

BATTERY RANGE OVERVIEW



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AUTOMOTIVE & COMMERCIAL



- Highly concentrated energy, providing high capacity and high starting power.
- Better corrosion resistance by use of advanced alloys.
- Better resistance to discharge & better recharge.
- Convenient carrying handles for ease of handling.
- Powerful CCA for Petrol & Diesel engines.
- Suitable for extreme hot & cold operating temperatures.
- AGM & EFB suitable for modern start stop vehicles.
- Complies with OEM specifications.



Performance Plus AGM - High Power Advanced

Features: Approximately 360,000 starts • For high specification including Start/Stop, regenerative braking and energy recovery • Absorbed Glass Mat construction with no free acid • Double lid (Leak/spill proof) VRLA • Integrated flame arrestor • OE Quality, Performance & Specification

Performance: Improved Dynamic Charge Acceptance (DCA) • Increased Cyclic Durability



Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
L	W	T H													
012AGM	12	50	520	207	175	190	15.9	0	L1 DIN AGM	T1	B13	W5	C2	V3	M2
019AGM	12	92	850	354	175	190	27.2	0	L5 DIN AGM	T1	B13	W5	C2	V3	M3
020AGM	12	105	950	394	175	190	29.8	0	L6 DIN AGM	T1	B13	W5	C2	V3	M3
027AGM	12	60	640	242	175	190	17.0	0	L2 DIN AGM	T1	B13	W5	C2	V3	M3
096AGM	12	70	720	278	175	190	21.0	0	L3 DIN AGM	T1	B13	W5	C2	V3	M3
115AGM	12	80	800	315	175	190	24.2	0	L4 DIN AGM	T1	B13	W5	C2	V3	M3
MX5AGM	12	31	475	197	130	178	12	0	U1	T1	N	W5	C2	V2	E2

Performance Plus - EFB

Features: Approximately 270,000 starts • For lower specification Start/Stop vehicles
Sealed tip/tilt double lid - VDA roll over test compliant
High charge acceptance envelope type separators and anti-sulphation technology
Carbon/Lithium plate additives • Integrated flame arrestor • OE Quality, Performance & Specification

Performance: Improved Dynamic Charge Acceptance (DCA) • Increased cyclic durability

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
L	W	T H													
005EFB	12	65	620	232	173	225	16.8	0	D23 JIS EFB (Q55/Q85)	T1	N	W3	C2	V3	M1
014EFB	12	65	620	232	173	225	17.3	1	D23 JIS EFB (Q55R/Q85R)	T1	N	W3	C2	V3	M1
019EFB	12	100	850	353	175	190	24	0	L5 DIN EFB	T1	B13	W3	C2	V3	M1
027EFB	12	60	560	243	175	190	16.6	0	L2 DIN EFB	T1	B13	W3	C2	V3	M1
030EFB	12	72	720	260	173	225	19.3	0	D26 JIS EFB (S85/S95)	T1	N	W3	C2	V3	M1
031EFB	12	72	720	260	173	225	19.5	1	D26 JIS EFB (S85R/S95R)	T1	N	W3	C2	V3	M1
053EFB	12	45	450	238	128	227	13	0	B24 JIS EFB (N55)	T1/T3	N	W3	C2	V3	M1
054EFB	12	40	400	197	128	227	10.7	0	B20 JIS EFB (M42)	T1/T3	N	WS	C2	V3	M1
055EFB	12	40	400	197	128	227	10.7	1	B2- JIS EFB (M42R)	T1/T3	N	W3	C2	V3	M1
096EFB	12	70	700	278	175	190	19.3	0	L3 DIN EFB	T1	B13	W3	C2	V3	M1
100EFB	12	65	650	277	175	175	17.6	0	LB3 DIN EFB	T1	B13	W3	C2	V3	M2
110EFB	12	75	730	315	175	175	19.8	0	LB4 DIN EFB	T1	B13	W3	C2	V3	M2
115EFB	12	85	760	317	175	190	21.2	0	L4 DIN EFB	T1	B13	W3	C2	V3	M1
335EFB	12	80	780	305	173	225	22.5	0	D31 JIS EFB (T110)	T1	N	W3	C2	V3	M1

Performance Plus - SMF

Features: Approximately 30,000 starts • Calcium/Calcium plates
Integrated carrying handle • OE Quality, Performance & Specification

Performance: Up to 20% increase in cranking power



Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
				L	W	T H									
004SMF	12	50	400	202	173	225	12.9	1	D20 JIS	T1	N	W4	C2	V3	E1
005SMF	12	60	500	231	173	225	15.5	0	D23 JIS	T1	N	W3	C2	V2	E1
009SMF	12	30	300	167	129	224	8.6	0	B17 JIS	T3	N	W4	C2	V3	E1
012SMF	12	52	400	207	175	190	13.3	0	L1 DIN	T1	B13/B14	W3	C2	V2	E1
014SMF	12	60	500	231	173	225	15.5	1	D23 JIS	T1	N	W3	C2	V2	E1
017SMF	12	88	680	353	175	175	21.8	0	LB5 DIN	T1	B13	W3	C2	V2	E1
019SMF	12	95	750	353	175	190	24	0	L5 DIN	T1	B13	W3	C2	V2	E1
020SMF	12	110	900	394	175	190	26.3	0	L6 DIN	T1	B13	W4	C2	V3	E1
027SMF	12	62	510	242	175	190	16	0	L2 DIN	T1	B13	W3	C2	V2	E1
030SMF	12	70	540	258	174	225	18.4	0	D26 JIS	T1	N	W3	C2	V2	E1
031SMF	12	70	540	258	174	225	18.4	1	D26 JIS	T1	N	W3	C2	V2	E1
053SMF	12	45	330	238	129	225	12.4	0	B24 JIS	T1/T3	N	W3	C2	V2	E1
054SMF	12	36	330	187	127	227	9.3	0	B19 JIS	T1/T3	N	W3	C2	V2	E1
055SMF	12	36	330	187	127	227	9.3	1	B19 JIS	T1/T3	N	W3	C2	V2	E1
056SMF	12	36	330	187	136	227	9.3	0	B19 JIS	T1/T3	B1	W3	C2	V2	E1
057SMF	12	45	330	238	129	225	12.4	1	B24 JIS	T1/T3	N	W3	C2	V2	E1
063SMF	12	45	380	207	175	175	11.6	0	LB1 DIN	T1	B13/B14	W3	C2	V2	E1
068SMF	12	70	570	269	174	223	17.5	0	D26 JIS	T1	B9	W4	C2	V3	E1
069SMF	12	70	570	269	174	223	17.5	1	D26 JIS	T1	B9	W4	C2	V3	E1
075SMF	12	60	500	245	175	175	14.4	0	LB2 DIN	T1	B13/B14	W3	C2	V2	E1
077SMF	12	45	380	207	175	190	12.7	1	L1 DIN	T1	B13	W3	C2	V2	E1
078SMF	12	62	550	242	175	190	16	1	L2 DIN	T1	B13	W3	C2	V2	E1
086SMF	12	75	650	278	175	190	19	1	L3 DIN	T1	B13	W3	C2	V2	E1
096SMF	12	75	650	278	175	190	19	0	L3 DIN	T1	B13	W3	C2	V2	E1
100SMF	12	71	650	278	175	175	17.1	0	LB3 DIN	T1	B13/B14	W3	C2	V2	E1
102SMF	12	42	390	175	175	190	10.5	1	LO DIN	T1	B13	W4	C2	V3	E1
108SMF	12	50	400	202	173	225	12.9	0	D20 JIS	T1	B1	W4	C2	V3	E1
110SMF	12	80	680	315	175	175	17.2	0	LB4 DIN	T1	B13	W3	C2	V2	E1
115SMF	12	85	760	317	175	190	19.8	0	L4 DIN	T1	B13	W4	C2	V3	E1
116SMF	12	90	800	315	175	190	20.7	1	L4 DIN	T1	B13	W4	C2	V3	E1
202SMF	12	42	360	175	175	190	10.5	0	LO DIN	T1	B13	W4	C2	V3	E1
205SMF	12	60	540	230	174	205	14.9	0	D23 LOW JIS	T1	B1	W4	C2	V3	E1
214SMF	12	60	540	230	174	205	14.9	1	D23 LOW JIS	T1	B1	W4	C2	V3	E1
334SMF	12	95	720	304	174	225	20.8	1	D31 JIS	T1	B1	W3	C2	V2	E1
335SMF	12	95	720	304	174	225	20.8	0	D31 JIS	T1	B1	W3	C2	W3	E1

THE CORRECT CHOICE OF AUTOMOTIVE OR COMMERCIAL BATTERY

When replacing a battery it is important to keep to the original battery technology. If the vehicle has "Start Stop" technology & is fitted with an AGM battery it MUST be replaced with an AGM battery of the correct specification, the same goes for EFB batteries.

