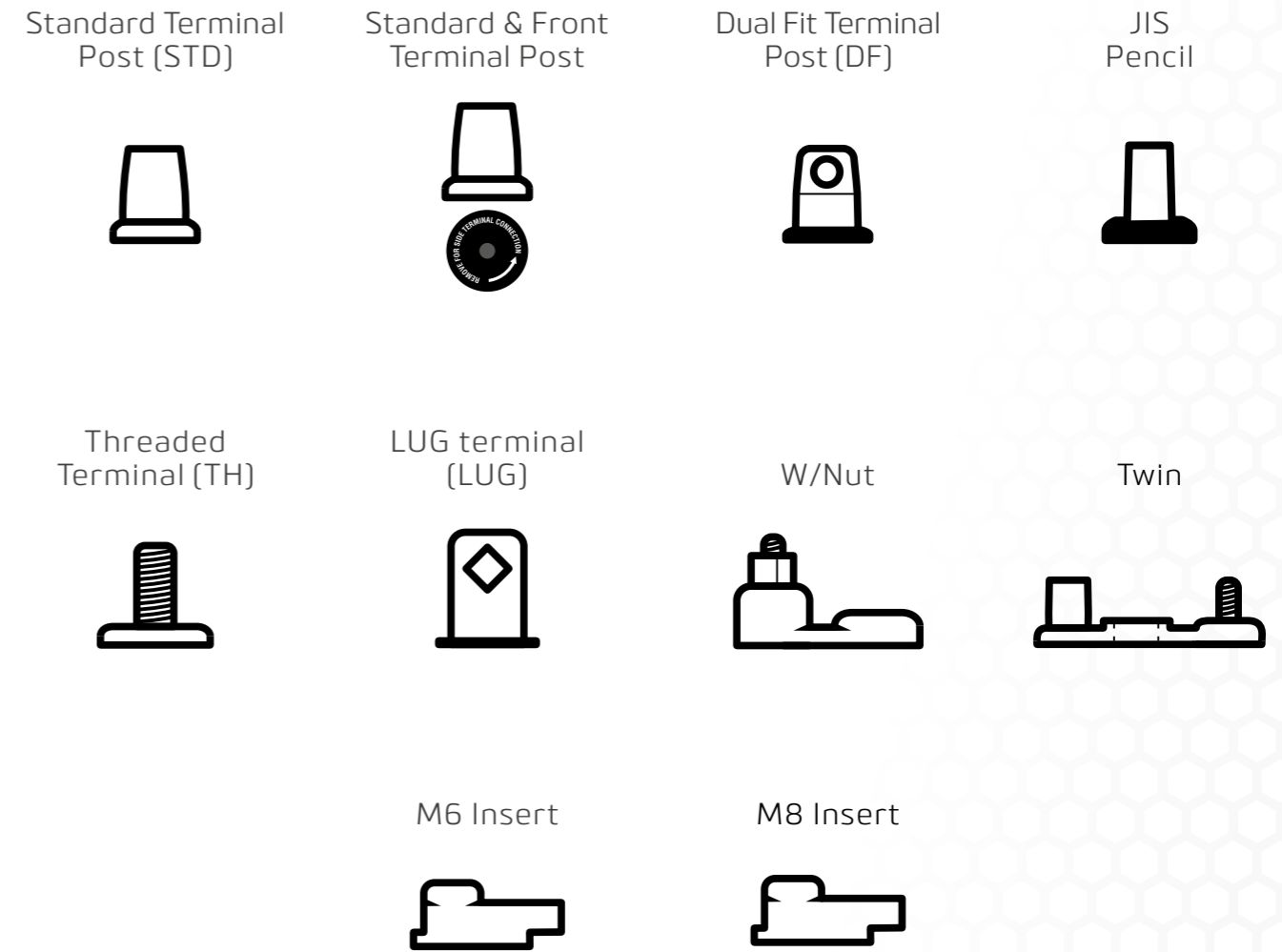
Cell Assembly Layout



Battery Hold-Down



Terminal Types



Special Features Glossary

AGM	Absorbed Glass Mat	FA	Flame Arrestor	PL	Platelock™ Technology
CH	Carry Handles	GM	Glass Mat Separator	PV	Pressure Valve
CI	State of Charge Indicator	LM	Low Maintenance	SL	Side Ledge
CV	Central Venting	MIA	Made in Australia	VR	Vibration Resistant
EFB	Enhanced Flooded Battery	MF	Maintenance Free	VRLA	Valve Regulated Lead Acid
EL	End Ledge	MR	Mud Rack		



ISS ACTIVE & HYBRID

YUASA'S ISS ACTIVE & HYBRID BATTERY RANGE REPRESENTS THE LATEST IN PERFORMANCE AND TECHNOLOGY FOR IDLE STOP START SYSTEMS AND MICRO HYBRID VEHICLES.

Yuasa ISS Active batteries are specially designed to satisfy the fuel saving and emission reducing benefits of vehicles fitted with Idle Stop Start systems.

The range incorporates innovative design features and advanced raw materials to deliver superior cycling performance, high charge acceptance for rapid recharge in between engine off modes and the extra power to run on-board electrics whilst the engine is switched off.

Yuasa Hybrid Auxiliary batteries provide enhanced cycling capability and the power required to run the vehicle's on-board electrics and computer management system. The advanced design features improve cycling ability and enable the battery to recharge faster.



ISS Active AGM

A range of premium batteries incorporating Absorbed Glass Mat (AGM) technology that combines to deliver superior starting power, extreme cycle life and discharge capability in advanced Idle Stop Start systems.

- » Superior starting power
- » Increased cranking capacity*
- » Higher cycling endurance*
- » Deep discharge capability



ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	DIMENSIONS (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
ISS ACTIVE AGM															
618201	DIN55LAGM	24	12	640	100	60	242	175	190	190	C	17.60	STD	SIDE/END	AGM, CH, EL, FA, MF, MR, PL, SL, VR
618203	DIN66LAGM	24	12	760	140	70	274	175	190	190	C	19.30	STD	SIDE/END	AGM, CH, EL, FA, MF, MR, PL, SL, VR
618204	DIN75LAGM	24	12	800	140	95	225	175	190	190	C	23.00	STD	SIDE/END	AGM, CH, EL, FA, MF, MR, PL, SL, VR
618205	DIN88LAGM	24	12	850	160	80	353	175	190	190	C	27.50	STD	SIDE/END	AGM, CH, EL, FA, MF, MR, PL, SL, VR

* Conditions apply. Refer to individual warranty statements attached to each battery. *Compared with conventional flooded batteries.



Yu-Fit Configurator

WITH THE INTRODUCTION OF NEW CO₂ PRODUCTION CONTROL SYSTEMS SUCH AS SMART CHARGING AND IDLE START STOP (ISS) IT IS ESSENTIAL THAT THE VEHICLE HAS THE CORRECT BATTERY TYPE AND SPECIFICATION INSTALLED.

An increasing number of automotive manufacturers have introduced systems that now require a replacement battery to be correctly configured to the vehicle after installation.

Failure to configure the correct specification battery could result in:

- Undercharging or overcharging of the battery resulting in damage which is not covered by the manufacturer's warranty
- Loss of the ISS CO₂ production control system functionality
- Possible loss of non-critical vehicle system functions

Battery configuration prevents incorrect battery charging, ensures the correct operation of the ISS CO₂ production control system and prevents the loss of non-critical vehicle systems.

The Yuasa YU-FIT battery configurator tool allows the configuration process to be carried out on a growing number of vehicles equipped with new technology smart charge and ISS systems.



ISS Active EFB

A range of Enhanced Flooded Batteries (EFB) designed to aid the reduction of CO₂ emissions and fuel consumption in vehicles fitted with standard Idle Stop Start systems. The range includes DIN style maintenance free batteries for popular European vehicles, plus low maintenance flooded batteries for Asian manufactured vehicles.

- » 15% more cranking capacity*
- » 2 x higher cycling endurance*
- » Durable grid design



FOR STANDARD STOP START SYSTEMS



ENHANCED FLOODED BATTERY



ADVANCED CYCLING PERFORMANCE



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY [†]	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
EFB FLOODED JIS															
601230	N55	24	12	520	80	45	238	128	200	227	C	15.75	JIS PENCIL	-	EFB, LM
606200	T110	24	12	780	155	86	303	173	200	225	C	22.20	STD	-	EFB, LM
606201	Q85	24	12	650	116	60	232	173	200	225	C	17.30	STD	-	EFB, LM
606202	S95	24	12	760	127	68	260	173	200	225	C	19.40	STD	-	EFB, LM
EFB DIN[#]															
606203	DIN65LMF EFB	24	12	590	100	70	278	175	175	175	C	22.00	STD	SIDE/END	CH, CV, EFB, EL, FA, MF, SL
606204	DIN75LMF EFB	24	12	700	135	75	135	175	175	175	C	25.94	STD	SIDE/END	CH, CV, EFB, EL, FA, MF, SL

[†] Conditions apply. Refer to individual warranty statements attached to each battery. *Compared with conventional flooded batteries.
[#] Only available in CENTURY brand.



Hybrid Auxiliary

Yuasa Hybrid Auxiliary batteries provide enhanced cycling capability and the power required to run the vehicle's on-board electrics and computer management system. The advanced design features improve cycling ability and enable the battery to recharge faster.

- » Deep discharge capability
- » Low internal resistance and low self-discharge
- » Enhanced cycling ability to run vehicles electrics and computer management system



FOR HYBRID VEHICLES



ABSORBED GLASS MAT TECHNOLOGY



SUPERIOR CYCLING PERFORMANCE



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY [†]	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
HYBRID VEHICLE (AUXILIARY BATTERY)															
601226	S34B20R	18	12	270	47	27	192	123	195	225	D	10.50	JIS PENCIL	-	AGM, CH, CV, FA, MF, PV
601229	34B17L	18	12	280	27	27	167	127	215	235	C	10.20	JIS PENCIL	-	AGM, CH, CV, FA, MF, PV
601227	S46B24R	18	12	325	45	45	238	128	200	227	D	12.90	STD	-	AGM, CH, CV, FA, MF, PV
601228	S46A24L	18	12	225	45	45	238	128	170	195	C	12.90	STD	-	AGM, CH, CV, FA, MF, PV
618106	S55D23R [#]	18	12	550	85	50	220	170	195	220	D	15.10	JIS PENCIL	-	AGM, CH, CV, FA, MF, PV

[†] Conditions apply. Refer to individual warranty statements attached to each battery.
[#] Only available in CENTURY brand.



