

Introduction:

- Magnacharge Battery Corporation is a privately held battery wholesale and distribution company with operations across Canada, The United States (Mid-West) and Central America.
- We have been a leader in battery distribution since 1964; continuously building on an already expansive infrastructure, providing access to the industries best power solutions.
- Our distributed workforce and branch network expand our reach to consumers across the Americas, serving all markets with the same passion, loyalty, and premium products that we have been supplying to Canadians for over five decades.
- We are driven to be the best partner, to grow your business, to continue developing partnerships with the best manufacturers, best distributors, and the industries most knowledgeable staff.
- We are guided by our passion of bringing the most value to everyone we serve, offering local service on a national scale with global coverage and an international network.

Background:

- We offer the industries most advanced technology with the most comprehensive line of products, a distribution network par excellence, all delivered with a passion for building relationships that provide the most value to our consumers, distributors, workforce, and our manufacturing partners.
- Our humble beginning as a local battery manufacturer has fueled our commitment for developing the
 best products and service. We preserve our founding principles of offering complete stored energy
 solutions and the best batteries to market. Incessantly enhancing the customer experience has been
 and will continue to be our foundation.

Mission:

Our mission is to deliver industry leading service, advanced stored energy solutions, a complete distribution channel and to integrate green initiatives into our operation. We will continue to nurture a safe, healthy, and productive work environment while providing flexible and comprehensive business solutions with a customer-centric approach.

Business Model:

- Our distribution model offers a fleet of over sixty vehicles delivering batteries and related products across all markets every day. We remain committed to excellence as we deliver new products while offering inventory maintenance, stock rotation programs and scrap battery collection.
- Our key objective is ensuring peak performance, industry leading fill rates and access to products for the most unique requests, allowing you to focus on supporting your customers and growing your business.
- Our twenty-three and growing corporate branch locations offer consistency, immediate access to products and flexibility to meet your needs. We encourage creative thinking, innovative leadership, a fluid supply chain, inventory control solutions and the ease of doing business.
- Our structure urges regular on-site or virtual training to keep your staff and customers up to date with product advancement and the best solutions for their power needs.

Sustainability:

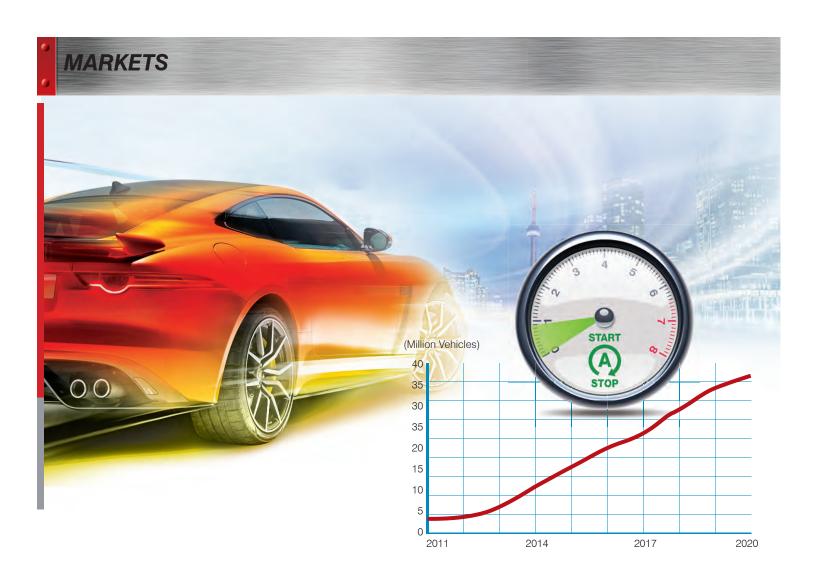
We are devoted to a complete battery recovery program focused on green sustainability in our business
and in all communities. Our battery exchange and scrap battery collection program will continue to fuel
our corporate and industry commitment of a complete closed loop process which has elevated lead-acid
batteries to be the number one recycled consumer good.

Summary:

- We are steadfast in providing the highest quality batteries, chargers, accessories, and components required to keep your equipment moving and maintained for years of extended reliable use.
- Our evolving product portfolio and local distribution points allow for instant access to battery products required to serve essential markets in the Automotive, Commercial, Industrial, Oil, Gas, Natural Resource, Military, Government, Medical, Leisure and Recreational sectors.
- Not only do we offer a complete product portfolio for original equipment manufacturers and aftermarket sales segments in any public or private sector we also remain devoted to after sale support as part of our pledge to strengthening partnerships. Our interests remain on assisting you to economically achieve your business goals while providing the highest quality products that you and your customers can confidently depend on
- We are excited to provide you with this introduction to Magnacharge Battery. It is a privilege to be your preferred supply chain partner, resource centre for all your battery needs, local partner, and a great place of employment.

For other brands and products please check online at

www.magnacharge.com



TRANSPORTATION AUTOMOTIVE | COMMERCIAL

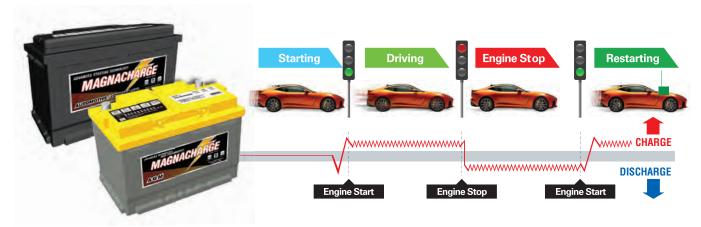
Automotive and Commercial vehicles can be powered with our complete line of Magnacharge batteries; available in premium advanced starting technology and an ever-increasing assortment of AGM technology to meet the demand placed on today's vehicle.

AGM separators, X-frame technology, reinforced casing, stronger charge acceptance, premium starting power, carbon additives & O.E fitment allow our products to meet the demands of urban intensive use, vehicles with heavily equipped electronic devices and the increased production of vehicles with ISS (Idle-Start-Stop) technology.

ISS (Idle-Start-Stop) technology communicates with the engine to shutdown when the vehicle is "idle" and restarts the engine when the vehicle begins acceleration. This technology helps reduce Co2 emission, offers increased fuel economy and improves the driving experience, it also requires optimized batteries that can accommodate the cycling requirements while the vehicle sits idle and the constant "start-stop" strain on the battery.

Our advanced starting technology and assortment of AGM options are engineered to provide the best power solutions to meet the increased demand and production of vehicles equipped with ISS technology and offers even greater performance for traditional ICE (Internal combustion engines).





Commercial vehicles demand nothing less than the most powerful, reliable and durable batteries. Advanced technology and premium materials have been engineered into the Magnacharge commercial series ensuring the best starting power, higher reserve capacity and cycling power to provide the most reliable experience in the commercial segment. We offer the perfect power solution as a result of innovative technology. Some key features are advanced calcium lead alloy (reducing water consumption), thicker plate design with durability to combat the damaging effects of vibration and offering more cyclic stability than other brands in the category. Polyethylene separators with fleece specifically designed for the harshest applications, labyrinth double lid with flame arrestor providing maintenance free service and additional safety. Power all diesel equipment and vehicles with a comprehensive line of solutions.