NEVER reduce the technology in an attempt to reduce costs as this will only result in premature failure of the replacement battery & will invalidate the

warranty. If a standard flooded battery is fitted to a Start-Stop vehicle it will most definitely fail very early depending on driving patterns.

This type of battery failure will lead to a loss of vehicle functions (including Start-Stop). It will also mean considerable inconvenience for the customer and dissatisfaction with the replacement battery.



AUTOMOTIVE & COMMERCIAL



Performance American Range

Features: Approximately 20,000 starts • Integrated carrying handle • Calcium plates • OE Quality, Performance & Specification

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
				L	W	T H									
111SMF	12	50	530	236	182	177	12.9	0	GR58 BCI	T1	B1	W4	C2	V3	E1
113SMF	12	50	530	236	182	177	12.9	1	GR58 BCI	T1	B1	W4	C2	V3	E1
750SMF	12	66	660	230	179	185	15	1	GR75 BCI	FT	B1	W4	C2	V3	E1
780SMF	12	74	740	260	183	185	16.7	1	GR78 BCI	FT	B1	W4	C2	V3	E1
AM80OV	12	80	600	300	186	190	16.4	1	GR79 BCI	T1	B1	W2	C2	V2	E1

Performance

Features: Approximately 20,000 starts • Remote flame arrestor on selected batteries • Central venting
Integrated carrying handle • Calcium/Calcium plates • OE Quality, Performance & Specification

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
				L	W	H									
012MF	12	50	380	207	175	190	12.7	0	L1 DIN	T1	B13	W3	C2	V2	E1
012MF	12	45	380	207	175	190	12.7	0	L1 DIN	T1	B13	W3	C2	V2	E1
015MF	12	40	350	239	135	202	10.5	1	A (British Leyland)	T1	B12	W3	C2	V2	E1
019MF	12	90	720	353	175	190	22.9	0	L5 DIN	T1	B13	W3	C2	V2	E1
027MF	12	56	480	243	175	190	15	0	L2 DIN	T1	B13/B14	W3	C2	V2	E1
037MF	12	35	330	238	135	206	9.7	0	A (FORD)	T4	B12	W3	C2	V2	E1
038MF	12	35	330	239	135	202	11.1	1	A (British Leyland)	T1	B12	W3	C2	V2	E1
048MF	12	45	350	220	135	225	13.1	0	E2 (Talbot)	T1	B1	W3	C2	V2	E1
049MF	12	45	350	220	135	225	13.1	1	E2 (Talbot)	T1	B1	W3	C2	V2	E1
063MF	12	40	360	207	175	175	11.4	0	LB1 DIN	T1	B13/B14	W3	C2	V2	E1
072MF	12	70	570	258	173	206	18.8	1	D26 Lid (Volvo)	T1	B14	W3	C2	V2	E1
075MF	12	56	470	243	175	175	13.7	0	LB2 DIN	T1	B13/B14	W3	C2	V2	E1
085MF	12	40	350	207	175	175	10.4	0	LB1 DIN	T4F	B13/B14	W3	C2	V2	E1
096MF	12	70	640	278	175	190	18.4	0	L3 DIN	T1	B13	W3	C2	V2	E1
097MF	12	54	470	242	175	175	12.8	0	LB2 DIN	T4F	B13/B14	W3	C2	V2	E1
100MF	12	70	640	278	175	175	15.8	0	LB3 DIN	T1	B13/B14	W3	C2	V2	E1

Super Heavy Duty-SMF

Features: Original equipment (OE) quality, performance and specification • Enhanced safety features including integrated flame arrestor & carrying handles • For occasional overnight stays where hotel loads are applied • Superior vibration resistance - V3
E2 Endurance rating - up to 150 cycles (50% DOD) • Fully maintenance free • Suitable for end of chassis location - V4

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
				L	W	H									
627SMF	12	143	900	513	189	223	36.6	3	DIN A	T1	N	W3	C2	V4	E2
628SMF	12	143	900	513	189	223	36.6	4	DIN A	T1	N	W3	C2	V4	E2
629SMF	12	180	1125	511	222	215	45.3	3	DIN B	T1	N	W3	C2	V4	E2
630SMF	12	143	900	513	189	223	36.6	3	DIN A	T1	B3	W3	C2	V4	E2
632SMF	12	220	1150	516	274	236	55.8	3	DIN C	T1	N	W3	C2	V4	E2
640SMF	12	100	800	329	173	240	24	9	GR31A BCI	T1	N	W3	C2	V3	E2
641SMF	12	110	925	329	173	240	25	9	GR31S BCI	Thread	N	W3	C2	V3	E2
642SMF	12	115	1000	329	173	240	25	9	GR31A BCI	T1	N	W3	C2	V3	E2
665SMF	12	112	870	346	173	234	25.5	0	Low Compact	T1	B1	W3	C2	V3	E2
669SMF	12	110	925	329	173	240	25	0	GR31A BCI	T1	N	W3	C2	V3	E2



Super Heavy Duty-EFB

Features: Original equipment (OE) quality, performance & specification • Designed for the rigours of commercial, agricultural & plant vehicle applications • Enhanced safety features including integrated flame arrestor & carrying handles • Premium choice for high power demands & end of chassis location • Next generation enhanced flooded technology suitable for vehicles with Start-Stop systems or standard ignition • For frequent overnight stays where hotel loads are applied • M1 Micro-cycle endurance - over 765 cycles (17.5% DOD) • Fully maintenance free with sealed double lid

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
				L	W	T H									
625EFB	12	230	1250	516	274	236	56.2	3	DIN C	T1	N	W3	C2	V4	M1
629EFB	12	185	1150	511	222	215	46.2	3	DIN B	T1	N	W3	C2	V4	M1

Super Heavy Duty-SHD

Features: Advanced plate design • Increased service life over HD • Deep Cycle capabilities • Vibration Resistant
OE Quality, Performance & Specification

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
				L	W	T H									
627SHD	12	143	900	513	189	223	37.6	3	DIN A	T1	N	W2	C2	V2	E2
629SHD	12	180	1100	513	223	223	44.9	3	DIN B	T1	N	W2	C2	V2	E2
657SHD	12	142	850	345	175	275	35.5	0	Tall Compact	T1	N	W3	C2	V2	E2
724SHD	12	225	1200	518	276	243	59.6	4	DIN C	T1	N	W3	C2	V2	E2
725SHD	12	255	1200	518	276	243	59.6	3	DIN C	T1	N	W3	C2	V2	E2

Heavy Duty-HD

Features: Advanced plate design • Deep cycle capabilities • Vibration Resistant • OE Quality, Performance & Specification