CAR & PASSENGER VEHICLE

YUASA'S CAR AND PASSENGER VEHICLE BATTERIES ARE THE ULTIMATE IN BATTERY PERFORMANCE AND TECHNOLOGY.

Featuring specialist internal components, unique design features and industry leading technologies to combat the causes of battery failure and deliver reliability, longer life and superior performance.

A comprehensive selection of maintenance free and maintainable batteries delivering more than just superior starting power. Yuasa's car and passenger vehicle batteries deliver exceptional corrosion resistance, longer life and the performance to handle the demands of today's modern vehicles.



Ultra Hi Performance

Yuasa Ultra Hi Performance batteries are the ultimate in battery performance and maintenance free technology. Featuring specialist internal components, unique design features and industry leading technology to combat the causes of battery failure and deliver reliability, longer life and superior performance.

- » Superior starting power
- » Enhanced active material reduces water loss
- » Platelock™ technology providing shock and vibration resistance#



ITEM ID	BATTERY TYPE	WARRANTY †	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	DIMENSIONS (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
ULTRA HI PERFORMANCE															
605206	57MF	36	12	530	86	52	235	174	184	205	D	13.70	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
605205	57EFMF	36	12	530	86	52	231	171	184	205	D	13.70	STD	-	CH, CI, FA, MF, MR, PL, VR
605208	58MF	36	12	530	86	52	235	174	184	205	C	13.70	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
605207	58EBMF	36	12	530	86	52	231	171	184	205	C	13.70	DF	-	CH, CI, FA, MF, MR, PL, VR
605203	55D23LMF	36	12	500	100	60	232	173	202	225	C	15.20	STD	-	CH, CI, CV, FA, MF, MR, PL, VR
605204	55D23RMF	36	12	500	100	60	232	173	202	225	D	15.20	STD	-	CH, CI, CV, FA, MF, MR, PL, VR
605200	48LMF	36	12	500	90	55	247	180	180	225	C	13.80	STD	SIDE/END	CH, CI, CV, EL, FA, MF, SL
605201	48RMF	36	12	500	90	45	247	180	180	225	D	13.80	STD	SIDE/END	CH, CI, CV, EL, FA, MF, SL
605202	50D20LMF	36	12	450	75	60	202	173	200	225	C	13.00	STD	SIDE	CH, CI, FA, MF, MR, PL, SL, VR
605209	75SMF	36	12	550	113	60	230	179	180	205	H	14.80	STD + FRONT	SIDE	CH, CI, CV, FA, MF, SL
605210	N65DMF	36	12	750	140	80	305	190	170	190	D	18.20	STD	SIDE	CH, CI, CV, FA, MF, SL
605216	NS60LMF	36	12	430	76	45	235	129	199	219	C	11.90	JIS PENCIL	-	CH, CI, FA, MF, MR, PL, VR
605217	NS60LSMF	36	12	430	76	45	235	129	199	219	C	11.90	STD	-	CH, CI, FA, MF, MR, PL, VR
605218	NS60MF	36	12	430	76	45	235	129	199	219	D	11.90	JIS PENCIL	-	CH, CI, FA, MF, MR, PL, VR
605219	NS60SMF	36	12	430	76	45	235	129	199	219	D	11.90	STD	-	CH, CI, FA, MF, MR, PL, VR
605211	NS40KLMF	36	12	330	63	38	195	136	200	220	C	10.00	JIS PENCIL	SIDE	CH, CI, FA, MF, MR, PL, SL, VR
605212	NS40ZLMF	36	12	330	63	38	195	126	200	220	C	10.00	JIS PENCIL	-	CH, CI, FA, MF, MR, PL, VR
605213	NS40ZLSMF	36	12	330	63	38	195	126	200	220	C	10.00	STD	-	CH, CI, FA, MF, MR, PL, VR
605214	NS40ZMF	36	12	330	63	38	195	126	200	220	D	10.00	JIS PENCIL	-	CH, CI, FA, MF, MR, PL, VR
605215	NS40ZSMF	36	12	330	63	38	195	126	200	220	D	10.00	STD	-	CH, CI, FA, MF, MR, PL, VR

† Conditions apply. Refer to individual warranty statements attached to each battery. #Selected items only.





Ultra Hi Performance DIN

Yuasa Ultra Hi Performance DIN batteries have been designed and manufactured to deliver longer life and superior performance while meeting the fitment requirements of European and Imported vehicles.

- » Superior starting power
- » Specialist plate design to reduce self-discharge and water loss
- » Superior grid strength delivering improved corrosion resistance



FOR CARS WITH MULTIPLE ACCESSORIES



SUPERIOR STARTING POWER & PERFORMANCE



DESIGNED FOR NEW ZEALAND CONDITIONS



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY †	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
ULTRA Hi PERFORMANCE DIN															
615200	DIN44MF	36	12	420	71	43	208	175	175	175	C	11.50	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615214	DIN53ZLXMF	36	12	600	105	60	242	175	175	175	C	14.40	STD	SIDE/END	CH, CI, EL, FA, MF, MR, SL
615201	DIN53ZLMF	36	12	500	94	54	245	175	175	175	C	13.50	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615202	DIN53ZRMF	36	12	500	94	54	245	175	175	175	D	13.50	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615203	DIN55FMF	36	12	500	94	54	245	175	175	175	C	13.50	LUG	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615204	DIN55ZLAGMF	36	12	500	95	55	242	174	190	190	C	14.00	STD	SIDE/END	CH, CI, CV, EL, FA, MF, SL
615205	DIN65ZLMF	36	12	690	110	63	277	175	175	175	C	15.50	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615206	DIN66ZLAGMF	36	12	710	140	78	277	174	190	190	C	17.40	STD	SIDE/END	CH, CI, CV, EL, FA, MF, SL
615207	DIN66ZRAGMF	36	12	710	140	78	277	174	190	190	C	17.40	STD	SIDE/END	CH, CI, CV, EL, FA, MF, SL
615208	DIN75ZLMF	36	12	830	170	95	313	175	175	190	C	20.70	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615209	DIN75ZRMF	36	12	790	160	90	313	175	175	190	D	20.20	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615211	DIN74ZLMF	36	12	730	135	80	313	175	175	175	C	18.00	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615210	DIN85ZLMF	36	12	780	150	85	354	175	175	175	C	20.00	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615212	DIN88ZLMF	36	12	860	170	100	353	175	175	190	C	23.00	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
615213	DIN110ZLMF	36	12	920	195	110	395	175	175	190	C	27.00	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR

† Conditions apply. Refer to individual warranty statements attached to each battery.



Hi Performance

Yuasa Hi Performance batteries feature hard wearing internal components to reduce corrosion and enhance vibration resistance, while producing dependable power and performance.

- » Dependable starting power
- » Enhanced active material reduces water loss
- » Improved internal components for superior corrosion resistance



FOR CARS WITH STANDARD ACCESSORIES



DEPENDABLE STARTING POWER & PERFORMANCE



DESIGNED FOR NEW ZEALAND CONDITIONS



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY †	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
Hi PERFORMANCE															
601240	57MFHP	24	12	510	79	47	240	174	180	205	D	13.20	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
601241	58MFHP	24	12	510	79	47	240	174	180	205	C	13.20	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
601239	55D23LMFHP	24	12	500	100	60	232	173	204	225	C	15.20	STD	-	CH, CI, CV, FA, MF, PL, VR
601209	75D26LMF	24	12	560	101	60	257	173	201	222	C	16.80	STD	SIDE/END	CH, CI, CV, EL, FA, MF, MR, SL
601210	75D26RMF	24	12	560	101	60	257	173	201	222	D	16.80	STD	SIDE/END	CH, CI, CV, EL, FA, MF, MR, SL
601221	45B24RMF	24	12	400	71	45	236	128	201	223	D	12.03	JIS PENCIL	-	CH, CI, CV, FA, MF, MR
601222	45B24LMF	24	12	400	71	45	236	128	201	223	C	12.03	JIS PENCIL	-	CH, CI, CV, FA, MF, MR
601223	45B24RSMF	24	12	400	71	45	236	128	201	223	D	12.03	STD	-	CH, CI, CV, FA, MF, MR
601224	45B24LSMF	24	12	400	71	45	236	128	201	223	C	12.03	STD	-	CH, CI, CV, FA, MF, MR
601205	40B20LMF	24	12	310	47	31	195	127	201	223	C	9.65	JIS PENCIL	-	CH, CI, CV, FA, MF, MR
601206	40B20LSMF	24	12	310	47	31	195	127	201	223	C	9.65	STD	-	CH, CI, CV, FA, MF, MR
601207	40B20RMF	24	12	310	47	31	195	127	201	223	D	9.65	JIS PENCIL	-	CH, CI, CV, FA, MF, MR
601208	40B20RSMF	24	12	310	47	31	195	127	201	223	D	9.65	STD	-	CH, CI, CV, FA, MF, MR
601235	NS60LMFHP	24	12	400	70	42	238	129	201	225	C	11.50	JIS PENCIL	-	CH, CI, FA, MF, MR, PL, VR
601236	NS60MFHP	24	12	400	70	42	238	129	201	225	D	11.50	JIS PENCIL	-	CH, CI, FA, MF, MR, PL, VR
601237	NS60LSMFHP	24	12	400	70	42	238	129	201	225	C	11.50	STD	-	CH, CI, FA, MF, MR, PL, VR
601238	NS60SMFHP	24	12	400	70	42	238	129	201	225	D	11.50	STD	-	CH, CI, FA, MF, MR, PL, VR
601231	NS40ZLMFHP	24	12	330	57	34	187	127	202	226	C	8.90	JIS PENCIL	-	CH, CI, FA, MF, MR, PL, VR
601232	NS40ZMFHP	24	12	330	57	34	187	127	202	226	D	8.90	JIS PENCIL	-	CH, CI, FA, MF, MR, PL, VR
601233	NS40ZLSMFHP	24	12	330	57	34	187	127	202	226	C	8.90	STD	-	CH, CI, FA, MF, MR, PL, VR
601234	NS40ZSMFHP	24	12	330	57	34	187	127	202	226	D	8.90	STD	-	CH, CI, FA, MF, MR, PL, VR

† Conditions apply. Refer to individual warranty statements attached to each battery.