We guarantee to solve the problem and start your vehicle in the harshest conditions, using wet / flooded, AGM and other high-performance technologies to help you get to where you need to be, on time and worry free.

MAGNACHARGE ADVANCED STARTING TECHNOLOGY BATTERIES

Delivering outstanding product quality through innovative technology:



BATTERY STRUCTURE

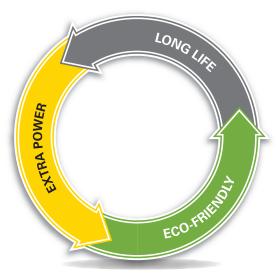
- X-Frame and High Durability Technology
- Enveloped glass mat separator for low electric resistance
 - Advanced center lug technology and cast on strap 3
 - Sealed double lid with flame arrestor
 - Integrated computer design and reinforced container 6
 - Magic eye indicator 6

Long Life • Enhanced Power • Reliable Performance

Improved Safety and Usability

X-FRAME TECHNOLOGY: MAXIMIZED POWER & ENHANCED STABILITY

Magnacharge Advanced Starting Technology produces patterned and fully framed grids through a manufacturing process called "stamping".



LONG LIFE

Rolling & Stamping Process

- Excellent corrosion resistance

Full Framed Grid Design

Outstanding mechanical performancePrevents grid growth & short circuits

EXTRA POWER

Radial Grid Design

Advance Centre Lug

- Ensures low electrical resistance
- Better power flow

ADDITIONAL FEATURES:

- Eco-friendly production process
- · Sealed maintenance free
- Stronger charge acceptance
- Lower discharge rates
- Less water consumption
- Vibration resistant

■ HIGH DURABILITY TECHNOLOGY: Extended Battery Life

Magnacharge Advanced Starting Technology provides extended life through high durability technology. Using cutting-edge materials, high durability technology protects the grid until the end of battery life and improves battery performance. Meet OE quality performance and specifications.

Ultra Micro-Fiber & Special Tissue

• Increases plate durability by reducing the aging-rate of active materials



ConventionalCommon Pulp Tissue



Magnacharge Advanced Starting Technology Special Tissue

^{*} These images of electron microscope show the surface of a tissue after a life cycle test.

AGM TECHNOLOGY

AGM(Absorbent Glass Mat) Separator

- Minimized electric resistance, half of flooded battery
- Provides outstanding cranking power, due to enhanced ionic transfer
- No Plate movement and completely spill and leak-proof
- Installation may be at any angle position

X-FRAME

- Full Frame with Stamped Grid Technology
- Longer life, advanced starting power, and Premium durability

UMF (Ultra Micro Fiber)

- Addition of fine fiber to active material
- Increases performance rate of active material

HDA (High Density Active-material)



• High pressure glass mat

- Prevents shedding of active material and as a result, ensures longer life

VRLA Sealed Construction advanced gas recombination Tech.

Valve Regulated Vent plug

- Stable cranking power
- Provides constant energy flow in each cell
- 100% leak-proof and safe handling







High Dimension of Grid Structure

- Provides more reaction surface area and increase of energy density

Valve Regulated Vent plug

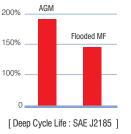
- Increase of energy density

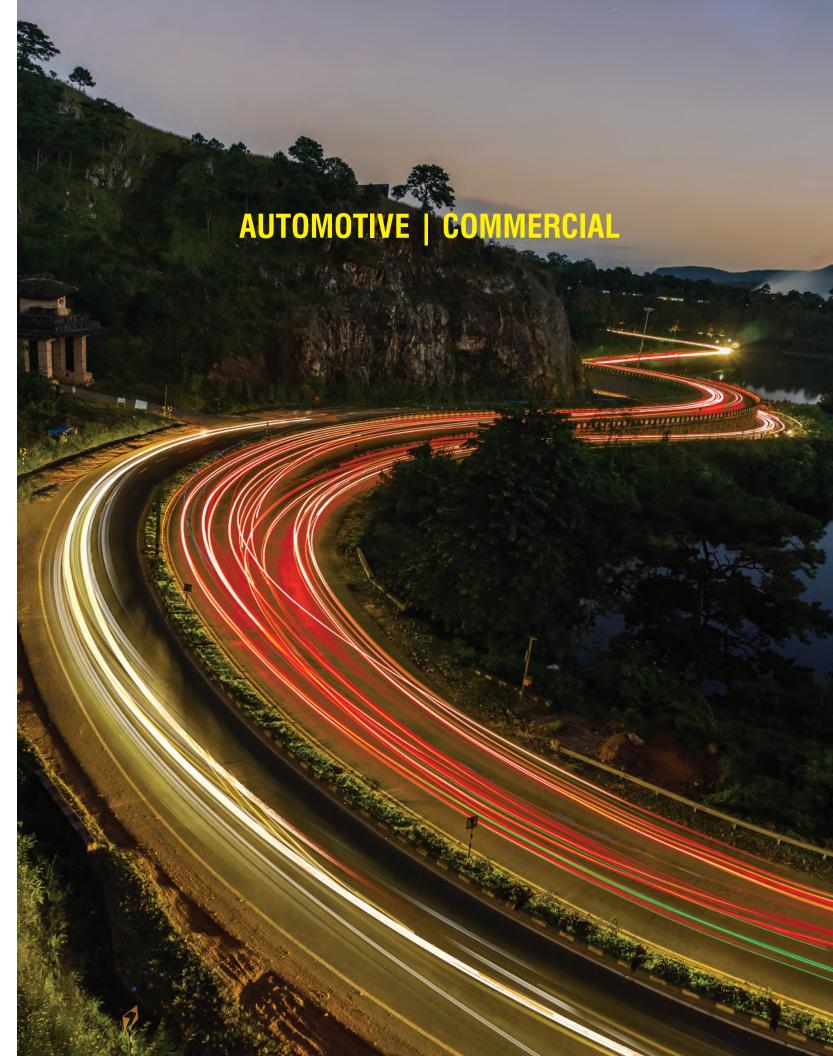
Reinforced Case Design

- Protects battery from vibration
- Provides consistent element compression

Benefits

High Performance	Long Life
- Excellent high rate discharge - Powerful cycle performance by high density active material	 Full Frame Stamped Grid with Ca-Sn alloy Electrolyte density is stable 2 times greater cycling ability over flooded Moderate discharge levels







Magnacharge Battery designed to provide ultimate performance for a wide range of premium vehicles that require higher power support.