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Water Loss	Charge Retention	Vibration	Endurance
				L	W	H									
615HD	12	135	910	514	175	210	32.5	3	MAC 110	T1	B3	W3	C2	V3	E1
616HD	12	110	680	407	176	234	29.6	0	E41 JIS	T1	N	W2	C2	V2	E1
618HD	12	110	680	407	176	234	29.6	1	E41 JIS	T1	N	W2	C2	V2	E1
622HD	12	135	900	510	216	210	38	3	MAC 143	T1	N	W2	C2	V2	E1
623HD	12	180	1100	513	223	223	44.9	4	DIN B	T1	N	W2	C2	V2	E1
624HD	12	200	1050	513	274	242	55	4	DIN C	T1	N	W2	C2	V2	E1
625HD	12	200	1050	513	274	242	55	3	DIN C	T1	N	W2	C2	V2	E1
627HD	12	120	680	513	189	223	33.6	3	DIN A	T1	N	W2	C2	V2	E1
629HD	12	170	1050	513	223	223	42	3	DIN B	T1	N	W2	C2	V2	E1
632HD	12	220	1150	513	274	242	57	3	DIN C	T1	N	W2	C2	V2	E1
633HD	12	140	900	360	253	240	40.8	6	Volvo	T1	B1	W2	C2	V2	E1
638HD	12	140	1100	508	175	205	36.5	0	Tractor	T1	B1	W2	C2	V2	E1
643HD	12	95	600	347	174	235	26	0	Low Compact	T1	N	W2	C2	V2	E1
644HD	12	95	600	347	174	235	26	1	Low Compact	T1	N	W2	C2	V2	E1
655HD	12	125	720	347	174	285	34	0	Low Compact	T1	N	W2	C2	V2	E1
656HD	12	125	720	347	174	285	34	1	Low Compact	T1	N	W2	C2	V2	E1
663HD	12	110	750	347	174	235	27.6	0	Low Compact	T1	N	W2	C2	V2	E1
664HD	12	110	750	347	174	235	27.6	1	Low Compact	T1	N	W2	C2	V2	E1
6TNHD	12	125	700	280	267	230	37.6	7	6TN	T1	N	W2	C2	V2	E1

Specialist & Garden

For Ride on mowers, kit cars & specialist applications • Supplied charged and ready to fit

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Terminal	Hold-Down
				L	W	H				
895OV	12	26	250	187	127	181	7.5	0	T4	N
896OV	12	26	250	187	127	181	7.5	1	T4	N
895SMF	12	30	330	194	126	183	7.8	0	T4	N
896SMF	12	30	330	194	126	183	7.8	1	T4	N

Keep Batteries Charged

All batteries must be kept charged especially when not in frequent use



MARINE & LEISURE



Advanced semi-traction technology.

Convenient carrying handles.

Manufactured with a robust polypropylene case.

MF Marine - sealed & maintenance free.

Dual Purpose.

Vibration resistant.

Featuring a magic eye, enabling easy battery condition check.

Standard post & threaded stud terminals (MF range).

Enhanced Safety features.

Shield Powerstation Leisure & Marine



EFB and AGM utilise the latest in next generation battery technology to provide greater endurance, more available

cycles and faster charging. AGM also offers maximum safety with spill proof internal construction. Dependable, stress-free power and long life.

Features: Optimised for repeated charging & discharging • Original equipment quality & specification • Supplied charged & ready to fit • Built to last

Type	V	AH	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Lid	MCA A	Watt Hours	NCC Class
				L	W	H									
LM26-70	12	70	480	269	174	225	17	1	GR24	T1	B5	MF	580	840	C
LM26-80	12	80	560	269	174	225	18	1	GR24	T1	B5	MF	680	960	C
LM35-90	12	90	680	352	175	227	23.6	1	EU Lo D2	T1	N	MF	820	1080	C
LM35-100	12	100	720	352	175	227	24.7	1	EU Lo D2	T1	N	MF	875	1200	C
LM35-115	12	115	750	352	175	227	25.4	1	EU Lo D2	T1	N	MF	915	1380	C
LM36-100	12	100	900	353	175	190	23.3	0	L5 DIN	T1	B13	SMF	1000	1200	C
LM28-EFB	12	75	730	278	175	190	19.3	0	L3 DIN	T1	B13	SMF	900	900	-
LM36-EFB	12	100	850	353	175	190	24	0	L5 DIN	T1	B13	SMF	1050	1200	B
LM26-AGM	12	90	300	259	168	236	27	1	GR24	M6(F)/T1	N	VRLA	350	1080	A
LM36-AGM	12	95	850	353	175	190	25.6	0	L5 DIN	T1	B13	VRLA	1050	1140	A

Shield Powerstation Marine

Features: Enhanced safety features • Vibrolock construction provides enhanced vibration resistance • Dual terminal • Supplied charged & ready to fit • Leak proof double lid • Effective power supply is also critical for most operations including engine start, navigation, radio, GPS & lighting

Type	V	AH	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Lid	MCA A	Watt Hours	NCC Class
				L	W	H									
MF24-85	12	85	650	260	174	225	18.9	1	GR24	DT	B5	SMF	780	960	-
MF27-100	12	100	720	304	173	225	21.2	1	GR27	DT	B1	SMF	860	1080	-
MF31-110	12	110	800	330	173	240	23.5	1	GR31	DT	N	SMF	960	1200	-

Shield Dual Purpose

Our commercial batteries are ideal for dual power applications where starting and overall energy is required, such as large watercraft, canal boats, trailers and horse boxes.

Features: Very high watt hour rating • XVR extreme vibration resistance • Supplied charged & ready to fit • Enhanced endurance

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Lid	MCA A	Watt Hours	NCC Class
				L	W	H									
627SMF	12	143	900	513	189	223	36.5	3	DIN A	T1	N	SMF	1050	1716	-
629SMF	12	180	1125	511	222	215	45.3	3	DIN B	T1	N	SMF	1380	2160	-
632SMF	12	220	1150	516	274	236	56.4	3	DIN C	T1	N	SMF	1450	2640	-

Crown Deep Cycle Marine & Leisure

Advanced marine & leisure battery technology with state-of-the-art innovation, Crown marine batteries set a new standard of performance in the most severe marine applications. Crown marine & leisure batteries match every application - exactly to specification.

Type	V	AH C20	CCA EN1	Dimensions (mm)			Weight Kg's	Layout	Case Type	Terminal	Hold-Down	Lid	MCA A	Watt Hours	NCC Class
				L	W	H									
31MDC-120	12	120	800	330	171	238	25.9	1	GR31	DT	N	SMF	1000	1440	-



GEL BATTERIES



Sealed battery system with recombination. Absolutely maintenance free. Clean & environmentally friendly. No release of acid vapors. Extremely low gassing.

Lead/Calcium alloy on positive & negative plates. Minimal self discharge - ideal for seasonal applications.

Robust construction - High vibration resistance.

Thick plates with mechanically reinforced positive mass. Extremely high cycling capability. Long service life with frequent charge and discharge.

Acid fixed in GEL - 100% leak proof. Battery can also be positioned on its side. Deep discharge capabilities. No stratification - Suitable for solar applications.

GB GEL Range (12 Volt)

Part No	Volts	Ah C5	Ah C20	Dimensions (mm)			Layout	Terminal	Weight (Kg)
				Length	Width	Total Height			
GB 12 040	12	33	40	210	175	175	0	T1	14.6
GB 12 060	12	51	56	278	175	190	0	T1	20.8
GB 12 080	12	65	80	353	175	190	0	T1	26.8
GB 12 085	12	66	85	349	175	235	1	T1	30.0
GB 12 120S	12	105	120	349	175	289	3	T1	38.7
GB 12 120	12	105	120	513	189	223	0	T1	40.0
GB 12 140	12	128	140	513	223	219	3	T1	45.5
GB 12 210	12	193	210	518	274	238	3	T1	62.5



GB GEL Range (6 Volt)

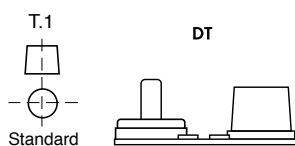
Part No.	Volts	Ah C5	Ah C20	Dimensions (mm)			Layout	Terminal	Weight (Kg)
				Length	Width	Total Height			
GB 06 195	6	160	195	246	192	275	0	T1	29.0
GB 06 200	6	160	196	264	183	270	0	DT	33.0
GB 06 300	6	255	300	295	178	365	0	T1	41.5

GBA GEL Range (American Types)