Hi Performance DIN

Yuasa Hi Performance DIN batteries have been designed and manufactured to meet the fitment requirements of European and imported vehicles.

- » Calcium technology for longer service life
- » Specialist plate design to reduce self-discharge and water loss
- » State of Charge Indicator for on the spot diagnosis of battery condition



FOR CARS WITH STANDARD ACCESSORIES



DEPENDABLE STARTING POWER & PERFORMANCE



DESIGNED FOR NEW ZEALAND CONDITIONS



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY [†]	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
Hi PERFORMANCE DIN															
611200	DIN53LMFHP	24	12	470	86	52	245	175	175	175	C	13.00	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
611201	DIN65LMFHP	24	12	560	102	61	277	175	175	175	C	15.00	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
611202	DIN75LMFHP	24	12	690	133	80	313	175	175	175	C	17.50	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR
611203	DIN85LMFHP	24	12	710	141	84	354	175	175	175	C	19.50	STD	SIDE/END	CH, CI, EL, FA, MF, MR, PL, SL, VR

[†] Conditions apply. Refer to individual warranty statements attached to each battery.



Hi Performance Maintainable

Yuasa Hi Performance maintainable batteries feature a mix of both Expanded and Hybrid grid designs, using Calcium and Antimonial technologies. Hard wearing components reduce corrosion, limit gassing and minimise water loss, ensuring dependable power when it's needed the most.

- » Dependable starting power
- » Specialist plate design to reduce self-discharge and water loss
- » Maintainable design for maximum control over battery life



FOR CARS WITH STANDARD ACCESSORIES



DEPENDABLE STARTING POWER & PERFORMANCE



DESIGNED FOR NEW ZEALAND CONDITIONS



MAINTAINABLE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY [†]	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
Hi PERFORMANCE MAINTAINABLE															
601204	03	24	6	270	80	65	184	167	163	186	A	10.50	STD	SIDE	LM, MR, SL
601200	41	24	12	350	50	35	230	133	180	199	D	10.73	STD	END	EL, LM
601201	43	24	12	350	50	35	230	133	180	199	C	10.73	DF	END	EL, LM
601202	46	24	12	410	75	46	237	173	184	205	D	14.72	STD	SIDE/END	EL, LM, MR, SL
601203	47	24	12	410	75	46	237	173	184	205	D	14.72	DF	SIDE/END	EL, LM, MR, SL
601217	NS40Z	24	12	330	55	31	196	128	201	223	D	9.65	JIS PENCIL	-	LM, MR
601218	NS40ZL	24	12	330	55	31	196	128	201	223	C	9.65	JIS PENCIL	-	LM, MR
601219	NS40ZLS	24	12	330	55	31	196	128	201	223	C	9.65	STD	-	LM, MR
601220	NS40ZS	24	12	330	55	31	196	128	201	223	D	9.65	STD	-	LM, MR

[†] Conditions apply. Refer to individual warranty statements attached to each battery.



Power Series

Yuasa Power Series batteries are designed to meet the performance and fitment requirements of vehicles with low electrical loads and ideal for older vehicles with low voltage alternators.

- » Reliable starting power
- » Maintainable design for maximum control over battery life
- » For cars with limited accessories



FOR CARS WITH LIMITED ACCESSORIES



RELIABLE STARTING POWER & PERFORMANCE



MAINTAINABLE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY [†]	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
POWER SERIES															
600211	G57	12	12	420	105	60	237	173	184	213	D	16.06	STD	SIDE/END	CH, EL, LM, MR, SL
600212	G58	12	12	420	105	60	237	173	184	213	C	16.06	DF	SIDE/END	CH, EL, LM, MR, SL
600205	G46	12	12	350	75	46	237	173	205	205	D	14.72	STD	SIDE	CH, LM, MR, SL
600206	G47	12	12	350	75	46	237	173	180	215	C	14.72	DF	SIDE	CH, LM, MR, SL
600203	G41	12	12	260	50	35	230	133	180	205	D	10.73	STD	END	EL, LM
600204	G43	12	12	260	50	35	230	133	180	215	C	10.73	DF	END	EL, LM
600207	GNS40Z	12	12	230	45	31	196	128	201	223	D	9.65	JIS PENCIL	-	LM, MR
600208	GNS40ZL	12	12	230	45	31	196	128	201	223	C	9.65	JIS PENCIL	-	LM, MR
600209	GNS40ZLS	12	12	230	45	31	196	128	201	223	C	9.65	STD	-	LM, MR
600210	GNS40ZS	12	12	230	45	31	196	128	201	223	D	9.65	STD	-	LM, MR

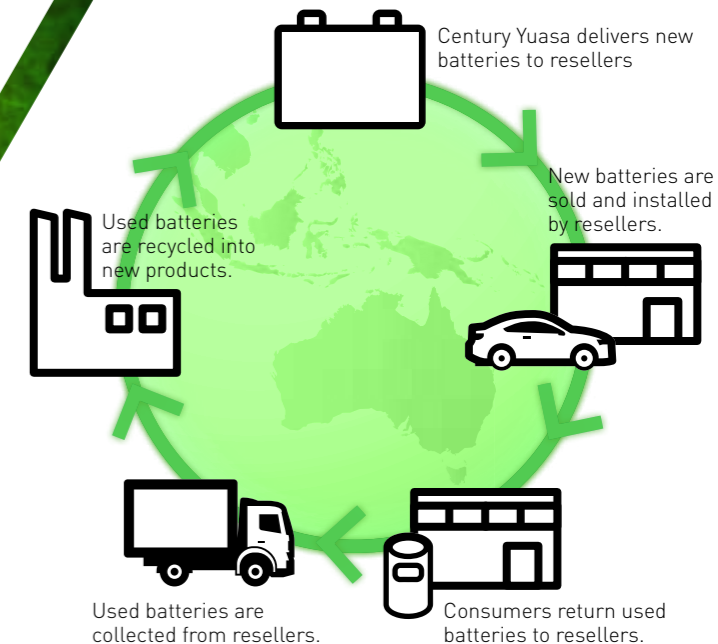
[†] Conditions apply. Refer to individual warranty statements attached to each battery.



Battery Recycling

At Yuasa we are dedicated to caring for the environment and believe that scrap batteries should be recycled and disposed of responsibly. Our Used Lead Acid Battery (ULAB) program and commitment to environmental sustainability has seen Century Yuasa achieve SAI Global ISO14001 environmental accreditation, an international standard outlining the requirements for a structured approach to environmental protection and responsibility.

Our recycling process



Why recycle?

98% of a lead acid battery can be reclaimed through recycling. The lead, plastic and acid components are re-processed and manufactured into an array of other products including guide posts, cabling and detergents.

1. SULPHURIC ACID

Sulphuric acid is converted to sodium sulfate to be used in the manufacture of glass, textiles, laundry detergents and fertilisers.

2. LEAD

Battery plates, inter cell connectors and posts made from lead are melted down in a smelter furnace. The molten lead is then formed into ingots for re-use.

3. POLYPROPYLENE

Battery containers and lids are chipped and sent for recycling into rubbish bins, plant pots etc.

The Benefits

- ➔ Help build a cleaner New Zealand for future generations
- ➔ Prevent harm to humans and wildlife
- ➔ Protect the environment
- ➔ Conserve natural resources
- ➔ Reduce the amount of waste to landfill

Recycle your used battery now at one of our registered Battery Recycling Centres around New Zealand. Visit yuasabatterieso.nz to find your nearest Battery Recycling Centre.





SUV, 4X4 & LIGHT COMMERCIAL

WHETHER VENTURING INTO THE HIGH COUNTRY, TRAVERSING SAND DUNES OR ON AN ALPINE ADVENTURE, IT'S IMPORTANT TO HAVE THE RIGHT EQUIPMENT, AND THAT INCLUDES THE BATTERY.

Excessive under bonnet temperatures, continuous vibration, repeated impact from rough uneven roads and the demands of power hungry accessories, place extreme demands on a battery's internal components. Yuasa's SUV, 4x4 & Light Commercial batteries are designed and built tough using robust internal components and advanced manufacturing processes to withstand the challenges of New Zealand's extreme conditions.



Ultra Hi Performance

Yuasa Ultra Hi Performance batteries are designed for more than just starting power, manufactured with thicker and more durable components that are able to sustain constant current loads.

- » Calcium technology for superior starting power
- » Enhanced active material reduces water loss
- » Superior strength and durability



FOR SUV, 4x4 & LIGHT COMMERCIAL VEHICLES



SUPERIOR STARTING POWER & PERFORMANCE



PLATELOCK™ VIBRATION RESISTANCE



DESIGNED FOR NEW ZEALAND CONDITIONS



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	DIMENSIONS (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
ULTRA HI PERFORMANCE															
625208	N70ZZLMF	24	12	730	165	90	304	172	202	225	C	21.00	STD	SIDE	CH, CI, CV, FA, MF, MR, PL, SL
625209	N70ZZMF	24	12	730	165	90	304	172	202	225	D	21.00	STD	SIDE	CH, CI, CV, FA, MF, MR, PL, SL
625206	N70ZLMF	24	12	660	145	80	304	172	202	225	C	20.00	STD	-	CH, CI, FA, MF, MR, PL
625207	N70ZMF	24	12	660	145	80	304	172	202	225	D	20.00	STD	-	CH, CI, FA, MF, MR, PL
625212	NS70ZLMF	24	12	700	140	80	260	174	202	225	C	18.50	STD	SIDE	CH, CI, FA, MF, MR, PL, SL
625213	NS70ZMF	24	12	700	140	80	260	174	202	225	D	18.50	STD	SIDE	CH, CI, FA, MF, MR, PL, SL
625210	NS70LMF	24	12	600	135	75	260	174	202	225	C	17.90	STD	SIDE	CH, CI, FA, MF, MR, PL, SL
625211	NS70MF	24	12	600	135	75	260	174	202	225	D	17.90	STD	SIDE	CH, CI, FA, MF, MR, PL, SL

* Conditions apply. Refer to individual warranty statements attached to each battery.