Key Benefits:

- Absorbent Glass Mat separator
- X-Frame Technology
- Advanced Starting Power
- Vibration Resistant
- Stronger Charge Acceptance
- Longer Service Life
- For Domestic, European, Japanese Vehicle

SPECIFICATIONS:

		PERFORM	IANCE INFO	RMATION	Appro	x Dimension	(mm)	WARRAN	ITY MONTHS	Assault	TERMINAL	BATTERY
Par	rt #	CCA @ -17.8°C	CA @ 0°C	R/C @ 25A	Length	W idth	H eight	FREE REGULAR	FREE COMMERCIAL	Assembly Figure No.	CONFG.	HOLD DOWN
		12 VC	LT AUTOM	OTIVE STAI	RTING - TO	TERMINAL						
22F-525	MS22F-525	500	625	90	9.44	5.50	8.94	18	6	FIG.11F	Α	B1
24C-525	MS24C-525	450	550	80	10.25	6.81	9.00	18	6	FIG.10	Α	B1
24C-750	MS24C-750	600	750	115	10.25	6.81	9.00	30	12	FIG.10	Α	B1
24C-925	MS24C-925	750	925	155	10.25	6.81	9.00	40	18	FIG.10	Α	B1
24F-525	MS24F-525	450	550	80	10.25	6.81	9.00	18	6	FIG.11	Α	B1
24F-750	MS24F-750	600	750	115	10.25	6.81	9.00	30	12	FIG.11	Α	B1
24F-925	MS24F-925	750	925	155	10.25	6.81	9.00	40	18	FIG.11	Α	B1
25-625	MS25-625	550	675	100	9.06	6.94	8.88	30	12	FIG.10	Α	B1
26-700	MS26-700	550	675	100	8.19	6.81	7.75	30	12	FIG.10	Α	B1
26R-700	MS26R-700	550	675	100	8.19	6.81	7.75	30	12	FIG.11	Α	B1
27C-900	MS27C-900	750	925	155	12.06	6.81	8.88	40	18	FIG.10	Α	B1
27F-900	MS27F-900	750	925	155	12.06	6.81	8.88	40	18	FIG.11F	Α	B5
34-750	MS34-750	550	675	100	10.25	6.81	7.88	30	12	FIG.10	А	B1
34-850	MS34-850	670	825	130	10.25	6.81	7.88	40	18	FIG.10	Α	B1
35-625	MS35-625	550	675	100	9.06	6.94	8.88	30	12	FIG.11	Α	B1
36R-800	MS36R-800	650	815	130	10.38	7.19	8.13	30	12	FIG.19	Α	N/A
40R-750	MS40R-750	620	775	105	11.00	6.94	6.94	30	12	FIG.15	Α	B4
41-800	MS41-800	650	800	115	11.56	6.94	6.94	40	18	FIG.15	Α	B13
42-550	MS42-550	510	625	90	9.56	6.94	6.94	30	12	FIG.15	Α	B4
47-750	MS47-750	600	750	110	9.56	6.94	7.50	30	12	FIG.24	А	B13
48-850	MS48-850	760	950	150	11.00	6.93	7.50	30	12	FIG.24	А	B13
49-1050	MS49-1050	850	1050	180	13.94	6.94	7.50	30	12	FIG.24	Α	B13
51-530	MS51-530	430	525	80	9.38	5.06	8.75	40	18	FIG.10	Α	B1
51R-530	MS51R-530	430	525	80	9.38	5.06	8.75	40	18	FIG.11	А	B1
58-675	MS58-675	560	700	100	10.06	7.19	6.94	40	18	FIG.26	Α	B8
58R-675	MS58R-675	560	700	100	10.06	7.19	6.94	40	18	FIG.19	Α	B8
59-735	MS59-735	560	700	100	10.06	7.69	7.75	30	12	FIG.21	Α	B8
65-875	MS65-875	650	800	130	12.06	7.56	7.56	30	12	FIG.21	Α	B8
65-1100	MS65-1100	850	1100	150	12.06	7.56	7.56	40	18	FIG.21	Α	B8
85-650	MS85-650	550	675	90	9.06	6.81	8.00	30	12	FIG.11	Α	B1
86-650	MS86-650	550	675	90	9.06	6.81	8.00	30	12	FIG.10	Α	B1
90-625	MS90-625	500	625	90	9.56	6.94	6.94	30	12	FIG.24	A	B13
91-820	MS91-820	630	775	110	11.00	6.94	6.94	30	12	FIG.24	A	B13
92-800	MS92-800	650	800	125	12.44	6.94	6.94	30	12	FIG.24	A	B13
93-995	MS93-995	800	995	150	13.94	6.94	6.94	30	12	FIG.24	Α	B13
94R-1025	MS94R-1025	700	875	140	12.44	6.94	7.50	30	12	FIG.24	A	B13
95R-1050	MS95R-1050	850	1050	200	15.56	6.94	7.50	30	12	FIG.24	A	B13
96R-675	MS96R-675	590	725	90	9.50	6.94	6.94	30	12	FIG.15	A	B1
99R-560	MS99R-560	450	560	75	8.13	6.94	6.94	30	12	FIG.24	A	B13

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	Pa	art #		IANCE INFO		Appro	x Dimension	ı (mm)		NTY MONTHS	Assembly	TERMINAL	BATTERY HOLD
		41 t <i>11</i>	CCA @ -17.8°C	CA @ 0°C	R/C @ 25A	L ength	W idth	H eight	FREE REGULAR	FREE COMMERCIAL	Figure No.	CONFG.	DOWN
				12 VOLT AL	JTOMOTIVE	STARTING	- TOP TERM	ЛINAL					
	121R-625	MS121R-625	500	625	90	8.25	7.00	8.50	30	12	FIG.11H	A	B1
	124R-850	MS124R-850	680	850	140	10.38	7.00	8.63	30	12	FIG.11H FIG.24	A	B1
	140R-650 151R-450	MS140R-650 MS151R-450	590 370	650 450	110 60	8.13 7.44	6.94 4.94	7.50 8.88	30	12	FIG.24	A	B13 N/A
			27.2										7.,71
				12 VOLT AL	JTOMOTIVE	STARTING	- TOP TERM	/INAL		T	I		
	MIATA	MSMIATA	430	525	80	9.22	5.33	9.22	18	6	N/A	A3	B1
	NS40 NS40Z	MSNS40 MSNS40Z	330 330	400	56 56	7.40 7.36	4.93 5.00	8.97 8.67	18	6	N/A N/A	A A	N/A N/A
	NS40Z NS40L	MSNS40L	330	400	56	7.36	4.94	8.88	18	6	N/A	A3	N/A
	NS40Z	MSNS40Z	330	400	56	7.36	5.00	8.67	18	6	N/A	A3	N/A
	NS60	MSNS60	400	500	65	9.26	4.95	7.87	18	6	N/A	А	N/A
	70.005	M070 005			1	ı	- SIDE TERM	1	40	0	FIO 47	0	D4
	70-625 75-800	MS70-625 MS75-800	500 600	625 750	90	8.19 9.06	7.06 7.06	7.31 7.31	18 30	6	FIG.17	S	B1 B1
	75-850	MS75-850	700	875	130	9.06	7.06	7.31	40	18	FIG.17	S	B1
	78-800	MS78-800	600	750	110	10.25	7.06	7.31	30	12	FIG.17	S	B1
	78-950	MS78-950	750	925	155	10.25	7.06	7.31	40	18	FIG.17	S	B1
	101-650	MS101-650	650	800	98	10.25	7.06	6.69	30	12	FIG.17	S	N/A
				10 \/		DEAL DUAL	TEDMINIAL						
	70DT-550	MS70DT-550	400	500	OLT UNIVER	8.19	7.06	7.75	18	6	N/A	A+S	B1
	70DT-675	MS70DT-675	500	625	90	8.19	7.06	7.75	30	12	N/A	A+S	B1
	75DT-850	MS75DT-850	650	800	130	9.06	7.06	8.00	30	12	N/A	A+S	B1
	78DT-625	MS78DT-625	550	675	100	10.25	7.06	7.88	18	6	N/A	A+S	B1
	78DT-925	MS78DT-925	710	875	140	10.25	7.06	7.88	30	12	N/A	A+S	B1
	78DT-1000	MS78DT-1000	800	1000	155	10.25	7.06	7.88	40	18	N/A	A+S	B1
				12 VO	LT AUTOMO	OTIVE STAR	TING - AGM	1					
	24C-925AGM	MS24C-925AGM	750	925	140	10.25	6.81	9.00	42	18	FIG.10	Α	B1
	24F-925AGM	MS24F-925AGM	750	925	140	10.25	6.81	9.00	42	18	FIG.11F	Α	B1
	31-1000AGM	MS31-1000AGM	800	1000	180	13.00	6.81	9.44	20	18	FIG.18	T	N/A
	31A-1000AGM 31-1125AGM	MS31A-1000AGM MS31-1125AGM	950	1000	180 200	13.00 13.07	6.81	9.44	20	18 18	FIG.18 FIG.18	A T	N/A N/A
	34-850AGM	MS34-850AGM	750	925	120	10.20	6.81	7.91	42	18	FIG.10	A	B1
	35-625AGM	MS35-625AGM	550	675	85	9.06	6.94	8.88	32	12	FIG.11	A	B1
	47-750AGM	MS47-750AGM	600	750	110	9.56	6.94	7.50	32	12	FIG.24	А	B13
	48-950AGM	MS48-950AGM	760	950	150	11.00	6.94	7.50	32	12	FIG.24	Α	B13
	49-1050AGM	MS49-1050AGM	850	1050	180	13.94	6.98	7.50	32	12	FIG.24	A	B13
	51R-530AGM	MS51R-530AGM	325	400	70	9.38	5.06	8.75	32	12	FIG.11	A	N/A
	65-1000AGM 94R-1000AGM	MS65-1000AGM MS94R-1000AGM	775 800	965 1000	150 160	12.06 12.44	7.56 6.94	7.56 7.50	42 32	18 12	FIG.21 FIG.24	A A	N/A B13
-	95R-1050AGM	MS95R-1050AGM	950	1050	205	15.47	6.85	7.48	32	12	FIG.24	A	B13
-	140R-650AGM	MS140R-650AGM	570	725	80	8.19	6.85	7.48	32	12	FIG.24	Α	B13
	PRIUS	MSPRIUS	325	400	70	7.76	5.08	8.94	12	6	N/A	АЗ	N/A