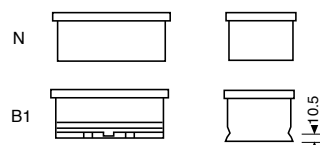
Part No	Volts	Ah C5	Ah C20	Dimensions (mm)			Layout	Terminal	Weight (Kg)
				Length	Width	Total Height			
GBA 24 DT	12	63	74	277	173	251	1	DT	23.6
GBA 27 DT	12	72	86	326	173	251	1	DT	28.6
GBA 31 DT	12	86	98	329	171	237	1	DT	31.8
GBA 4D T1	12	153	183	527	214	254	4	T1	62.0
GBA 8D T1	12	188	225	534	279	251	4	T1	75.0



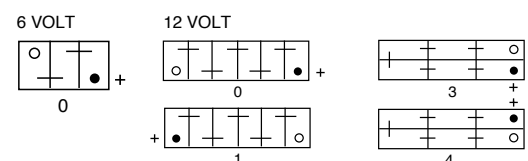
Battery Terminal Type



Battery Hold Down & Features



Terminal Layouts



The Genuine and Original hard rubber battery

- Large range of hard rubber classic vehicle batteries in 6v & 12v.
- Period looking batteries.
- Battery re-build service available.
- Technical advice and support.
- Flexible lead times & customer delivery schedules.
- British engineered.
- Chargers available upon request.
- Recycling service available.
- Available with acid packs, ready to fit (subject to regulations).



Our classic vehicle batteries are genuine hard rubber matching the original manufacturers specification. These can be supplied either wet (fully charged) or dry-charged with acid packs and commissioning instructions.

Hard Rubber Range - 6 Volt

Part No	Nearest Din Type	AH @ 20 Hr rate	Lid Type	DIMENSIONS (mm)				Layout	Terminal Type	Base Holddown Features	Acid Qty Litres
				Length	Width	Height	T. Height				
280	11213	150	BAR	503	98	192	217	9	T1	N	4
311LBH		60	BAR	225	179	164	189	0	T1	TOP	3
401	06611	60	BAR	186	170	164	189	0	T1	N	3
404	07715	71	BAR	215	171	165	190	0	T1	B12	3
404/15	07715	79	BAR	215	171	165	190	0	T1	B12	3
404/19	07715	102	BAR	215	171	165	190	0	T1	B12	3
421	05611	58	BAR	169	174	192	217	0	T1	N	3
421/11	05611	73	BAR	169	174	192	217	0	T1	N	3
421/13	05611	88	BAR	169	174	192	217	0	T1	N	3
421/M	05611	58	MONO	169	174	192	217	0	T1	N	3
451	18011	190	BAR	412	175	200	225	1	T1	N	6
451 EU	18011		BAR	392	175	210	235	1	T1	N	6
501	08411	88	BAR	224	173	192	217	0	T1	N	3
501/17	09611	117	BAR	224	173	192	217	0	T1	N	4
501/17TALL	10211	117	BAR	225	173	210	235	0	T1	N	4
511 UK	09811	103	BAR	255	172	200	225	0	T1	N	4
511T/UK	09811	131	BAR	255	172	200	225	0	T1	N	4
511	09811	103	BAR	263	172	192	217	0	T1	N	4
511/TALL	12018	117	BAR	263	176	210	235	0	T1	N	4
511/21	09811	146	BAR	263	172	192	217	0	T1	N	4
511/21-V8P		115	BAR	263	172	192	217	0	T1	N	3



BRITISH MADE
DESIGNED TO PERFORM
AND BUILT TO LAST

Hard Rubber Range - 6 Volt continued

Part No	Nearest Din Type	AH @ 20 Hr rate	Lid Type	DIMENSIONS (mm)				Layout	Terminal Type	Base Holdown Features	Acid Qty Litres
				Length	Width	Height	T. Height				
521	11211	117	BAR	291	170	202	227	0	T1	N	6
521/21	11211	146	BAR	291	170	202	227	0	T1	N	6
521/EU*	11211	117	BAR	296	173	210	235	0	T1	N	6
531	15012	131	BAR	320	170	201	226	0	T1	N	6
531/EU*	15012	131	BAR	329	175	210	235	0	T1	N	6
531/21	15012	150	BAR	320	170	201	226	0	T1	N	6
541		150	BAR	347	174	200	225	0	T1	N	6
591*		140	BAR	265	173	267	292	0	T1	N	6
702		240	MONO	315	181	372	372	0	T9	B4	7
703		280	MONO	372	181	372	372	0	T9	B4	9
712		240	MONO	315	181	372	397	0	T1	B4	7
713		280	MONO	372	181	372	397	0	T1	B4	9
722		218	MONO	422	176	215	255	0	T9	B4	7
733		218	MONO	422	176	215	240	0	T1	B4	7

Hard Rubber Range - 12 Volt

Part No	Nearest Din Type	AH @ 20 Hr rate	Lid Type	DIMENSIONS (mm)				Layout	Terminal Type	Base Holdown Features	Acid Qty Litres
				Length	Width	Height	T. Height				
182		65	BAR	332	133	178	203	1	T1	B12	4
183		65	BAR	332	133	178	203	0	T4	B12	4
165		45	BAR	241	134	178	203	1	T1	N	4
166		45	BAR	241	134	178	203	0	T4	N	4
182M		65	MONO	330	137	178	203	1	T1	B12	4
183M		65	MONO	330	137	178	203	0	T4	B12	4
241	56037	73	BAR	307	170	205	230	0	T1	N	6
241LOW		60	BAR	307	170	175	200	0	T1	N	4
241/13	56037	88	BAR	307	170	205	230	0	T1	N	6
241/13LOW		71	BAR	307	170	175	200	0	T1	N	4
242	56014	73	BAR	307	170	205	230	1	T1	N	6
242LOW		60	BAR	307	170	175	200	1	T1	N	4
242/13	56014	88	BAR	307	170	205	230	1	T1	N	6
242/13LOW		71	BAR	307	170	175	200	1	T1	N	4
243		102	BAR	346	175	214	239	0	T1	N	6
244		102	BAR	346	175	214	239	1	T1	N	6
279	57016	73	BAR	485	110	195	220	8	T1	N	6
279/LOW		60	BAR	485	110	167	192	8	T1	N	4
279/13	57016	88	BAR	485	110	195	220	8	T1	N	6
279/13LOW		71	BAR	485	110	167	192	8	T1	N	4



Keep Batteries Charged

All batteries must be kept charged especially when not in frequent use



Hard Rubber Range - 12 Volt continued

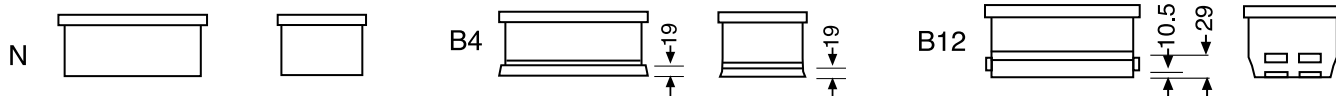
Part No	Nearest Din Type	AH @ 20 Hr rate	Lid Type	DIMENSIONS (mm)				Layout	Terminal Type	Base Holddown Features	Acid Qty Litres
				Length	Width	Height	T. Height				
291	56011	58	BAR	249	165	197	222	1	T1	N	4
291/11	56011	73	BAR	249	165	197	222	1	T1	N	4
292	56037	58	BAR	249	165	197	222	0	T1	N	4
292/11	56037	73	BAR	249	165	197	222	0	T1	N	4
321*		147	BAR	513	220	200	225	3	T1	N	9
323*		147	BAR	513	220	200	225	4	T1	N	9
324*		190	BAR	513	278	200	225	4	T1	N	10
325*		190	BAR	513	278	200	225	3	T1	N	10
333*	61815	131	BAR	356	250	210	235	6	T1	N	8
333/21*	61815	146	BAR	356	250	210	235	6	T1	N	8
602		102	BAR	370	172	200	225	1	T1	N	7
602/LOW		80	BAR	370	172	168	193	1	T1	N	6
602/17		117	BAR	370	172	200	225	1	T1	N	6
602/17LOW		91	BAR	370	172	168	193	1	T1	N	6
612		117	BAR	445	174	210	235	1	T1	N	7
612LOW	58411	91	BAR	445	174	187	212	1	T1	N	7