Hi Performance

Yuasa Hi Performance batteries feature hard wearing internal components to reduce corrosion and enhance vibration resistance, while producing dependable power and performance.

- » Calcium technology for dependable starting power
- » Specialist plate design to reduce self-discharge and water loss
- » Platelock™ technology to combat vibration and impact



FOR SUV, 4x4 & LIGHT COMMERCIAL VEHICLES



DEPENDABLE STARTING POWER & PERFORMANCE



DESIGNED FOR NEW ZEALAND CONDITIONS



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
Hi PERFORMANCE															
621219	NS70LMFHP	24	12	580	130	70	260	174	202	225	C	17.40	STD	-	CH, CI, CV, FA, MF, MR, PL
621220	NS70MFHP	24	12	580	130	70	260	174	202	225	D	17.40	STD	-	CH, CI, CV, FA, MF, MR, PL
621221	N70ZZLMFHP	24	12	640	135	75	304	172	202	225	C	19.50	STD	-	CH, CI, CV, FA, MF, MR, PL
621222	N70ZZMFHP	24	12	640	135	75	304	172	202	225	D	19.50	STD	-	CH, CI, CV, FA, MF, MR, PL
621223	86MFHP	24	12	850	165	95	330	173	217	239	D	25.00	STD	-	CH, CI, FA, MF, MR, PL

* Conditions apply. Refer to individual warranty statements attached to each battery.



Hi Performance Maintainable

Yuasa Hi Performance maintainable batteries feature hard wearing components to reduce corrosion, limit gassing and minimise water loss, ensuring dependable power when it's needed the most. These batteries utilise a maintainable design to help maximise battery life under harsh conditions.

- » Calcium technology for dependable starting power
- » Specialist plate design to reduce self-discharge and water loss
- » Semi-cycling performance for on-board accessories
- » Maintainable design for maximum control over battery life



FOR SUV, 4x4 & LIGHT COMMERCIAL VEHICLES



DEPENDABLE STARTING POWER & PERFORMANCE



PLATELOCK™ VIBRATION RESISTANCE



DESIGNED FOR NEW ZEALAND CONDITIONS



MAINTAINABLE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
Hi PERFORMANCE MAINTAINABLE															
621213	NS70	24	12	580	120	70	260	174	202	225	D	17.90	STD	SIDE	CH, FA, LM, MR, SL
621214	NS70L	24	12	580	120	70	260	174	202	225	C	17.90	STD	SIDE	CH, FA, LM, MR, SL
621211	N70Z	24	12	620	130	75	304	172	202	225	D	19.50	STD	-	CH, FA, LM, MR
621212	N70ZL	24	12	620	130	75	304	172	202	225	C	19.50	STD	-	CH, FA, LM, MR
622200	HN70ZZX	24	12	730	180	95	305	171	202	225	D	23.90	STD	SIDE	CH, CI, GM, LM, MIA, MR, PL, SL, VR
622201	HN70ZZLX	24	12	730	180	95	305	171	202	225	C	23.90	STD	SIDE	CH, CI, GM, LM, MIA, MR, PL, SL, VR

* Conditions apply. Refer to individual warranty statements attached to each battery.



TRUCK, BUS & HEAVY EQUIPMENT

YUASA'S TRUCK, BUS AND HEAVY EQUIPMENT BATTERIES REPRESENT THE LATEST IN PERFORMANCE AND RELIABILITY FOR HAULAGE AND HEAVY COMMERCIAL VEHICLES. THEY DELIVER WHAT DRIVERS AND FLEET MANAGERS REALLY WANT – LONGER LIFE WITH LESS DOWN TIME.

Delivering more than just superior starting power, Yuasa's Truck, Bus and Heavy Equipment batteries can sustain constant current loads over extended periods, to run on-board accessories for longer.



Heavy Duty AGM

Yuasa Heavy Duty AGM batteries are a range of premium batteries incorporating Absorbed Glass Mat (AGM) technology and robust positive plates that combine to deliver superior starting power, extreme cycle life and enhanced discharge capability.

- » Absorbed Glass Mat separators for enhanced endurance and vibration resistance
- » Superior strength and durability for commercial conditions
- » Specialist plate design to reduce self-discharge and water loss
- » Semi-cycling performance for on-board accessories[#]



FOR SEVERE SERVICE APPLICATIONS



SUPERIOR PERFORMANCE & DURABILITY



ABSORBED GLASS MAT TECHNOLOGY



BUILT TO COMBAT VIBRATION



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY [†]	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	 (all measurements in mm)				POLARITY	WEIGHT	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
HEAVY DUTY AGM															
628201	AXD31-950	24	12	950	200	100	332	172	210	231	D	27.40	TWIN	-	AGM, CH, CV, FA, MF, PV
628202	AXD31-950S	24	12	950	200	100	332	172	210	231	H	27.40	TH	-	AGM, CH, CV, FA, MF, PV
618200	AXD26R	24	12	750	140	75	260	172	200	220	D	19.70	STD	SIDE/END	AGM, EL, FA, MF, SL

[†] Conditions apply. Refer to individual warranty statements attached to each battery. [#] Selected items only.



Heavy Duty

Yuasa Heavy Duty batteries are built tough for New Zealand's harsh working conditions. Incorporating industry leading design features, these maintenance free batteries provide exceptional performance & longer life in heavy duty applications.

- » Calcium technology for reduced water loss and lower self-discharge
- » Improved strength and durability for commercial conditions
- » Platelock™ technology to combat vibration and damage from rough uneven roads

FOR HEAVY EQUIPMENT & COMMERCIAL VEHICLES

DEPENDABLE PERFORMANCE & DURABILITY

BUILT TO COMBAT VIBRATION

DESIGNED FOR NEW ZEALAND CONDITIONS

MAINTENANCE FREE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
HEAVY DUTY															
625200	31-1000MF	24	12	1000	200	100	330	172	218	242	H	24.80	STD	-	CH, CI, CV, FA, MF, MR, PL
625201	31-800MF	24	12	800	180	90	330	172	218	242	H	23.20	STD	-	CH, CI, CV, FA, MF, MR, PL
625202	N100MF	24	12	730	180	100	410	175	212	235	D	25.10	STD	-	CH, CI, FA, MF, MR, PL, VR
625214	N100LMF	24	12	730	180	100	405	175	212	235	C	25.10	STD	-	CH, CI, FA, MF, MR, PL, VR
625203	N120MF	24	12	850	235	125	505	183	212	235	F	32.10	STD	-	CH, CI, FA, MF, MR, PL, VR
625204	N150MF	24	12	1000	300	155	508	222	213	236	F	38.40	STD	-	CH, CI, FA, MF, MR, PL, VR
625205	N200MF	24	12	1150	400	200	522	279	220	244	F	51.50	STD	-	CH, CI, FA, MF, MR, PL, VR
626205	DIN135LMF	24	12	900	250	135	512	174	183	207	E	34.00	STD	SIDE/END	CH, CI, EL, MF, PL, SL, VR

* Conditions apply. Refer to individual warranty statements attached to each battery.



Heavy Duty Maintainable

Yuasa Heavy Duty maintainable batteries are ideal for short haul/hiab/tail lift applications. Made with thicker battery plates for increased durability and battery life, these batteries feature a maintainable design for maximum control over battery life.

- » Reliable starting power
- » Improved strength and durability for commercial conditions
- » Platelock™ technology to combat vibration and damage from rough uneven roads#

FOR HEAVY EQUIPMENT & COMMERCIAL VEHICLES

DEPENDABLE PERFORMANCE & DURABILITY

BUILT TO COMBAT VIBRATION

DESIGNED FOR NEW ZEALAND CONDITIONS

MAINTAINABLE DESIGN

ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	Dimensions (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
HEAVY DUTY MAINTAINABLE															
621201	26	24	6	850	294	150	304	171	201	222	A	21.35	STD	-	CH, LM, PL
621200	23	24	6	850	245	120	259	172	220	220	A	18.50	STD	-	CH, LM
621204	86Z	24	12	680	180	92	348	170	210	238	C	25.60	STD	SIDE	CH, LM, MR, PL, SL
621205	87Z	24	12	680	180	92	348	170	210	238	D	25.60	STD	SIDE	CH, LM, MR, PL, SL
621202	89	24	12	800	210	125	342	172	262	286	C	30.70	STD	SIDE	CH, CV, LM, PL, SL
621206	89B	24	12	800	210	125	342	172	262	286	D	30.70	STD	SIDE	CH, CV, LM, PL, SL
621203	94	24	12	890	255	135	519	206	181	203	E	35.60	STD	-	CH, CV, LM, PL
621207	N100	24	12	750	180	100	407	175	210	231	D	25.00	STD	-	CV, GM, LM, PL
621208	N120	24	12	850	230	120	506	183	210	240	F	35.50	STD	-	CV, GM, LM, PL
621209	N150	24	12	1000	300	150	506	220	210	240	F	41.90	STD	-	CV, GM, LM, PL
621210	N200	24	12	1200	390	200	519	277	218	248	F	56.90	STD	-	CV, GM, LM, PL
621218	N200S	24	12	1200	505	225	518	276	216	242	E	59.90	STD	-	CV, LM, PL
626203	DIN92	24	12	800	170	88	354	174	190	190	C	21.10	STD	SIDE/END	CH, CV, EL, FA, LM, SL
626201	DIN150	24	12	950	290	143	512	218	210	210	E	34.90	STD	SIDE/END	CH, LM, SL

* Conditions apply. Refer to individual warranty statements attached to each battery. #Selected items only.



MARINE

THE ULTIMATE MARINE BATTERIES, PERFECTLY ADAPTED TO LIFE ON THE WATER. SPECIFICALLY DESIGNED TO HANDLE THE HARSH AND DEMANDING EFFECTS OF VIBRATION WHILE DELIVERING RELIABLE STARTING POWER AND PERFORMANCE.

The Yuasa Seafarer range includes a comprehensive selection of superior quality marine batteries, incorporating advanced design features and specialist hard-wearing components for recreational or industrial marine applications.

Yuasa Seafarer batteries are equipped to handle the rigours of wave pounding, engine vibration and trailer transport while delivering reliable starting power and performance.



Seafarer

The ultimate in marine battery performance, incorporating some of the toughest internal components in the industry.