The economy relies on our natural resources, the products it produces, its global requirements and the jobs it creates. Power essential material handling equipment and the fleet required to deliver these essential resources that our industries rely on with Magnacharge premium AGM, Magnacharge advanced starting technology and our Premium Magnacharge 6V / 8V and 12V Deep cycle solutions.

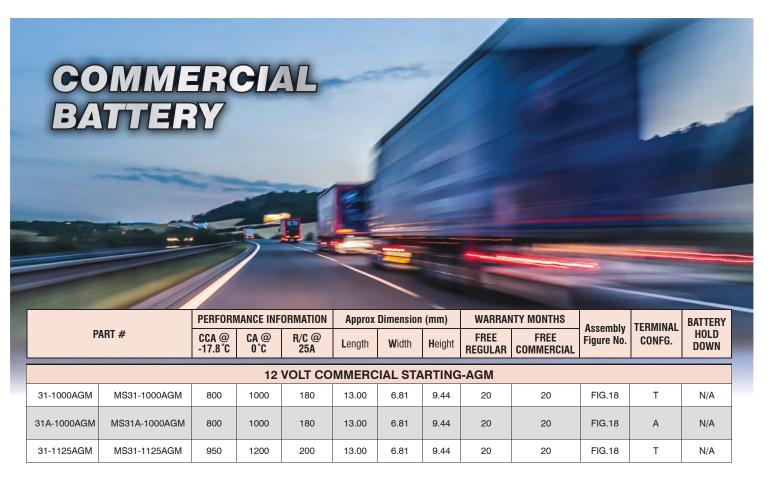




Vibration Resistant

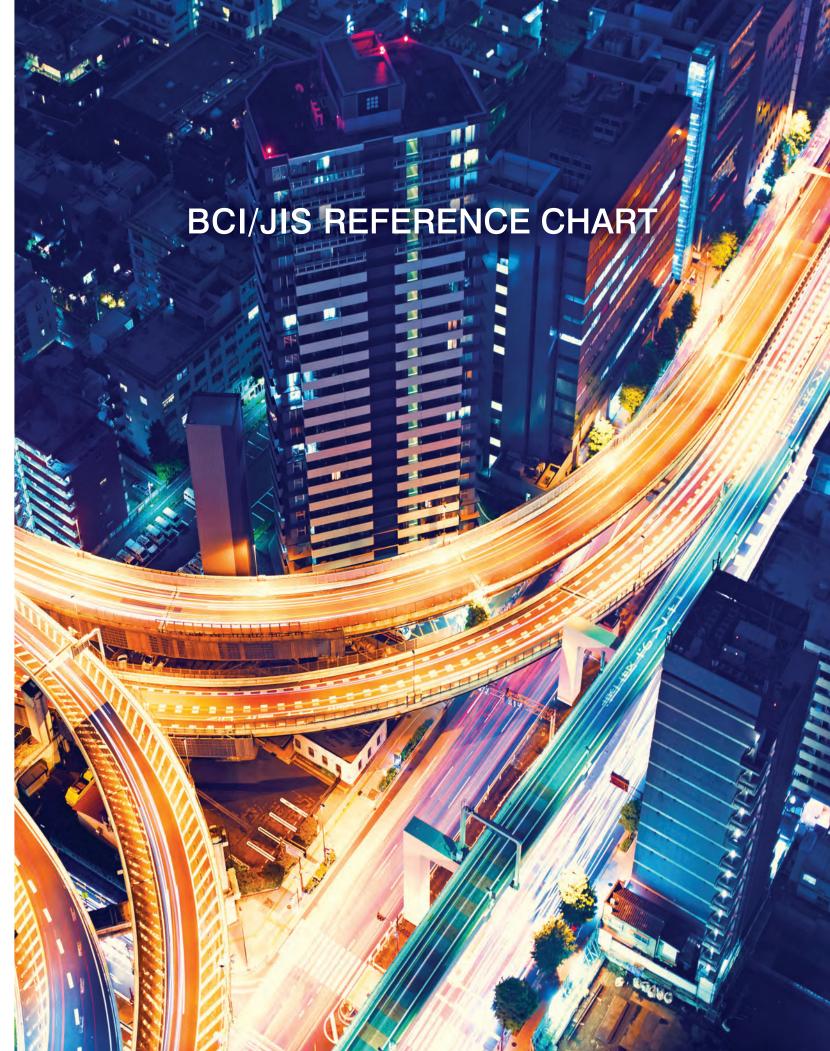
SPECIFICATIONS:

PART #		PERFORMANCE INFORMATION			Approx	k Dimension	(mm)	WARRAN	ITY MONTHS	Accombly	y TERMINAL	BATTERY
		CCA @ -17.8°C	CA @ 0°C	R/C @ 25A	Length	W idth	H eight	FREE REGULAR	FREE COMMERCIAL	Figure No.	CONFG.	HOLD DOWN
			6 VOLT	COMME	RCIAL TE	RUCK, FA	ARM AND	EQUIPM	1ENT			
1-725	MS1-725	540	675	135	9.13	7.13	9.38	12	6	FIG.2	Α	N/A
2-825	MS2-825	650	800	175	10.38	7.13	9.38	12	6	FIG.2	Α	N/A
3EH-1025	MS3EH-1025	800	1000	240	19.31	4.38	9.19	12	6	FIG.5	А	N/A
4-1350	MS4-1350	1000	1250	290	13.13	7.13	9.38	12	6	FIG.2	Α	N/A
	•						•					
	12 VOLT FARM TRACTOR AND EQUIPMENT											
3EE-525	MS3EE-625	440	550	100	19.31	4.38	8.88	12	6	FIG.9	Α	N/A
4DLT-1125	MS4DLT-1125	900	1125	200	20.00	8.19	7.94	12	12	FIG.16L	Α	N/A
12 VOLT COMMERCIAL TRUCK, BUS AND EQUIPMENT												
30H-850	MS30H-850	830	1025	182	13.50	6.81	9.25	18	18	FIG.10	Α	B1
31-875DC	MS31-875DC	700	875	180	13.00	6.81	9.44	12	12	FIG.18	Т	N/A
31-875S	MS31-875S	700	875	150	13.00	6.81	9.44	12	12	FIG.18	Т	N/A
31-1125S	MS31-1125S	925	1125	190	13.00	6.81	9.44	18	18	FIG.18	Т	N/A
31-1125A	MS31-1125A	925	1125	190	13.00	6.81	9.44	18	18	FIG.18	Α	N/A
31-1250S	MS31-1250S	1000	1250	200	13.00	6.81	9.44	24	24	FIG.18	Т	N/A
31-1250A	MS31-1250A	1000	1250	200	13.00	6.81	9.44	24	24	FIG.18	Α	N/A
4D-1250M	MS4D-1250M	1000	1250	300	20.75	8.75	9.81	18	18	FIG.8	Α	В0
4D-1250	MS4D-1250	1000	1250	300	20.75	8.75	9.81	18	18	FIG.8	Α	N/A
8D-1250	MS8D-1250	1100	1320	370	20.75	11.13	9.81	12	12	FIG.8	Α	N/A
8D-1600M	MS8D-1600M	1350	1650	530	20.75	11.13	9.81	24	24	FIG.8	Α	В0
8D-1600	MS8D-1600	1300	1625	450	20.75	11.13	9.81	18	18	FIG.8	Α	N/A
8D-1750	MS8D-1750	1400	1750	500	20.75	11.13	9.81	18	18	FIG.8	Α	N/A
N-100	MSN-100	700	875	180	16.13	6.75	9.00	12	12	N/A	Α	N/A
N-120	MSN-120	800	1000	180	19.92	7.17	9.38	12	12	N/A	Α	N/A
64020	MS64020	900	950	250	20.12	7.41	7.68	12	12	N/A	Α	В0



PART #		PERFORM	ANCE INFO	RMATION	Approx	x Dimension	(mm)	WARRAN	ITY MONTHS	Assembly	TERMINAL	BATTERY HOLD DOWN
		CCA @ -17.8°C	CA @ 0°C	R/C @ 25A	L ength	W idth	H eight	FREE REGULAR	FREE COMMERCIAL	Figure No.	CONFG.	
	12 VOLT GARDEN, TRACTOR AND SNOWMOBILE											
U1-280	MSU1-280	210	260	30	7.75	5.19	7.31	12	6	FIG.10	X	N/A
U1R-280	MSU1R-280	210	260	30	7.75	5.19	7.31	12	6	FIG.11	х	N/A
U1-425	MSU1-425	300	375	40	7.75	5.19	7.31	12	6	FIG.10	Х	N/A
U1R-425	MSU1R-425	300	375	40	7.75	5.19	7.31	12	6	FIG.11	Х	N/A





BCI / JIS REFERENCE CHART

Best Fit Estimate - BCI Group Size

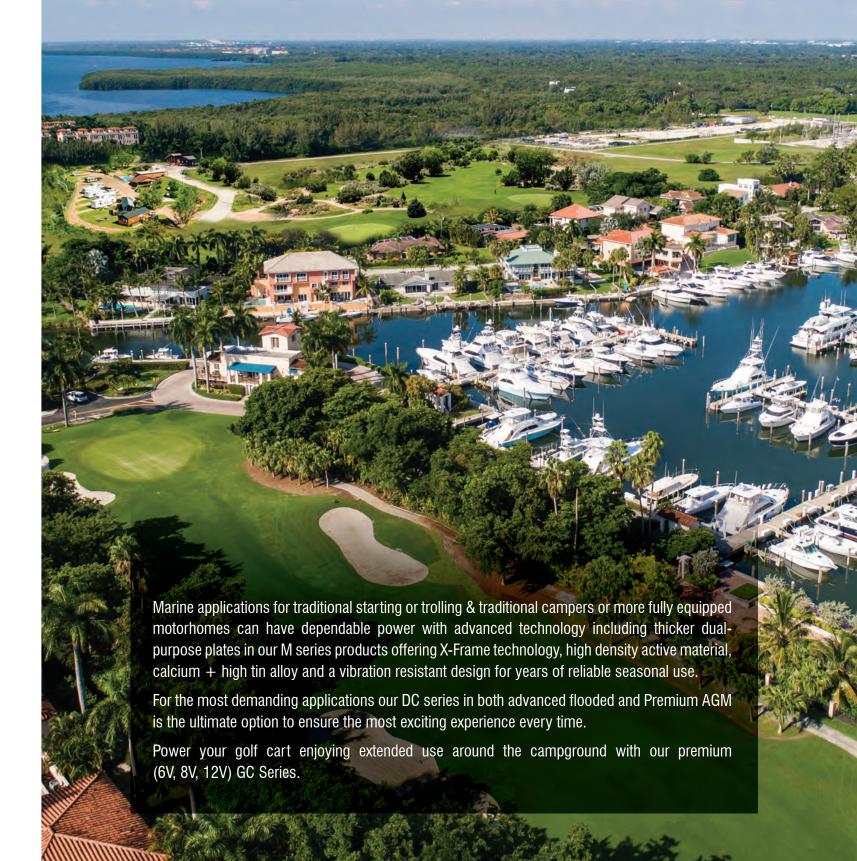
BCI	BCI	Maximu	m Overall Dim	ensions	HC Defended Circ Number Inform	matica
Group	Assembly		Millimeters		JIS Reference Size Number Infor	mation
Number	Figure	L	W	Н	JIS Type Designation	Conventional
21	10	202	173	225	50D20R	N50S
21R	11	202	173	225	50D20L	N50SL
24	10	260	173	225	48D26R, 55D26R, 65D26R, 75D26R, 80D26R, 110D26R	N50, N50Z, NS70
24R	11	260	173	225	48D26L, 55D26L, 65D26L, 75D26L, 80D26L, 110D26L	N50L, N50ZL, NS70L
25	10	232	173	225	55D23R, 65D23R, 70D23R, 75D23R, 80D23R	
27	10	306	173	225	65D31R, 75D31R, 95D31R, 105D31R, 115D31R	N70, N70Z, NX120
27R	11	306	173	225	65D31L, 75D31L, 95D31L, 105D31L, 115D31L	N70L, N70ZL, NX120-7L
29H®	10	410	176	234	95E41R, 105E41R, 115E41R, 130E41R	N100
N/A	_	410	176	234	95E41L, 105E41L, 115E41L, 130E41L	N100L
35	11	232	173	225	55D23L, 65D23L, 70D23L, 75D23L, 80D23L	
51®	10	238	129	227	46B24R, 55B24R, 65B24R	N40, NS60
51RN	11	238	129	227	46B24L, 55B24L, 65B24L	N40L, NS60L
151RN	28	187	127	227	28B19L, 44B19L (S) (SAE Type A Post)	NS40L(S), NS40ZL(S)
4D	8	505 508	182 222	257 257	115F51©, 145F51©, 150F51©, 170F51© 145G51, 165G51, 180G51, 195G51	N120@ / NS150@ N150
8D	8	521	278	270	190H52, 210H52, 245H52	N200
N/A®	11	194	126	224	S34B20L@- Toyota Prius: Remote Venting	
N/A	10	165	124	218	S34B24R@- Honda Insight	
N/A	11	248	127	190	46A24L- Mazda Miata: Remote Venting	
N/A	_	167	127	227	26B17L, 26B17R, 28B17L, 28B17R, 34B17L, 34B17R	
N/A	_	187	127	184	26A19L, 26A19R, 28A19R, 32A19R	
N/A	_	187	127	227	34B19L, 34B19R, 38B19L, 38B19R	
N/A	_	238	135	232	32C24L, 32C24R	
N/A	_	197	129	227	\$34B20L@, \$34B20R@, 36B20L, 36B20R, 38B20L, 38B20R	
N/A	_	238	127	227	S46B24L@ (WS), S46B24R@ (WS)	
N/A	_	232	173	225	S55D23L@, S55D23R@	
N/A		250	168	227	S65D26L@, S65D26R@	
N/A	_	305	173	225	S75D31L@, S75D31R@	N70Z, N70ZL