TAKING DELIVERY OF YOUR BATTERY

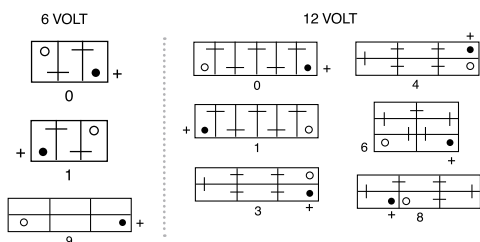
When you receive your new battery, if it is dry, remember its' service life begins when you put in the acid. Do not fill it more than 10mm above the elements. Within 2 hours of filling, ensure that the battery goes on charge. The battery will be charged when all cells are gassing freely. Periodically recharge during periods of vehicle inactivity. It is imperative that the battery must be maintained in a state of full charge. Failure to maintain a full charge could result in the battery failing. **A RANGE OF CHARGERS ALSO AVAILABLE.**

BATTERY FEATURES & SPECIFICATION GUIDE

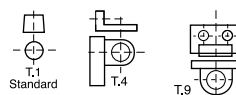
Battery Hold Down & Features



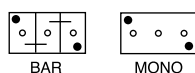
Battery Terminal Layout



Battery Terminal Type



Lid Type



Please note: Acid volumes are rounded up so as not to supply split bottles. Black vent caps as standard, yellow available on request.

* Minimum order quantity applies. Dimensions are subject to a 5mm +/- variation.

DEEP CYCLE



- Deep cycle performance
- Extended cyclic design life of 500 plus cycles
- Resistant to vibration
- Low maintenance with easy access vent caps for topping up
- Glass mat/porous rubber separator construction to resist corrosion & reduce electrical resistance
- Special case & lid designed to prevent short circuit
- Suitable for a range of vehicle and industrial applications, including: Golf carts, Mobility vehicles, Warehouse equipment, Fork lifts, Access platforms, Floor cleaners



Type	CAPACITY				DIMENSIONS (mm)				Approx. Weight (Kg's)	Terminal	Layout
	@25A (mins)	@75A (mins)	c5 (AH)	c20 (AH)	Length	Width	Height	Total Height			
Deep Cycle 6 Volt											
DCB605-6	383	105	175	210	259	179	245	276	27	TH/ET*	0
DCB105-6	447	115	185	225	259	179	245	276	28.6	TH/ET*	0
DCB125-6	488	132	195	240	259	179	245	276	30.7	TH/ET*	0
DCB145-6	530	145	215	260	259	179	264	295	33	TH/ET*	0
DCB390-6	790	215	310	390	314	183	410	4	52.2	DT	0
Deep Cycle 8 Volt											
DCB875-8	295	75	145	170	262	181	245	276	29	TH/ET*	1
Deep Cycle 12 Volt											
DCB24-12	130	- - -	65	80	260	175	214	220	18.9	DT	1
DCB27-12	170	- - -	75	95	304	173	214	220	21.4	DT	1
DCB31-12	200	- - -	90	110	336	173	220	235	23.9	DT	1
DCB1275-12	290	70	125	150	329	181	245	276	37.5	ET	1

Technical Features

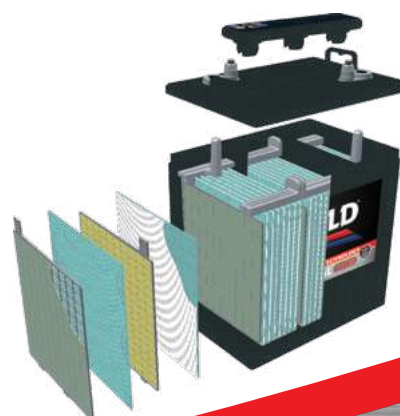
- Case/Lid:
 - Less weight, shock resistant & acid resistant thanks to PP Resin construction
 - Specially designed structure to prevent short circuit from active material shedding in the bottom
- Terminal:
 - Cast with special lead alloy
 - Special plating to minimise heat generation electric resistance
 - Designed to be vibration resistant
 - Easily detachable with standard & bolt/nut structure
- Cap:
 - Designed and engineered to allow gas venting
 - Easy to refill and maintain
- Separator:
 - Porous rubber material protects against acid corrosion
 - Excellent physical characteristics and lower electric resistance
 - Uses micro-fibre glass mat to minimise active material shedding
- Plates:
 - Negative - 99.9% pure lead with hard paste feature, specific additives for excellent deep cycle ability
 - Positive - corrosion resistant grid with special paste feature, specific additives for deep cycle purpose

TH Dual Fit Terminal

ET Embedded Terminal



DT



* ET available on request

CROWN DEEP CYCLE



- Over 90 years of Battery Manufacturing in the US.
- Rugged, SolidCast™ plates that result in longer battery life and work (or play!) as hard as you do.
- Range of 6, 8 & 12 volt Deep Cycle Batteries.
- Exclusive C-Force™ Active Mass for increased charge acceptance and discharge times.
- PosiWrap™ plate separators and other proprietary Crown components cut maintenance, add peace of mind.



Type	AMP- HR CAPACITY		RESERVE CAPACITY MINS			STORAGE		DIMENSIONS								Terminal	Layout
	20-Hr Rate	5-Hr Rate	75- Amps	56- Amps	25- Amps	kWh¹ 100-Hr	kWh¹ 20-Hr	Inches			Millimetres			Weight			
								L	W	H	L	W	H	Lbs	Kgs		
6 Volt Commercial Deep Cycle Batteries																	
CR-205	205	170	105	---	365	1.33	1.19	10.25	7.06	10.94	260	179	278	56	25.4	STD	0
CR-220	220	180	110	---	385	1.43	1.28	10.25	7.06	10.94	260	179	278	60	27.2	STD, S	0
CR-235	235	185	122	---	450	1.51	1.37	10.25	7.06	10.94	260	179	278	63	28.6	STD, S	0
CR-240	240	195	135	---	485	1.54	1.4	10.25	7.06	10.94	260	179	278	68	30.8	STD	0
CR-DGC	240	195	130	---	480	1.54	1.4	9.63	7.5	10.75	245	191	273	65	29.5	A	0
CR-260	260	215	150	---	525	1.7	1.51	10.25	7.06	11.63	260	179	295	75	34	STD,S	0
CR-250	250	215	150	---	540	1.63	1.46	11.75	7.19	11.13	298	183	283	76	34.5	STD	0
CR-305	305	255	170	---	620	1.95	1.78	12.19	7.19	14.13	310	183	359	90	40.8	STD	0
CR-330	330	270	190	---	676	2.12	1.92	12.19	7.19	14.13	310	183	359	93	42.2	STD	0
CR-350	350	290	210	---	725	2.27	2.04	12.19	7.19	14.13	310	183	359	101	45.8	STD	0
CR-370	370	295	190	---	750	2.42	2.15	12.38	7.19	16.13	314	183	410	109	49.4	STD	0
CR-390	390	310	215	---	790	2.53	2.27	12.38	7.19	16.13	314	183	410	115	52.2	STD	0
CR-430	430	340	240	---	920	2.79	2.5	12.38	7.19	16.13	314	183	410	122	55.3	STD	0
8 Volt Commercial Deep Cycle Batteries																	
CR-150	150	120	65	90	250	1.28	0.87	10.31	7.06	10.82	262	179	275	60	27.2	STD	1
CR-165	165	140	82	117	304	1.4	0.96	10.31	7.06	10.82	262	179	275	64	29	STD	1
CR-190	190	155	95	135	353	1.63	1.11	10.31	7.06	10.82	262	179	275	69	31.3	STD	1
12 Volt Commercial Deep Cycle Batteries																	
24HDC	90	70	33	---	140	1.11	0.52	11.06	6.81	9.38	281	173	238	50	22.7	STD	1
27HDC	115	95	43	---	180	1.51	0.67	12.95	6.81	9.38	329	173	238	58	26.3	STD	1
31HDC	130	105	46	---	200	1.69	0.76	13	6.75	9.38	330	171	238	66	29.9	STD	1
CR-GC150	150	120	61	103	243	1.92	0.87	12.92	7.06	10.53	328	179	267	81	36.7	STD	1
CR-GC155	155	125	75	110	286	1.98	0.90	12.92	7.06	10.53	328	179	267	88	39.9	STD	1
CR-185	185	150	85	---	326	2.39	1.08	15.5	7	14.63	394	178	372	107	48.5	STD	0
CR-195	192	160	100	---	370	2.5	1.13	15.5	7	14.63	394	178	372	107	48.5	STD	0
CR-215	215	175	118	---	429	2.79	1.25	15.5	7	14.63	394	178	372	120	54.4	STD	0