- » Superior starting power
- » Thicker plates for improved strength and durability in marine applications
- » Dual purpose – starting and semi-cycling capabilities for on-board accessories*
- » Designed to combat the effects of wave pounding, engine vibration and damage from trailer transportation



DEPENDABLE PERFORMANCE & DURABILITY



PLATELOCK™ COMBATS WAVE POUNDING & VIBRATION



MAINTENANCE FREE DESIGN

ITEM ID	BATTERY DESCRIPTION	BATTERY TYPE	CCA -18°C	RC @25°C	MCA @0°C	AH @ 20HR	DIMENSIONS (all measurements in mm)				POLARITY	WEIGHT	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES	STARTS ENGINES	ELECTRICS
							L	W	H	TH							
SEAFARER																	
635203	Seafarer 530	M57MF	530	86	640	52#	230	170	185	209	C	13.70	DF	-	CH, CI, FA, MF, MR, PL	Up to 70hp	Basic electrics
635200	Seafarer 680	M24MF	680	140	850	78	257	172	200	220	D	18.60	TWIN	SIDE	CH, CI, CV, FA, MF, PL, SL	Up to 150hp	Basic electrics
635201	Seafarer 720	M27MF	720	160	900	80	302	172	200	220	D	20.20	TWIN	SIDE	CH, CI, CV, FA, MF, PL, SL	Up to 225hp	Basic + 2 optional electrics
635202	Seafarer 800	M30MF	800	180	1000	90	330	172	218	242	D	23.30	TWIN	-	CH, CI, CV, FA, MF, MR, PL, VR	Up to 275hp	Basic + optional electrics

* Conditions apply. Refer to individual warranty statements attached to each battery. †Low current draw accessories. ‡Not recommended for semi-cycling applications.

On-board Marine Electrics

BASIC ELECTRICS

- » Control instruments
- » Standard lighting
- » Bilge pump
- » UHF/VHF radio

OPTIONAL ELECTRICS

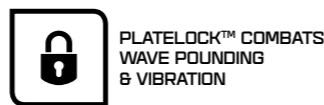
- » Extra lighting
- » GPS
- » Fish finder
- » Auto pilot
- » Trim tabs
- » Fridge



Seafarer Cruiser

A range of heavy duty maintenance free marine batteries designed for use in larger marine vessels.

- » Superior starting power
- » Dependable performance and durability
- » Robust internal components for heavy duty applications
- » Designed to combat the effects of wave pounding and engine vibration



ITEM ID	BATTERY TYPE	CCA -18°C	RC @25°C	MCA @0°C	AH @ 20HR	DIMENSIONS (all measurements in mm)				POLARITY	WEIGHT	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES	STARTS ENGINES	ELECTRICS
						L	W	H	TH							
SEAFARER CRUISER																
635205	N150MMF	1000	300	1220	155*	508	222	213	236	F	38.40	STD	-	CH, CI, FA, MF, MR, PL	350hp+	-
635206	N200MMF	1150	400	1400	200*	522	279	220	244	F	51.50	STD	-	CH, CI, FA, MF, MR, PL	350hp+	-

* Conditions apply. Refer to individual warranty statements attached to each battery. *Not recommended for semi-cycling applications.

Avoid Becoming a Marine Statistic

CENTURY YUASA IS A PROUD SPONSOR AND OFFICIAL BATTERY SUPPLIER TO COASTGUARD NEW ZEALAND, A CHARITY DEDICATED TO SAVING LIVES AT SEA AND EDUCATING NEW ZEALANDERS ON HOW TO STAY SAFE ON THE WATER.

Last year Coastguard New Zealand brought over 7,000 people home safely after an emergency on the water. Maritime Safety Authorities are becoming increasingly concerned over the increasing number of breakdowns on the water caused as a result of flat or incorrect batteries fitted on vessels.

Understanding your marine battery and power requirements is critical if you want to avoid becoming a marine breakdown statistic. When choosing a marine battery it is important to invest in battery that has been specially designed to handle the demands of marine conditions and performance requirements of marine vessels.



Car Batteries VS Marine Batteries

UNLIKE CAR BATTERIES WHICH GENERALLY TRAVEL ON SMOOTH, SEALED ROADS, MARINE BATTERIES MUST BE ABLE TO RESIST VIBRATION FROM WAVE POUNDING AND TRAILER TRANSPORT.

Repeated vibration and wave impact on non-marine batteries can cause damage and cracks to appear in the battery's internal components and outer case. This can cause shedding of active materials, accelerate corrosion, electrolyte leaks and ultimately lead to battery failure.



Car batteries are designed to deliver concentrated bursts of power to crank over and start the engine. The capacity used is replaced by the alternator which charges the battery during the journey. Marine batteries must not only have the starting power to crank over high compression engines but also provide the power needed to run on board accessories.

When choosing a marine battery it is critical to invest in a battery that has been designed and manufactured specifically to handle the extreme demands of marine environments and modern marine electrical systems.





DEEP CYCLE

YUASA DEEP CYCLE BATTERIES ARE MANUFACTURED USING THE TOUGHEST INTERNAL COMPONENTS AND LATEST DESIGN FEATURES TO DELIVER LONG-LASTING, DEPENDABLE DEEP CYCLE POWER.

A comprehensive selection of Flooded and AGM batteries built strong for New Zealand's harsh environment and tough operating conditions. Designed to provide superior deep cycling performance in a diverse range of recreational & commercial applications.



Deep Cycle Plus

The all-round dual purpose Deep Cycle battery with cycling and starting capabilities.

- » Superior cycle life
- » Designed to withstand repeated recharge and discharge cycles
- » Platelock™ technology providing shock and vibration resistance
- » Thicker plates for improved strength and durability



DUAL PURPOSE: CYCLING & STARTING CAPABILITY



SUPERIOR CYCLE LIFE



PLATELOCK™ VIBRATION RESISTANCE



MAINTENANCE FREE DESIGN



RECREATIONAL VEHICLES



MARINE SYSTEMS



CARAVAN & CAMPER TRAILERS



4x4



DUAL BATTERY SYSTEMS

ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	CCA -18°C	RC @ 25°C	AH @ 20HR	DIMENSIONS (all measurements in mm)				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
							L	W	H	TH					
DEEP CYCLE PLUS															
645200	24DCMF	12	12	600	135	82	260	171	202	225	D	18.60	TWIN	SIDE	CH, CI, CV, FA, MF, MR, PL, SL, VR
645201	27DCMF	12	12	680	160	96	304	172	202	225	D	21.20	TWIN	SIDE	CH, CI, CV, FA, MF, MR, PL, SL, VR
645202	30DCMF	12	12	680	200	110	330	173	217	239	D	25.00	TWIN	SIDE	CH, CI, CV, FA, MF, MR, PL, SL, VR

* Conditions apply. Refer to individual warranty statements attached to each battery.





Deep Cycle Flooded

Reliable deep cycling performance in a diverse range of recreational and commercial applications.

- » Designed to withstand repeated recharge and discharge cycles
- » Superior deep discharge capabilities
- » Constructed with thicker plates, specialist antimonial lead alloys and denser active material for long lasting dependable power
- » Ideal for under bonnet use



- RECREATIONAL VEHICLES
- MOBILITY SCOOTERS
- MARINE SYSTEMS
- CARAVAN & CAMPER TRAILERS
- 4x4
- DUAL BATTERY SYSTEMS

ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	AH @ 20HR	[all measurements in mm]				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
					L	W	H	TH					
DEEP CYCLE FLOODED													
641200	12DC	12	6	105	227	172	184	210	A	15.80	STD	-	GM, LM, VR
641204	47DC	12	12	50	235	175	210	225	C	17.10	TWIN	-	CH, CI, GM, LM, MIA, MR, PL, VR
641206	N70DC	12	12	75	305	175	225	225	D	25.10	STD	-	CH, LM, MIA, VR
INDUSTRIAL DEEP CYCLE													
641228	C105	12	6	225	264	181	245	276	A	29.79	W/NUT	-	LM, VR

*Conditions apply. Refer to individual warranty statements attached to each battery.



Deep Cycle AGM

The ultimate in Deep Cycle performance, featuring Absorbed Glass Mat (AGM) technology. Ideal for multi angle and hard to reach fitments.

- » Long cycle life
- » Fast recharging capabilities
- » Designed to withstand repeated recharge and discharge cycles
- » Improved strength, durability and vibration resistance



- RECREATIONAL VEHICLES
- CARAVAN & CAMPER TRAILERS
- MARINE SYSTEMS
- DUAL BATTERY SYSTEMS
- SOLAR SYSTEMS
- MOBILITY SCOOTERS

ITEM ID	BATTERY TYPE	WARRANTY*	VOLTS	AH @ 20HR	[all measurements in mm]				POLARITY	WEIGHT (KG)	TERM. TYPE	HOLD DOWN	SPECIAL FEATURES
					L	W	H	TH					
DEEP CYCLE REC													
648002	REC22-12	12	12	22	181	76	167	167	C	15.30	M6 INSERT	-	AGM, CH, MF, VRLA
648003	REC36-12	12	12	36	196	130	169	169	D	27.00	M6 INSERT	-	AGM, CH, MF, VRLA
648000	REC50-12	12	12	50	197	165	175	175	C	6.40	M6 INSERT	-	AGM, CH, MF, VRLA
648001	REC80-12	12	12	88	259	167	213	213	D	11.20	M6 INSERT	-	AGM, CH, MF, VRLA
DEEP CYCLE AGM*													
648205	C12-55DA	12	12	55	229	138	210	235	D	18.00	M6 INSERT	-	AGM, CV, FA, MF, PV, VR
648203	C12-120DA	12	12	120	328	172	222	222	D	32.00	M8 INSERT	-	AGM, CV, FA, MF, PV, VR
648204	C12-270DA	12	12	270	520	268	220	225	F	74.00	M8 INSERT	-	AGM, CV, FA, MF, PV, VR
648202	LPC6-190	12	6	190	306	168	222	228	A	30.80	M6 INSERT	-	AGM, CH, MF, VR

*Conditions apply. Refer to individual warranty statements attached to each battery.
*Only available in CENTURY brand.



Seasonal Use & Long Term Battery Storage

For batteries used in seasonal applications and stored long term, fully recharge the battery prior to storing. Check the state of charge or voltage regularly. A fully charged Yuasa Deep Cycle battery should have an open circuit voltage (OCV) between 12.6 to 12.8 volts. Should the voltage drop below 12.5V, recharge the battery. It is important to check the battery completely before reconnecting to electrical devices.