- N OEM post may be small diameter JIS size, connector change may be required
- BCI designated Group 4D is 38 mm wider than
 JIS part, 4D will fit most JIS applications
- P BCI Group 29H is 76 mm shorter in length than JIS Designated part
- OE Battery is valve regulated lead battery

JIS Number Interpretation



MOTORHOMES BOATS GOLF CARTS AGV





SPECIFICATIONS:

			RES	A.H.	Approx	Dimension - Inch	es(mm)	WARRANTY MUNTHS		TERMINAL	BATTERY
PAR	T#	MCA	@ 25A	@ 20 HR	L ength	W idth	H eight	FREE REGULAR	FREE COMMERCIAL	CONFG.	HOLD DOWN
			MAGN	IACHARGE	12V MARINE ST	ARTING/DUAL P	URPOSE				
24M-650	MS24M-650	600	70	N/A	10.25 (260)	6.77 (172)	8.66 (220)	18	6	M	B1
24M-800	MS24M-800	750	105	N/A	10.25 (260)	6.77 (172)	8.66 (220)	24	6	M	B1
24M-1000	MS24M-1000	950	140	N/A	10.25 (260)	6.77 (172)	8.66 (220)	30	6	М	B1
27M-1000	MS27M-1000	1000	160	N/A	11.89 (302)	6.77 (172)	8.66 (220)	30	6	М	B1
	MAGNACHARGE 12 VOLT AGM DEEP CYCLE										
24DC-140AGM	MS24DC- 140AGM	900	140	75	10.23 (260)	6.85 (174)	8.66 (220)	20	12	М	B1
27DC-180AGM	MS27DC- 180AGM	900	175	90	11.89 (302)	6.85 (174)	8.66 (220)	20	12	М	B1
31DC-205AGM	MS31DC- 205AGM	1140	200	100	13.07 (332)	6.77 (172)	9.09 (231)	20	12	М	N/A
				MAGN	IACHARGE 12V	DEEP CYCLE					
24DC-130	MS24DC-130	700	120	80	10.12 (257)	6.77 (172)	8.66 (220)	18	6	М	B1
24DC-140	MS24DC-140	850	140	85	10.12 (257)	6.77 (172)	8.66 (220)	18	6	М	B1
27DC-180	MS27DC-180	925	175	105	11.89 (302)	6.77 (172)	8.66 (220)	18	6	М	B1
31DC-205	MS31DC-205	1000	195	120	12.99 (330)	6.77 (172)	9.53 (242)	18	6	М	В0
	MAGNACHARGE 6V, 8V, 12V DEEP CYCLE										
GC-225	MSGC-225	N/A	440	220	10.30 (262)	7.11 (181)	11.07 (281)	18	12	LPT	N/A
GC8-875	MSGC8-875	N/A	300	156	10.21 (259)	7.06 (179)	11.14 (283)	18	12	LPT	N/A
GC-12V	MSGC-12V	N/A	260	140	12.96 (329)	7.13 (181)	10.71 (272)	18	12	LPT	N/A

(deep cycling) and starting

WARRANTY MONTHS

BATTERIES FOR MARINE & RV

Features	Benefits
Dual Purpose Plate(Starting & Deep Cycling)	Longer Life & High Cycle Stability
- X-Frame (Pos. / Neg.)	- High endurance in deep cycle service
- Special (Thicker) Plate with high density active material	- Flexible design for semi-traction (deep cycling) and starting
- Calcium + High Tin Alloy	- Prevents internal short circuits
- Special tissue & Micro Fibre	- More power to terminal posts
	- Reserves more electrolyte volume over the plate
Vibration Resistant Design	
Low resistance enveloped separator with Glass MatHot melt glueReinforced container	Built to withstand vibration of marine, 4WD and heavy vehicle use

X-Frame (Pos. / Neg.)

Full Framed Grid (Round edge design)



- Full Framed Grid design restrains grid growth and short-circuits Benefit: Upgraded quality, and longer life span

Unique designed grid for electric flow

- Mechanically punched grids, ensures high electric conductance and strong adhesion of active materials Benefit: Providing higher starting power, stable structure, and less corrosion



Upgraded Active Material

- Provides high endurance in deep cycle service



Low Resistance Enveloped Separator with Fleece

- Prevents internal short circuits between positive and negative plates

Common Structure & Advantage (Marine & RV)

Convenience and stability

Ergonomically Designed Handle

- Provides easy transportation and installation



Special Sealed Cover

- Protects the battery from acid leakage and minimizes gassing
- Flame arrestor prevents an inflow of outside spark



Excellent Performance

Hot Melt Glue to resist vibration

- Ensures resistance to outside impact and vibration, and minimizes loss of active materials



Magic Eye Indicator

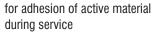
- Easy to check Charging-State

Marine Twin (Dual=SAE/Wing-Nut) Terminal

- Quick connection
- Compatibility with TOP POST and STUD

Special Tissue





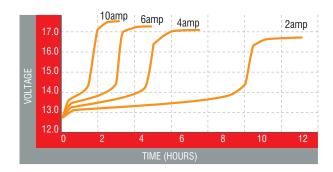


5/16 "-18 THREADS

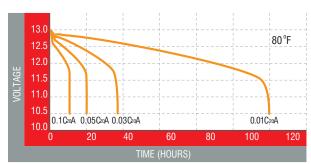
BATTERIES FOR MARINE & RV

Charge and Discharge Charateristics

Charge characteristics from 20% DOD, 31DC-205



Discharge characteristics



Charging Method

- Batteries should be recharged immediately after use
- Charging times vary and rate can be determined by the SOC(State Of Charge)