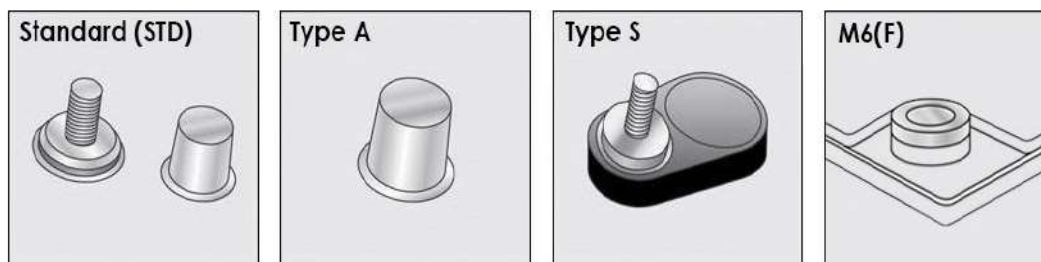
Type	ELECTRICAL CAPACITY					DIMENSIONS								Terminal	Layout
	Volts	Ah	MCA Rating	CCA Rating	RC Minutes	Inches			Millimetres			Weight			
						L	W	H	L	W	H	Lbs	Kgs		
12 Volt Crown Marine Deep Cycle															
27DC105	12	105	---	---	40	12.95	6.81	9.38	329	173	238	52	23.6	STD	0
31MDC-120	12	120	1250	1000	190	13	6.75	9.38	330	171	238	60	27.2	STD	1
12 Volt Crown Heavy Duty															
31A-XD	12	120	---	1100	---	13	6.75	9.38	330	171	238	61	27.6	A	9
4D-XD	12	200	1625	1300	375	20.75	8.63	10	527	219	254	111	50.3	A	4
8D-XD	12	225	1810	1450	430	20.75	11	10	527	279	254	128	58.1	A	4
12 Volt Crown Severe Duty-CV															
31DTSDC-XD	12	120	1250	1000	190	13	6.75	9.38	330	171	238	60	27.2	STD	1
4DSDC-XD	12	200	1625	1300	375	20.75	8.63	10	527	219	254	111	50.3	A	4
8DSDC-XD	12	225	1810	1450	430	20.75	11	10	527	279	254	128	58.1	A	4

CROWN AGM

- All Critical Applications
- Maintenance Free
- Super Clean AGM Lead Batteries
- Safest, Most Sustainable Energy Storage Option
- Robust Design Tolerates Deep Discharge
- Sealed, Spill-proof and easy to Deploy

Type	ELECTRICAL CAPACITY					DIMENSIONS								Terminal	Layout
	Volts	Ah	MCA Rating	CCA Rating	RC Minutes	Inches			Millimetres			Weight			
						L	W	H	L	W	H	Lbs	Kgs		
6CRV215	6	215	---	670	---	12.05	6.89	8.08	306	175	205	65	29.5	M6(F)	0
6CRV220	6	220	---	---	105	10.25	7.06	10.94	260	179	278	66	30	STD	0
12CRV80	12	80	---	---	140	11.26	6.75	9.38	286	171	238	51	23.1	STD	1
12CRV100	12	98	---	---	170	13	6.75	9.38	330	171	238	59	27	STD	1
12CRV110	12	110	---	---	200	13	6.75	9.44	330	171	240	60	27.2	STD	1

Available Terminals



STERLING AGM



- Sterling's unique construction and sealing techniques, ensures no electrolyte leakage from case or terminals allowing batteries to be positioned on their side.
- Excellent recovery from deep discharge.
- Low self-discharge - approx 3% per month.
- Not restricted for air transport - complies with IATA ICAO special provision A67.
- Maintenance Free, 98% recyclable.

Sterling HPC Series Range - AGM Deep-Cycle Plus Carbon

Features: Double cycle life when compared to standard AGM batteries • Durability for deep discharge
Advanced Carbon helps increase charge acceptance and optimises fast charging capability



Type	V	AH C100	AH C20	AH C10	AH C5	Dimensions (mm)			Total Height	Weight (kgs)	Layout	Terminal
						Length	Width	Height				
HPC90-12DT	12	93	90	85	77	260	168	208	233	23.5	0	DT
HPC100-12DT	12	115	108	104	96	306	168	208	233	27.8	0	DT
HPC115-12DT	12	130	118	113	107	330	173	212	237	31.7	0	DT
HPC150-12	12	172	160	150	132	335	172	275	278	42.4	0	M8
HPC200-12	12	215	200	190	172	527	214	222	244	56.1	3	DT
HPC220-12DT	12	245	220	210	190	387	180	346	368	59.7	1	DT
HPC260-12	12	262	250	225	205	527	280	230	252	72	3	DT
HPC165-8DT	8	---	165	152	140	260	180	252	274	29.2	1	DT
HPC200-6	6	215	208	200	172	306	168	222	228	28	4	M8
HPC210-6DT	6	231	210	192	173	260	180	252	274	27	5	DT
HPC225-6	6	246	224	210	192	260	180	247	253	30.5	5	M8/DT *
HPC245-6	6	270	245	232	210	243	188	275	275	32.4	5	M8
HPC265-6	6	285	268	255	230	262	180	263	268	32.9	5	M8/DT *
HPC350-6DT	6	385	350	332	305	295	180	346	368	48	5	DT
HPC400-6DT	6	435	400	375	342	295	180	406	428	54.2	5	DT

Sterling HP Series Range - General Purpose AGM Batteries

Features: Lead calcium grids • High gas recombination efficiency • Multipurpose: Float or light cyclic use



Type	V	AH C100	AH C20	AH C10	AH C5	Dimensions (mm)			Total Height	Weight (kgs)	Layout	Terminal
						Length	Width	Height				
HP1.2-12	12	---	1.2	1.12	1.01	97	43	52	58	0.57	3	STO
HP2.3-12	12	---	2.3	2.14	1.93	178	35	60	66	0.96	0	STO
HP2.9-12	12	---	2.9	2.7	2.44	79	56	99	105	1.10	1	STO
HP3.2-12	12	---	3.2	2.98	2.69	134	67	60.5	66.5	1.35	3	STO
HP5-12	12	---	5	4.65	4.2	90	70	101	107	1.75	0	STO
HP7-12	12	---	7	6.53	5.8	151	65	93.5	99	2.18	2	STO
HP7.5-12	12	---	7.5	7	6.25	151	65	93.5	99	2.35	2	STO
HP12-12	12	---	12	11.2	10.2	151	98	95	101	3.5	2	STO
HP18-12	12	---	18	16.7	15.1	181.5	77	167.5	167.5	5.40	1	M5
HP20-12	12	---	20	18.6	17	181.5	77	167.5	167.5	5.78	1	M5
HP26-12	12	---	26	24.2	22.1	181.5	175	125	125	7.8	1	M5
HP35-12	12	---	35	32.6	29.8	195	130	164	178	11.2	0	M6
HP45-12	12	52	46.8	45	38.7	197	165	170	170	14.2	1	M6
HP85-12	12	92	83.2	80	69	259	168	208	214	23.8	0	M6
HP110-12	12	115	104	100	88	330	173	212	220	30.6	0	M8
HP140-12	12	161	140.4	165	116	345	172	274	280	41.2	0	M8
HP200-12	12	230	208	200	172	522	240	218	224	59.8	3	M8
HP260-12	12	288	260	250	215	522	268	220	226	72.5	3	M8