TESTING, CHARGING & DIAGNOSTIC EQUIPMENT

YUASA'S BATTERY TESTING, CHARGING & DIAGNOSTIC EQUIPMENT INCLUDES A RANGE OF INNOVATIVE, MARKET LEADING SOLUTIONS DESIGNED TO TAKE THE GUESS WORK OUT OF BATTERY TESTING & MAINTENANCE.



Yuasa YU-FIT

The Yuasa YU-FIT is an aftermarket battery configuration tool that provides a cost effective, easy to use solution. The YU-FIT battery configurator provides a complete battery replacement solution for vehicles that require battery and energy management system configuration.

The YU-FIT will reduce battery replacement costs and customer inconvenience, while enhancing the services provided by aftermarket battery suppliers.

ITEM ID	PRODUCT TYPE	APPLICATION	BATTERY TYPE
YU-FIT BATTERY CONFIGURATOR			
695014	Yu-Fit Tool	Idle Stop Start	AGM, EFB

Testing Equipment

A range of battery testing equipment that features patented Single Load Dynamic Resistance technology to simulate the real-world conditions a battery will face.

The testers will not be misled by common conditions such as high surface voltage, poor cell connections and contact impedance, delivering accurate results test after test.



ITEM ID	PRODUCT TYPE	TESTING RANGE	BATTERY TYPE	SPECIAL FEATURES
DHC TESTERS				
691013	BT 521	40 to 2100 CCA	EFB, AGM, GEL, VRLA, ISS & Auxiliary	Idle Stop Start & Auxiliary battery testing, Integrated Printer
691000	BT 002	200 to 850 CCA	Flooded AGM, GEL	Easy to read LED results

Idle Stop Start & Auxiliary Battery Testing

Chargers & Maintainers

Suitable for charging and maintaining 6 Volt and 12 Volt conventional lead acid batteries including:

- » Sealed Maintenance Free (SMF) flooded calcium batteries
- » Absorbed Glass Mat (AGM) and maintainable flooded batteries
- » Gel electrolyte type batteries

Incorporating a unique and patented rejuvenation technology, these chargers have the ability to recover heavily discharged batteries, and will activate from as low as 3 Volts.



ITEM ID	PRODUCT TYPE	BATTERY TYPE	MIN. START VOLTAGE	CHARGING RANGE
BATTERY CHARGERS & MAINTAINERS				
690012	CC6121.2*	All SMF [Calcium], AGM/Flooded, Gel	3 Volt	6/12 Volt 1.2 Amp 8 Stage smart battery charger and maintainer. Charges batteries rated up to 25Ah*. Maintains batteries rated up to 100Ah.
690010	CC1206	All SMF [Calcium], AGM/Flooded, Gel	3 Volt	12 Volt 6 Amp 9 Stage smart battery charger and maintainer. Charges batteries rated up to 120Ah*. Maintains batteries rated up to 180Ah.
690011	CC1212*	All SMF [Calcium], AGM/Flooded, Gel	3 Volt	12 Volt 12 Amp 9 Stage smart battery charger and maintainer. Charges batteries rated up to 240 Ah*. Maintains batteries rated up to 360Ah.

*Available from February 2018. *Based on 5 to 30% of battery Ah ratings. For optimum charging, 10% of battery Ah rating is recommended for flooded batteries and 20% of battery Ah rating is recommended for AGM & Gel batteries.



Yuasa Batteries Nationwide Warranty

EACH BATTERY SUPPLIED BY CENTURY YUASA COMES WITH A WARRANTY AGAINST DEFECTS FOR THE PERIOD AND APPLICATION, AS DETAILED ON EACH BATTERY.


DANGER EXPLOSIVE GASES
Cigarettes, flame or sparks could cause battery to explode. Always shield eyes and face from battery. Do not charge or use booster cables or adjust post connections without proper instructions and training.

POISON CAUSES SEVERE BURNS
Contains sulphuric acid. Avoid contact with skin, eyes and clothing. In event of accident, flush with water and call a physician immediately.

Nationwide Warranty*
Automotive Ultra Hi Performance 36 Months / 60,000km
Automotive Hi Performance 24 Months / 40,000km
Automotive Extra Heavy Duty 12 Months / 20,000km
Automotive Economy 6 Months / 10,000km
Commercial Ultra Hi Performance 24 Months / 160,000km
Commercial Hi Performance 24 Months / 120,000km
Stop Start / Intermittent Alternator 24 Months / 30,000km
Marine Starting 24 Months
Deep Cycle (Flooded / AGM / GEL) 12 Months

Batteries are warranted against manufacturing faults for the stated period or kilometres, whichever occurs first.
Warranty will not apply in cases of incorrect installation, physical damage, neglect, abuse or where the charging system is not suitable for the battery capacity or type.

*Conditional warranty for Extreme or Cyclic Applications.
12 Months Warranty applies to any application including, but not limited to: Tail Lifts, Hiab Cranes, Swing Lifts, Pumping Equipment, Off Road Use and High Amperage Audio.
6 Months Warranty applies to applications including Taxis, Racing Vehicles or Vessels and Impacting Equipment.
These warranties are in addition to the statutory guarantee provided by the Consumer Guarantees Act when accompanied by valid proof of purchase.


UN 2794
BATTERY, WET FILLED WITH ACID ELECTRIC STORAGE
DO NOT TILT
LT6000

STATE OF CHARGE INDICATOR
● OK ● CHARGE ○ REPLACE

The following table outlines the warranty conditions according to battery type and application:

BATTERY TYPE	CAR & PASSENGER VEHICLE/PRIVATE USE	OFF ROAD 4WD	TAIL LIFTS - HIAB CRANES - SWING LIFTS - PUMPING EQUIPMENT	TAXI - RACING VEHICLES	MARINE	DEEP CYCLE
AUTOMOTIVE - ULTRA HI PERFORMANCE	36 Months or 60,000km*	12 Months	12 Months	6 Months	-	-
AUTOMOTIVE - HI PERFORMANCE	24 Months or 40,000km*	12 Months	12 Months	6 Months	-	-
AUTOMOTIVE - EXTRA HEAVY DUTY	12 Months or 20,000km*	12 Months	12 Months	6 Months	-	-
AUTOMOTIVE - ECONOMY	6 Months or 10,000km*	-	-	6 Months	-	-
COMMERCIAL - ULTRA HI PERFORMANCE	24 Months or 160,000km*	12 Months	12 Months	6 Months	-	-
COMMERCIAL - HI PERFORMANCE	24 Months or 120,000km*	12 Months	12 Months	6 Months	-	-
STOP START / INTERMITTENT ALTERNATOR	24 Months or 30,000km*	12 Months	12 Months	6 Months	-	-
MARINE STARTING	-	-	Void	-	24 Months	-
DEEP CYCLE - FLOODED - AGM	-	-	Void	-	-	12 Months

* Which ever comes first.

Warranty Periods Explained

EACH BATTERY SUPPLIED BY CENTURY YUASA COMES WITH A WARRANTY TOP LABEL, OUTLINING SPECIFIC DETAILS REGARDING WARRANTY PERIODS, HANDLING AND POISONS ADVICE.

Proof of purchase is required. For valid claims, Century Yuasa will replace the product free of charge. The warranty excludes defects from after sale damage, neglect, abuse or incorrect installation. You bear all transportation costs to and from the warranty claim location. The benefits of this warranty are in addition to any other rights and remedies available at law. Our goods come with guarantees that cannot be excluded under New Zealand's Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

This warranty does not cover:

- Flat battery
- Physical damage
- Improper charging
- Improper storage
- Incorrect installation
- Incorrect application
- Normal wear and tear
- Spillage from over filling
- Modifications to the battery
- Failure arising from the addition of fluids other than demineralised or distilled water.

i **NEED ASSISTANCE?** For advice and assistance regarding warranty claims contact Yuasa Batteries on **0800 4 YUASA** or visit yuasabatteries.co.nz

Why do Batteries Fail?

BATTERIES HAVE A FINITE LIFE, DETERMINED BY THE APPLICATION AND THE OPERATING CONDITIONS. BATTERY FAILURE CAN BE ATTRIBUTED TO VARIOUS FACTORS, HOWEVER THE CAUSES OF FAILURE FALL UNDER TWO DISTINCT CATEGORIES: MANUFACTURING AND NON-MANUFACTURING FAULTS.



Manufacturing Faults

» Internal Short Circuit / Dead Cell

This is when contact is made between the positive and negative plates causing a cell to discharge, resulting in a drop in voltage and battery failure.



Non Manufacturing Faults

» Wear and Tear

As a battery ages, grid metal corrodes and active material is lost from the plate. Over time this leads to a point where the battery will no longer be able to start a vehicle. High temperature will accelerate degradation rates.

» Physical Damage

Incorrect fitment, handling and storage often leads to external damage and subsequent battery failure. Examples include over tightening the terminal leads or battery hold down bracket and dropping or knocking the battery casing.

» Incorrect Application

Fitting a smaller, lower capacity battery or a battery designed for another application can lead to early failure.

» Lack of Maintenance

Failing to regularly maintain the battery's state of charge, fluid levels or terminal connections will accelerate battery failure.

» Undercharging

Lead acid batteries must be kept charged at all times. The leading cause of early battery failure comes from undercharging. Prolonged undercharging from short journeys and stop-start driving can cause plate sulphation and acid stratification which reduce battery life.

» Overcharging

Excessive voltage and current is the primary cause of overcharging. This can happen due to a faulty charging system or if the charging output is not compatible with the battery. Temperature can also increase the chances of overcharging, especially when the battery is inadequately ventilated or under bonnet in a constant high temperature environment.

» Over Discharge / Heavy Cyclic Use

The deeper a battery is discharged the shorter its life. Even Deep Cycle batteries should not be discharged below 50% of their capacity before recharging is required. A battery being discharged to 100% of its capacity regularly will cause permanent damage to the internals of the battery.

» Vibration

Batteries installed in applications that are exposed to high levels of vibration from moving equipment, uneven road conditions, insecure fitment or engine harmonics can be detrimental to the life of the battery. It is important to install a battery that is designed to handle these conditions.