Method 1; Constant Voltage Charge (Recommended Method)

Туре	Voltage Setting
Daily Cycle Service	14.4~14.8
Floating Service	13.2~13.7
Equalizing	15.5

* Unit Average at 77 °F (25 °C)

■ Every 30 to 90 days, perform an equalizing charge. Daily cycle use and deep discharge requires more frequent equalizing

End of charge

- Current : below 1.0A during charge
- Stabilized open circuit voltage : 12.75V or higher

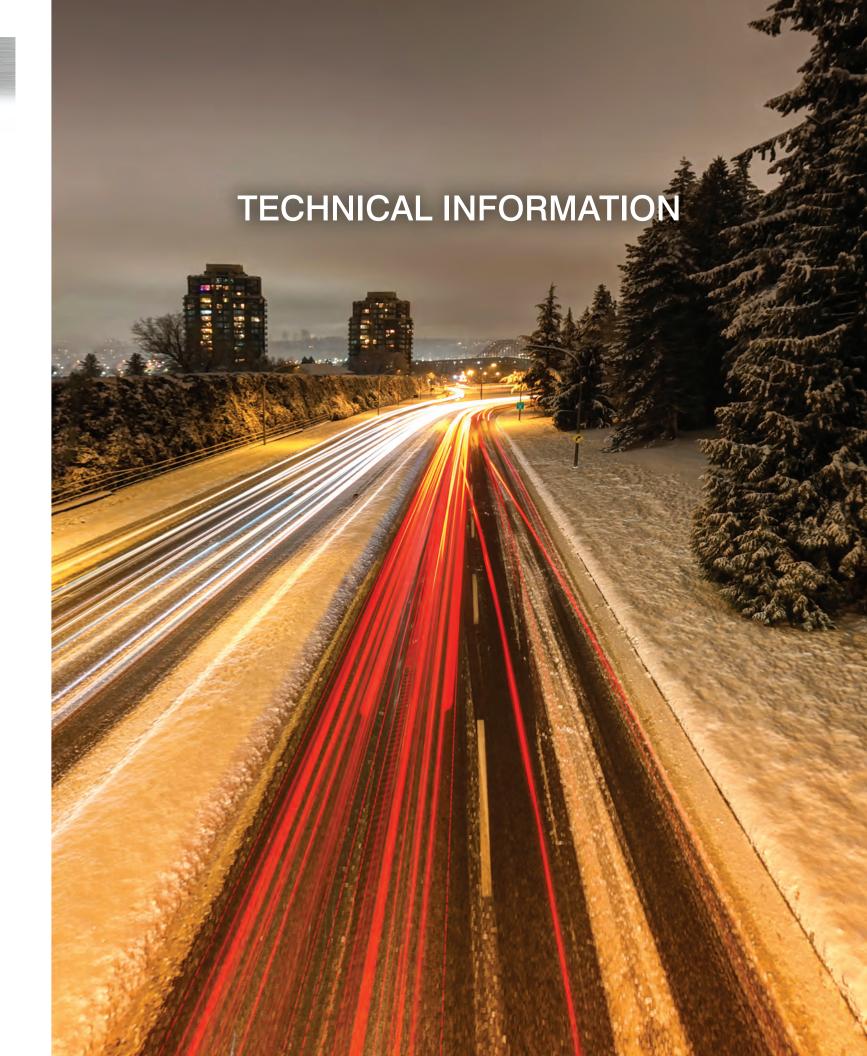
Method 2; Constant Current charge

	Battery	24DC140	27DC180	31D205	
SOC	OCV	4.0A	4.5A	5.0A	
100%	12.75V		-		
75%	12.40V	6 Hrs			
50%	12.20V		12 Hrs		
25%	12.00V		18 Hrs		
0%	11.90V		24 Hrs		

End of charge

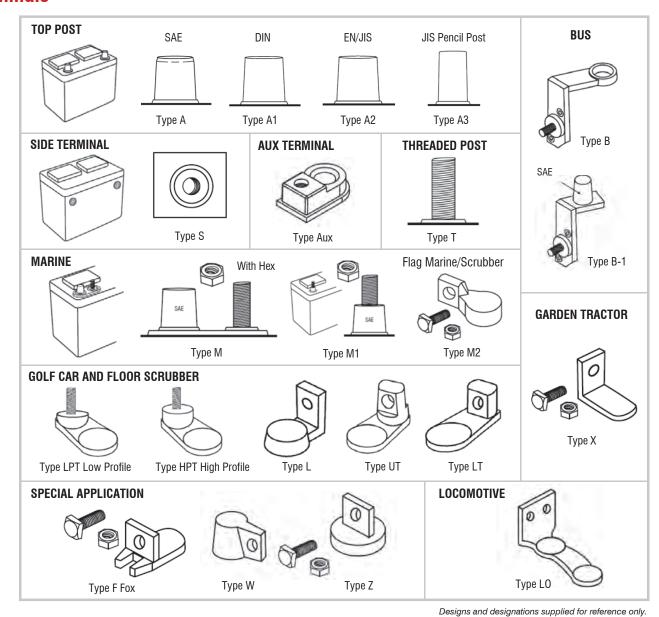
- Maximum voltage output across the battery terminals is maintained at constant level for 2 hours during the charge
- Stabilized open circuit voltage: 12.75V or higher

	Hours of Usable Power(H.U.P)								
Amp.Draw	5A	15A	25A						
24DC140	15.4Hrs.	4.3Hrs.	2.4Hrs.						
27DC180	17.8Hrs.	4.9Hrs.	2.7Hrs.						
31DC205	20.0Hrs.	5.6Hrs.	3.1Hrs.						