* DT available on request

Sterling HPX Series Range - AGM High Rate - Small UPS

Features: Excellent high rate discharge efficiency >40% higher than standard AGM batteries • Lead calcium grids
High gas combination

Type	V	15 Min WPC 1.67VPC	Ah (20hr) 1.8VPC	Dimensions (mm)			Total Height	Weight (kgs)	Layout	Terminal
				Length	Width	Height				
HPX5.4-12	12	20.7	5.4	90	70	101	107	1.77	2	ST1
HPX9-12	12	33.5	9	151	65	93.5	99	2.66	2	ST1

Sterling HPA Series Range - AGM High Rate - UPS - Extended Design Life

Features: Extended design life > 10 year • Excellent high rate discharge efficiency >40% higher than standard AGM batteries
Special grids for extended life

Type	V	15 Min WPC 1.67VPC	Ah (20hr) 1.8VPC	Dimensions (mm)			Total Height	Weight (kgs)	Layout	Terminal
				Length	Width	Height				
HPA12-300	12	324.6	82	260	168	208	211	24	0	M6
HPA12-350	12	370.3	95	306	168	207	210	28	0	M6
HPA12-400	12	405.7	100	325	170	213	216	31.4	0	M8
HPA12-540	12	539	155	335	172	275	278	42.4	0	M8

Sterling HPS Series Range - AGM Solar Batteries

Features: Extended design life in solar and slow discharge applications • Special grids for extended life • High gas recombination efficiency

Type	V	AH C100	AH C20	AH C10	AH C5	Dimensions (mm)			Total Height	Weight (kgs)	Layout	Terminal
						Length	Width	Height				
HPS100-12	12	110	100	95.2	83	306	168	208	214	30.6	0	M6

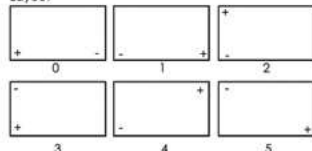
STERLING LITHIUM

- Sterling Lithium Iron Phosphate batteries (LiFePO4) are developed and manufactured in VRLA footprints to replace lead-acid batteries on the road, on the water, in industrial applications or off-the-grid
- Sterling Lithium batteries offer a tremendous amount of energy in a small, lightweight and maintenance-free box that's robust, safe and reliable
- Our wide variety of standard and high performance batteries ensure we have what you need, when you need it.
- LiFePO4 batteries provide more power with less weight

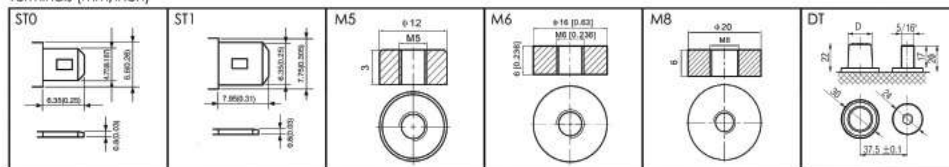
Sterling HLP Series Range - LiFePO4 Batteries

Type	V	Energy WH	AH	Dimensions (mm)			Total Height	Weight (kgs)	Layout	Terminal
				Length	Width	Height				
HLP80-12	12.8	1024	80	260	168	208	211	11.3	0	M6
HLP95-12	12.8	1216	95	353	175	190	190	13.7	0	M6
HLP100-12	12.8	1280	100	306	168	210	213	13.6	0	M8
HLP120-12	12.8	1536	120	330	173	209	212	15.8	0	M8
HLP200-12	12.8	2560	200	522	240	218	224	29.6	3	M8
HLP250-12	12.8	3200	250	522	240	218	224	33	3	M8

Layout



Terminals (mm/inch)



USEFUL INFORMATION



- Alongside the common voltage (v), capacity (Ah) and cold cranking amps (A) ratings, all Shield automotive batteries carry recently introduced EN50342-1/6 European Standard performance markings.
- Every battery in the range has undergone extensive testing to determine its performance. Having passed the requirements of several stringent tests, each battery has earned a classification number for the following criteria:

Keep Batteries Charged

All batteries must be kept charged especially when not in frequent use



- WATER LOSS: rated W1 - W5** - The ability to retain water content. The better a battery performs, the less water it will lose in service. W1 (traditional lead-acid battery) - W5 (Premium next generation battery technology)
- CHARGE RETENTION: rated C1 - C2** - The ability of the battery to retain stored chemical energy (charge) when not in use. C1 (Traditional lead-acid) - C2 (Modern calcium)
- VIBRATION: rated V1 - V4** - The battery's physical ability to resist the potentially damaging effects of vibration. V1 (Traditional car and light van) - V4 - (Extreme heavy duty plant and commercial vehicle)
- ENDURANCE: rated E1 - E4 (Conventional types only)** - The ability to withstand repeated charge/discharge cycles to 50% depth of discharge without failure. E1 (Conventional car and light van) - E4 (Extreme heavy duty plant and commercial vehicle)
- MICROCYCLE: rated M1 - M3 (EFB & AGM types only)** - The ability of the battery to provide power to restart the engine after frequent stop phases, its ability to recover state of charge afterward and to resist ageing effects due to shallow pulse loads. M1 (Basic start - stop) - M3 (High end start - stop and hybrid)

Other Ratings

- 1200 Watt Hours** - The amount of power the battery can supply when fully charged. You can calculate your requirements by working out the consumption of the accessories the battery will power, and how long you usually use them for.
- 160 Cyclic Life** - The number of times the battery can be discharged to 50% then fully recharged. The higher the cyclic life, the more work the battery can do during its life in service.
- 960 Marine Cranking Amps (MCA)** - The amount of cranking power the battery can provide to start the engine. It is the number of Amperes it can deliver for 30 seconds. Unlike CCA/A (EN), MCA is measure at a temperature of 0°C as this is more relevant to marine use.

Reserve Capacity (RC) - The length of time in minutes that a fully charged battery at 25°C can deliver a current of 25 Amps until the voltage drops to 10.50V (5.25V for a 6V Battery). 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 starter battery will damage the internal components and lead to premature failure. Deep Cycle, Leisure and Marine batteries are designed to withstand repeated cycling and are the only battery types that are suitable for cycling applications.



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.

- 65 Ah Ampere-Hour @ 20hr (Ah)** - Ah refers to the battery's storage capacity. At 25°C, the battery must achieve greater than 20 hours of discharge time at a given load, down to a cut-off voltage of 10.5V. For example, at 60Ah battery will deliver a current of 3A for 20 hours.



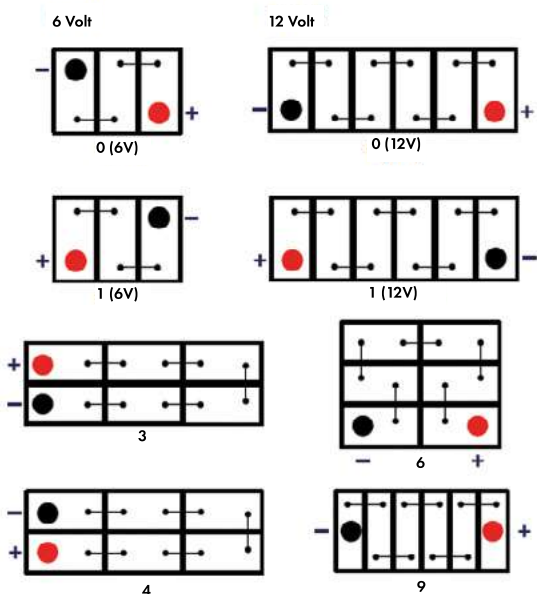
The more accessories that are in use, the faster available battery energy is consumed.
Consumption of the battery's capacity is referred to as 'discharging'.

- 640 A (EN) Cold Cranking Amperes (CCA)** - Is a measurement of the maximum current a fully charged battery can deliver at -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.