» Exposure to High Temperatures

As the temperature increases, so does the chemical reaction inside the battery, leading to an increased rate of corrosion. High temperature increases gassing & water loss in the battery, leading to further self-discharge. Batteries in high temperature environments need to be well ventilated and have temperature compensation to reduce the output as the temperature rises, to avoid overcharging.

Factors Affecting Battery Life

AS BATTERIES OPERATE AND AGE, THEY GRADUALLY LOSE THEIR CAPACITY. THE CONSTANT CHARGE AND DISCHARGE PROCESS EVENTUALLY LEADS TO FAILURE. COMPONENTS CORRODE OVER TIME, ELECTRICAL SHORTS OCCUR AND VIBRATION CAUSES DAMAGE; EVENTUALLY CAUSING FAILURE. OVERCHARGING AND UNDERCHARGING A BATTERY WILL ALSO HAVE A BEARING ON BATTERY LIFE.



Early Warning Signs

Batteries often fail when least expected and can be avoided with regular battery testing. Time plays a key indicator, too often motorists hold off replacing the battery and end up inconvenienced by a roadside breakdown. The average life of a car battery is 42 months, after this the battery is on borrowed time and should be replaced.

Typical warning signs include a slower than normal ability to crank the engine. Other less noticeable factors, such as changed driving patterns and colder/hotter weather will all have an affect on the life of a battery. Regular battery testing can identify suspect batteries before they fail and avoid the inconvenience of a roadside breakdown.



Battery Inspection

Check electrolyte levels of a maintainable battery - fluid below the tops of the separators indicate overcharging or poor maintenance. Overcharging conditions may be due to an incorrect voltage setting, low voltage caused by heat or internal defects, or old age deterioration.

Check the State of Charge Indicator on a sealed maintenance free battery - this gives you a snap shot of the battery's condition and whether the battery needs to be charged or replaced.

- » Is there electrolyte on the top of the battery? This can indicate overcharging or overfilling.
- » Is the battery loose in the carrier? This can cause failure from vibration.
- » Does the battery have signs of damage or mistreatment? This can also cause failure.



Discharged (flat) Batteries

A flat battery should be checked using the State of Charge Indicator on top of the battery, with a voltmeter or hydrometer depending on the type of battery. A low specific gravity reading of 1.240 or less in all cells indicates a discharged battery and it must be charged before further examination and testing can occur. The discharged condition may be due to a problem in the electrical system (slipping alternator belt, faulty regulator or alternator, high resistance due to corrosion). Internal shorts may also be due to manufacturing defects, the ageing process or vibration damage.



Useful Tips

- » Vibration can reduce a battery's life. Always use an approved battery clamp to limit vibration. Yuasa batteries are built tough, using robust internal components to resist damage through abrasion and puncture from vehicle vibration.
- » Many alleged 'dead batteries' are merely flat batteries. Drivers simply leave lights on or can have faulty voltage regulators.
- » Ensure the battery is properly tested before replacing it.
- » It is difficult to know exactly when a battery might fail. A slow starting engine is sometimes an indication.
- » Old batteries can give trouble in colder weather.
- » Equally, if an engine area becomes overheated in very hot temperatures and the battery is under strain from air conditioners it may fail. Regular battery checks are always advised.

Battery Care & Maintenance[^]

REGULAR TESTING AND INSPECTION WILL HELP TO MAXIMISE BATTERY LIFE. A ROUTINE INSPECTION AT LEAST ONCE A MONTH IS RECOMMENDED TO MAINTAIN OPTIMUM PERFORMANCE.

Use the following as a guide when examining the battery:

1. Check the batteries state of charge. Most batteries have a State of Charge Indicator on top of the battery that will give you an on the spot diagnosis of the battery condition. However, a more reliable way to check is with a voltmeter to determine the stabilised voltage or if the vent caps are removable a hydrometer to determine the specific gravity (SG) of the electrolyte. A charged Century Yuasa battery will have a stabilised voltage above 12.5 volts and an SG reading above 1.240.
2. Ensure the battery top is clean and dry, free of dirt and grime. A dirty battery can discharge across the grime on top of the battery casing.
3. Inspect the terminals, screws, clamps and cables for breakage, damage or loose connections. These should be clean, tight and free of corrosion.
4. Apply a thin coating of high temperature grease to posts and cable connections for added protection.
5. Inspect the battery case for obvious signs of physical damage or warpage. This usually indicates the battery has been overheated or has been overcharged.
6. If you have a maintainable battery, it is important to check if the battery has sufficient electrolyte covering the battery plates. If topping up is required, do not overfill as the fluid levels will rise when the battery is fully charged and may overflow. Top up using distilled or demineralised water and never fill with sulphuric acid.
7. When servicing a sealed maintenance free (SMF) battery, check the State of Charge Indicator. This gives you a snap shot of the battery's condition and whether the battery needs to be charged or replaced. If the charge indicator advises 'Replace Battery' it is important that the battery is replaced as the electrolyte levels may be below the plates which can lead to an internal explosion.
8. For batteries used in seasonal applications and stored long term, fully recharge the battery prior to storing. Check the state of charge or voltage regularly. Should the voltage drop below 12.5V, recharge the battery. It is important to check the battery completely before reconnecting to electrical devices.

[^] Always follow manufacturers guidelines



Battery Health & Safety[#]



Battery Acid

- ➔ Battery acid can cause burns. Suitable hand, eye and face protection and protective clothing must be worn.



First Aid

- ➔ For advice, contact the poisons information centre (phone 0800 764 766) or a doctor immediately. If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by poisons information centre or doctor, or at least 15 minutes.
- ➔ If skin or hair contact occurs, remove contaminated clothing and flush skin or hair with running water.



Acid Spill Response

- ➔ Bund and neutralise spills with soda ash or other suitable alkali. Dispose of residue as chemical waste or as per local requirements.



If Electrolyte is Swallowed

- ➔ Do NOT induce vomiting – give a glass of water. Seek immediate medical assistance.



Exploding Battery

- ➔ Batteries generate explosive gases during vehicle operation and when charged separately. Flames, sparks, burning cigarettes or other ignition sources must be kept away at all times. Exercise caution when working with metallic tools or conductors to prevent short circuits and sparks.



Always Wear Eye Protection When Working Near Batteries

- ➔ When charging batteries, work in a well-ventilated area - never in a closed room.
- ➔ Always turn battery charger or ignition off* before disconnecting a battery.

[#] As extracted and interpreted by product manufacturer from the Battery Council International Service Manual, Chapter 2, Thirteenth Edition.
* In some vehicles, ignition may be required to be placed in accessory mode where electronic memory minder is present.

Battery Testing

BATTERY TESTING SHOULD BE CONSIDERED AN INTEGRAL PART OF ANY PERIODIC VEHICLE MAINTENANCE ROUTINE AND SHOULD BE PERFORMED WHETHER OR NOT A STARTING PROBLEM HAS OCCURRED.

Due to the increased electrical demands on the battery, little warning is given before failure. Pre-emptive battery replacement can help eliminate many of the costs and problems associated with a flat or end of life battery.

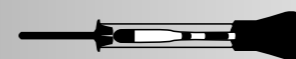
Before testing a battery, it is important that the battery is fully charged. Even a slightly discharged battery can give a false reading and deem the battery faulty when all that is required is a recharge.

There are many different types of testing equipment available. A digital battery tester is the preferred option as they are safe, easy to use and offer a quick diagnosis of the condition of the battery.

Fixed and adjustable load testers, voltmeters, hydrometers and discharge testers can also be used, however correct training is required prior to using any of these testers to prevent personal injury or damage to the vehicle.



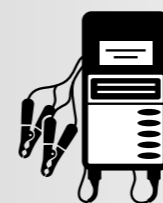
Testing Equipment



Hydrometer

The state-of-charge of a lead acid battery can be determined by the specific gravity (SG) of the electrolyte (its density compared to a reference such as water).

The SG can be measured directly with a hydrometer or indirectly by the stabilised voltage with a voltmeter. Please note the temperature of the acid affects the result.

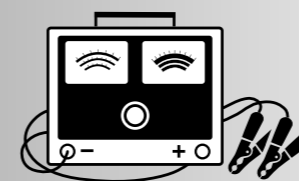


Digital Battery Testers

Microprocessor controlled digital battery testers are easy to use, very safe and can help determine early battery failure.

The tester works by transmitting a small signal through the battery that uses measurements of conductance or resistance (impedance) to indicate battery condition.

Most models provide battery, starting and charging tests. Printer options enable results to be given to the customer.



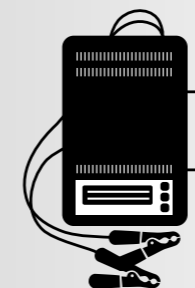
Adjustable Load Testers

Adjustable load testers are a reliable method to determine the starting capacity of a battery as the test applies a real load similar to when cranking the engine. This load however does create a spark risk if leads are connected to corroded or loose terminals.

The standard test is to load the battery to 50% of its CCA rating (Cold Cranking Amperes) for 15 seconds. If the voltage reads above 9.6 volts the battery is OK. For example a battery that has a CCA rating of 600 should be tested at 300CCA for 15 seconds.

The standard interpretation of the result is that if, at the end of the 15 second test, the loaded voltage reading is between 9.6V and 10.6V then the battery is deemed to be good. If the result is under 9.6V the battery is not good and may not crank the engine.

It is always recommended that you check the individual manufacturer's specifications.



Constant Rate Discharge Testers

Discharge testers are a simple method to check the capacity of a battery and are commonly carried out on Deep Cycle batteries.

The tester works by discharging the battery at a pre-set current (Amps) until it drops to a pre-set disconnect voltage. The biggest concern with this type of tester is the time it takes to perform the test.

As an example, if you were testing a 100 Ah (Ampere Hour) battery at 5 Amps, it could take up to 20 hours to complete the test.

Battery Charging

CHARGING A LEAD ACID BATTERY IS THE PROCESS OF REPLACING THE ENERGY REMOVED DURING DISCHARGE, PLUS EXTRA TO COMPENSATE FOR ANY CHARGING INEFFICIENCIES.

THE AMOUNT OF ENERGY NECESSARY FOR COMPLETE RECHARGE DEPENDS ON THE DEPTH OF DISCHARGE, RATE OF RECHARGE AND TEMPERATURE. TYPICALLY 110% - 150% OF THE DISCHARGED AMPERE-HOURS DEPENDING ON BATTERY TYPE MUST BE RETURNED TO THE BATTERY TO ACHIEVE FULL RECHARGE.



Safety first

Before attempting to charge a battery with an external battery charger, it is important to be aware of the safety precautions when charging batteries and follow the instructions outlined by the charger manufacturer.

1. Turn the charger off before attaching, rocking or removing the terminal clamps.
2. Keep open flames and sparks away from the battery.
3. Keep vent caps in place.
4. Charge in well ventilated area.
5. Follow the battery charger manufacturer's instructions to avoid overheating.

Dangerous explosive gases are generated during the charging process that can be ignited by a variety of sources including, sparks, naked flames and static electricity.

It is highly recommended to wear PPE (Personal Protection Equipment) including safety glasses, chemical resistant gloves and overalls.



Selecting the correct charger

Lead acid batteries should be charged in 3 stages; constant current (boost), constant voltage (absorption) and float charge.

When choosing a battery charger, it is important to select a charger that delivers the specified charging voltage and current to suit the battery type.

Flooded, Absorbed Glass Mat (AGM) and Gel battery types require different charging specifications to provide optimum performance and service life.



Charging voltage (for manual chargers)

Monitoring battery voltage during charging is extremely important to reduce the risk of overcharging and to check the progress of the battery during recharge. Always keep inside the parameters outlined in the below table. Failure to do so can result in permanent damage to the battery.

Auxiliary Charge Voltage by Battery Type

Type	Absorption Charging	Float Charging
Flooded (Maintainable / SMF)	14.4 to 14.8V	13.2 to 13.5V*
AGM (Absorbed Glass Mat)	14.6 to 14.8V	13.6 to 13.8V
Gel Electrolyte	14.2 to 14.4V	13.6 to 13.8V

- » The recommended temperature during charging is 25°C. Charging must be paused if the battery reaches 50°C.
- » The above specifications are for 12 volt lead acid batteries. When charging 6 volt batteries, half the voltage specifications provided.
- » In addition to following the battery charging voltage guidelines, selecting the correct charging current (Amps) for the battery size is crucial to provide performance and service life.

*We do not recommend to float charge flooded Sealed Maintenance Free (calcium) batteries due to risk of drying out of the electrolyte.



Charging current (for manual chargers)

The recommended safe charging current is 10% of the battery's 20 hour (Ah) rating. For example if you want to charge a 100Ah battery, the recommended charger current for this battery would be 10 Amps.

Slow charging is the best way to recharge a lead acid battery. Fast charging a lead acid battery by increasing the recommended amperes may cause undue stress and shorten battery life.

Constant Current Charging Method [Amps X Hours]

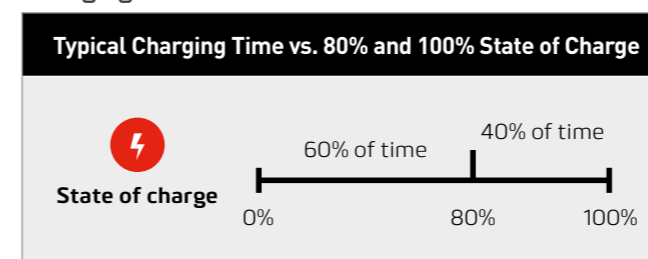
Auxiliary Charging Chart	Product Rated Capacity								
	Rc (minutes)	< 65	65-80	81-105	106-120	121-150	151-170	171-185	
	Ah @ 20hr	31-40	41-50	51-60	61-70	71-80	81-90	91-100	
OCV	SOC %	Charging Current [10% of Ah]	4A	5A	6A	7A	8A	9A	10A
12.42~12.54	70~75%	Charging Time	3 Hours						
12.36~12.48	60~70%		5 Hours						
12.24~12.36	50~60%		6 Hours						
12.12~12.24	40~50%		8 Hours						
12.00~12.12	30~40%		9 Hours						
Below 11.99	<30%		12 Hours						

» Due to efficiency aspects, the charge amount must be more than the discharged amount. This coefficient factor can be between 110% to 150%.

» The deeper the discharge, the higher the coefficient factor.

Note: Charging must be paused when the temperature rises above 50°C

Charging Time

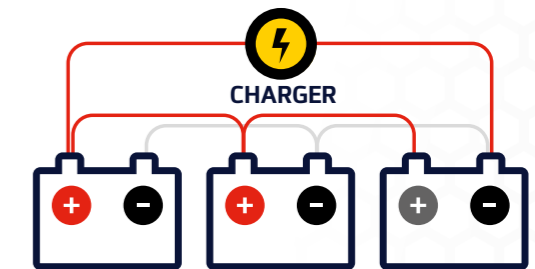


It will take about 60% of the total charging time to charge a lead acid battery to 80%, and the remaining 40% of the time to put the last 20% of charge back into the battery.

The recharging duration is difficult to determine due to variables such as:

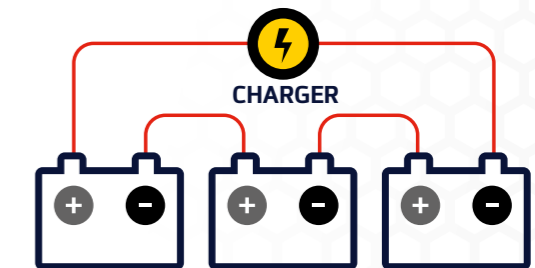
- » Depth of discharge
- » Temperature
- » Size and efficiency of the charger
- » Age and condition of the battery
- » For a guide, refer to the constant current charging method table

Connecting Batteries – Parallel Connection



- » When connecting multiple 12 volt batteries in parallel, you are increasing the capacity of the battery bank while maintaining the voltage. E.g. 3 x 12 volt 60Ah batteries when parallel connected will create a 12 volt 180Ah bank.
- » When connected to a battery charger, the charging current is divided between all the batteries in the bank. E.g. A 15 amp charger connected to 3 batteries will provide up to 5 amps current into each battery.

Connecting Batteries – Series Connection



- » When connecting 12 volt batteries in series, you are increasing the voltage of the battery bank while maintaining the current. E.g. 3 x 12 volt 60Ah batteries when series connected will create a 36 volt 60Ah bank.
- » When charging batteries in series, you must have the correct voltage charger for the number of batteries in the bank. E. If you have 3 x 12 volt batteries in series, you must use a 36 volt charger.



Important Note: Avoid quick charging as this only charges the surface of the battery plates and can increase the chance of overheating, leading to permanent battery damage.

New Battery Installation

BEFORE DISCONNECTING AND RECONNECTING THE BATTERY FROM THE VEHICLE, ENSURE ALL ELECTRICAL EQUIPMENT IS TURNED OFF INCLUDING THE IGNITION SYSTEM, AIR-CONDITIONING, LIGHTS AND RADIO. REMOVE THE KEYS FROM THE IGNITION AND IF THE VEHICLE HAS A FREQUENCY OPERATED BUTTON (FOB) WITH KEYLESS ENTRY, THE FOB SHOULD BE KEPT AT LEAST 2 METERS CLEAR OF THE VEHICLE.

In vehicles that have a computerised electrical system, disconnecting the battery may erase memory from the engine control module (ECM), transmission control module (TCM), clock, radio, security codes and navigation systems. A battery backup can be used to retain memory by plugging a power source into the cigarette lighter socket, OBD (On Board Diagnostic) plug or using jumper leads on the positive terminal lead and earthed to the vehicle body.

If you need to reset the battery management system (BMS), FOB or Idle Stop Start (ISS) system in the case of the warning below, the drivability of the vehicle will be restored after completing at least one drive cycle. The drive cycle is usually defined in your vehicle manual.



WARNING!

- » Always read the battery health and safety procedures before new battery installation. Refer to page 51.
- » Vehicles that have BMS, FOB's and ISS functionality may need to be powered down by disconnecting the battery to reset the system and prevent damage to the vehicle and new battery.
- » Before disconnecting the battery from a vehicle fitted with an ISS system, the battery monitoring sensor will need to be disconnected from the battery earth lead.
- » Battery backups or battery chargers must not be connected directly to the battery sensor terminal as this can cause damage to the sensor. The earth lead should always be earthed to the engine block or vehicle body.

NOTE: When possible always refer to the vehicle's user manual.



Removal of Old Battery

1. Note location of positive terminal and mark polarity on positive cable.
2. Remove the ground (-) terminal first. This precaution is necessary to avoid damage to wiring and the battery by accidentally grounding tools.
3. Remove the second (+) terminal.
4. Undo hold down clamp and remove battery.



Safety precautions for vehicles fitted with air bags

Removal or replacement of battery connections will not unintentionally trigger an air bag system. However removal of battery connections with the ignition remaining "ON" can cause damage to electronic components including the airbag system – always check to ensure the ignition is "OFF" before removing either battery terminal.

Before carrying out any work on the electrical system beyond the battery, the air bag system must be

electrically disabled. Never indiscriminately probe the electrical wiring/connectors in the vicinity of the steering column.

The wiring and harness connectors of most air bag systems are bright yellow; do not interfere with any harness of this colour. As an added safety measure it is recommended that no person should remain seated behind the steering wheel while any electrical service work is carried out on the vehicle.

New battery installation

1. Check battery height to ensure there is sufficient bonnet clearance.
2. Inspect tray and area for corrosion. If necessary, scrub the area with a water and baking soda mix and rinse with water.
3. Corroded steel parts should be dried and painted with acid proof paint. Terminals should be cleaned and brushed.
4. Cable and starter motor connections should be checked and tightened if necessary.
5. If terminal clamps or cables are badly corroded, they should be replaced.
6. Place the new battery in the tray, ensuring it sits level and that terminal posts are positioned same as the battery.
7. Place and tighten the hold downs securely so that the battery cannot move in the tray.
8. Apply a thin coating of high temperature grease to the posts and cable connections.
9. Replace cables, ensuring positive cable is first followed by the negative. Tighten connections. Note: Do not over tighten.
10. Never hammer cable connections onto battery posts, as this can damage the battery posts and cover.





YUASA BATTERY

For more information on the Yuasa range of products and services, contact your nearest Yuasa Sales office on **0800 4 YUASA** or visit yuasabatteries.co.nz