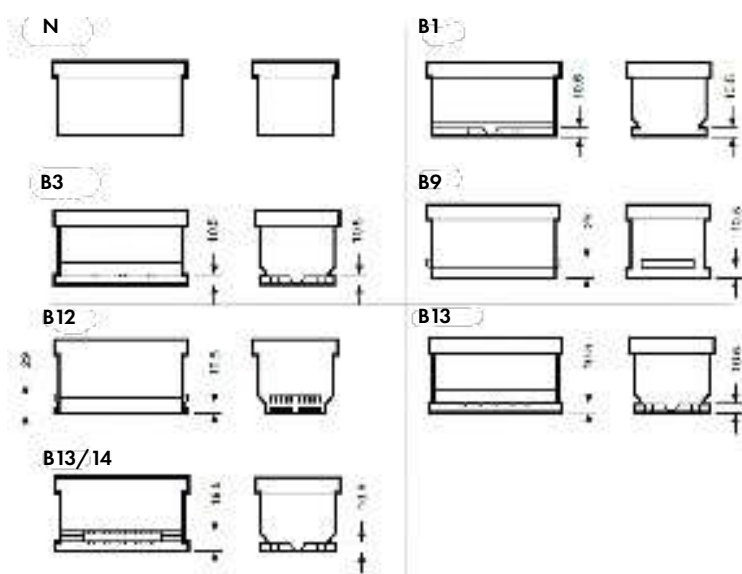
LAYOUT, CONTAINERS & TERMINALS



Cell Assembly Layout

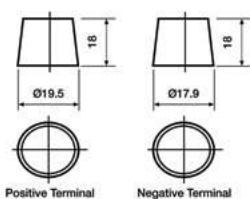


Hold-down & Container Features

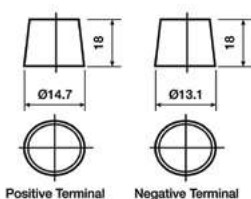


Terminal Configurations

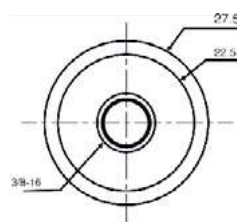
T1
Standard DIN post



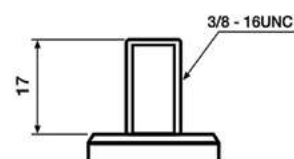
T3
Small Japanese JIS terminal



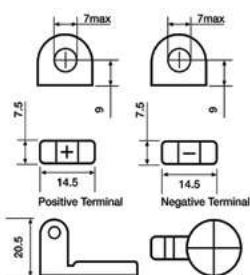
FT
US BCI group type



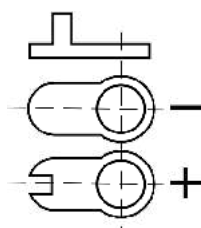
Thread
US BCI stud terminal



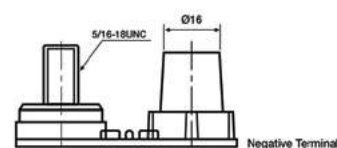
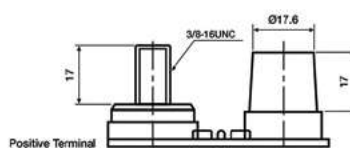
T4



T4F

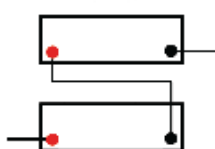


DT
Dual Terminals



Wiring Diagrams

Series



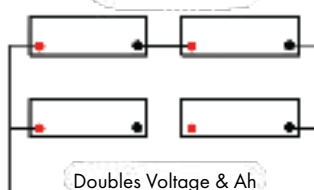
Doubles Voltage

Parallel



Doubles Ah

Series & Parallel



Doubles Voltage & Ah

BATTERY RECYCLING



- Shield Batteries are dedicated to caring for the environment and believe that scrap batteries should be recycled and disposed of responsibly.
- We offer a comprehensive, easy-to-use scrap collection service provided by our recycling partner Ecobat Logistics.

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** - Sulfuric acid is converted to sodium sulfate to be used in the manufacture of glass, textiles, laundry detergents and fertilisers.
2. **Lead** - Battery plates, intercell connections 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.

Benefits of recycling

Help build a cleaner world for future generations, prevent harm to humans and wildlife, protect the environment, conserve natural resources, reduce the amount of waste going to landfill.

The Shield Batteries scrap collection service



Profit opportunities

Our service provides businesses with additional revenue from the collection and recycling of waste batteries.

By encouraging your customers to return their waste batteries to you and then disposing of them via our service, your business can receive additional revenue whilst also being legally and environmentally compliant.

Legal compliance

Our legally compliant solution meets the requirements of all environmental regulations surrounding collection, processing and recycling. It also provides full hazardous waste disposal documentation for your business.

The disposal of waste batteries is regulated by strict European legislation, so it is a legal requirement for companies to handle disposal competently. Every stage of the process needs to be recorded and companies that fail to do so face prosecution with the prospect of large fines and even imprisonment.

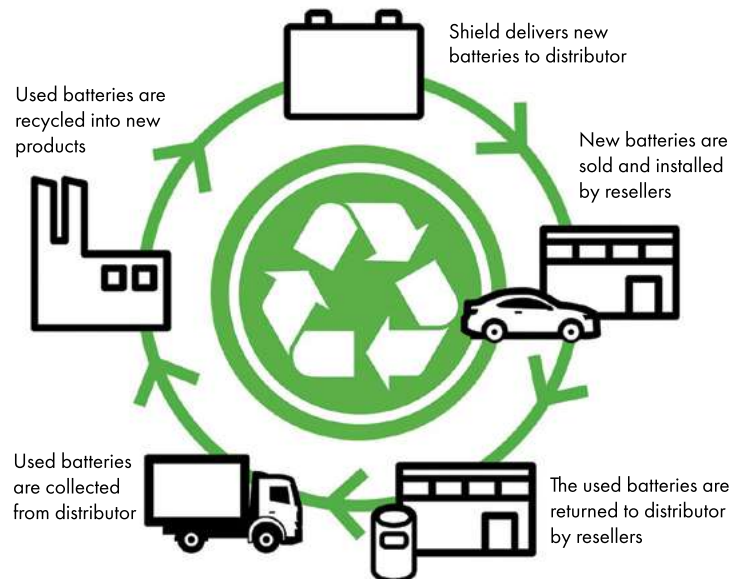
The Shield scrap collection service provides:

- UN approved, sealed containers for safe storage
- Regular collections
- Full sorting, processing and recycling of all scrap batteries regardless of manufacturer
- Legally compliant documentation for the business
- Quick payment of the scrap value of the batteries collected

Battery types collected

We can collect and recycle any kind of waste battery chemistry, from small button cells used in watches to large industrial batteries used in fork lift trucks. We are also able to handle spent lithium-ion batteries which must be stored separately to lead acid types due to the extra fire risk if not handled responsibly. **There may be an additional cost for disposal of Non-Lead Acid chemistries.**

Our recycling process



To discuss your waste battery requirements call us on 01279 652067 Email: info@shieldbatteries.co.uk

BATTERY HEALTH & SAFETY



- Handles on batteries are for positioning only and not for carrying.
- Always keep battery level - DO NOT TILT. (Flooded)
- * Always follow manufacturers guidelines. On some vehicles, ignition may be required to be placed in accessory mode where electronic memory minder is present.



Battery acid

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



If electrolyte is swallowed

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



First aid

If in eyes, hold eyelids apart and flush the eye continuously with running water. Seek medical assistance and continue flushing until advised to stop by a medical professional, or after at least 15 minutes have passed.

If skin or hair contact occurs, remove contaminated clothing and flush skin or hair with running water.



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.



Acid spill response

Neutralise spills with soda ash or other suitable alkali. Dispose of residue as chemical waste or as per local requirements.



Always shield eyes 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.

Common battery symbols



Shield eyes - Eye protection must be worn



Note operating instructions



No smoking - No naked flames - no sparks



Keep away from children



Explosive gas - may be released



Battery acid is corrosive



Never dispose of as domestic waste - take to a designated waste reclamation site



Battery is recyclable - follow local recycling and reclaiming procedures.

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powering the future since 1910...