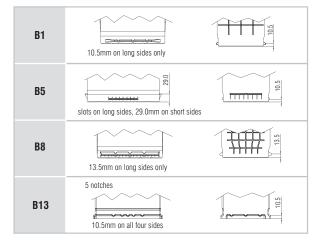


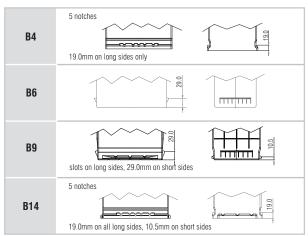
TECHNICAL INFORMATION

Terminals



Hold Down

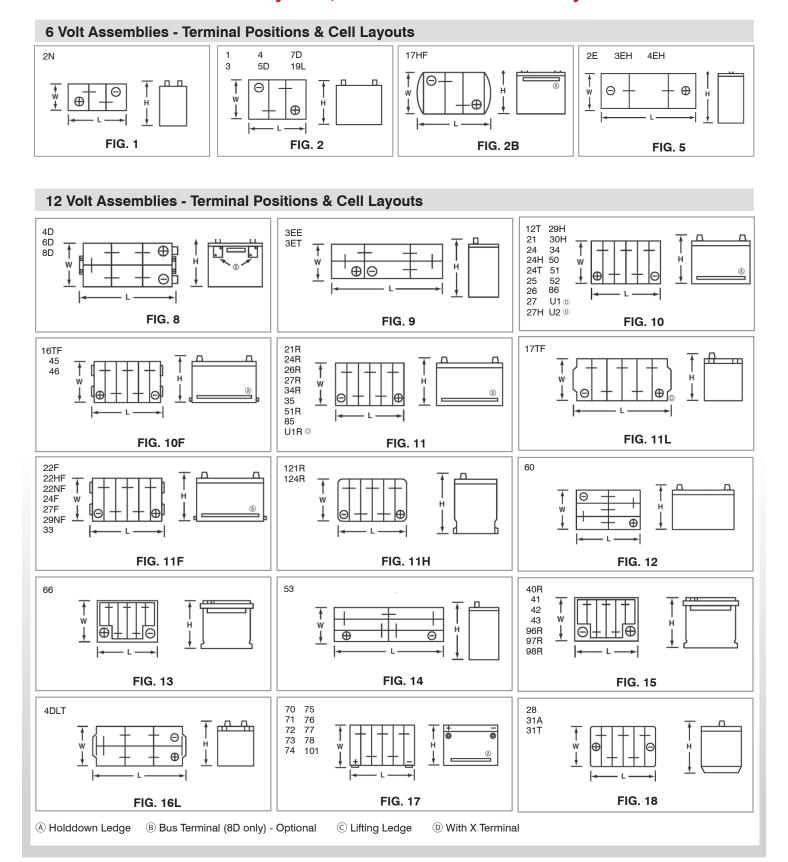




^{*} For B0 there is no Hold-Down

TECHNICAL INFORMATION

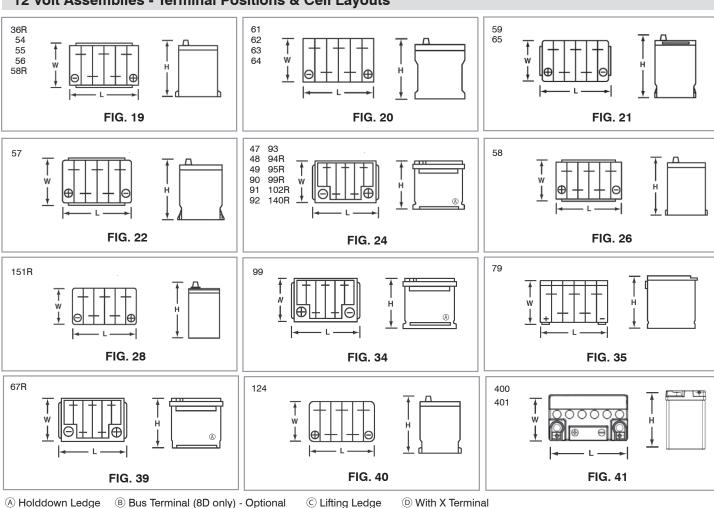
BCI Assembly Numbers, Cell Layouts, Holddowns and Polarity



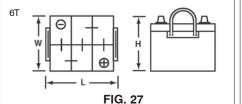
TECHNICAL INFORMATION

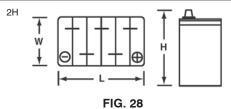
BCI Assembly Numbers, Cell Layouts, Holddowns and Polarity

12 Volt Assemblies - Terminal Positions & Cell Layouts

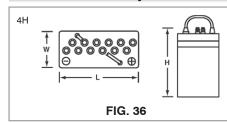


Ordinance Batteries 12-Volt - Terminal Position & Cell Layouts

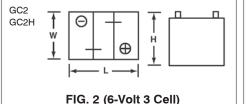


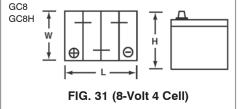


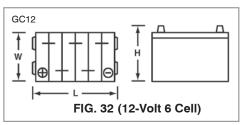
Ordinance Battery 24-Volt



Electric Golf Car/Utility Batteries - Terminal Position & Cell Layouts







TECHNICAL INFORMATION



PRECAUTION

If treated with care and taking the proper precautions, lead acid batteries can be handled safely with minimum risk. However, lead acid batteries contain sulfuric acid which is both poisonous and corrosive. This makes them potentially hazardous and it can cause serious injury when standard handling procedures and safety measures are not followed.

Safety

- · Always wear acid resistant clothing, protective goggles, PVC gloves and safety shoes.
- · Keep metal objects away from terminals.
- Batteries are heavy. Lift carefully and do not place on unstable surfaces.
- · Keep away from children.

Emergency Action

- Splashes in eyes: Wash out eyes with plenty of water for at least 15 minutes.
- Splashes on skin: Remove contaminated clothing carefully and wash the affected skin areas with plenty of water.
- · Swallowed: Drink copious amounts of water or milk. Do not induce vomiting

Storage

- · Keep batteries upright.
- · Batteries should not be directly exposed to the sun.
- Keep batteries clean and always store in a cool, dry place.
- Never stack over 4 layers.
- In all cases, (First In, First Out) storage procedure should be applied.

Installation

- · Check that vehicle's engine is turned off.
- · Remove the negative terminal connection of the old battery.
- · Remove the positive terminal connection, and then remove the hold-down bracket or clamp.
- Remove the old battery and install new battery in the tray
- Prior to replacing the new one, inspect the tray for corrosion. Clean the battery tray and battery terminals using a wire brush, if necessary.
- Connect the negative terminal. The positive terminal should always be connected last.

Disposal

- Batteries must NEVER be disposed of in household waste.
- Batteries are recyclable material.
- Do not throw away.



















flames.no sparks





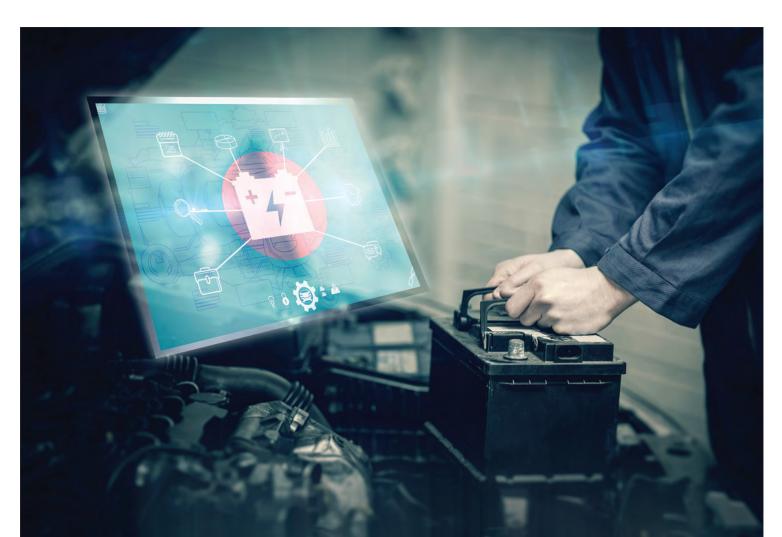












BATTERY TESTING PROCEDURES

A. Visual Check

- Check the Container, Cover and Terminals. Where physical damage is present, replace the battery.
- Check the Indicator (If the battery has the Indicator). When viewing the Indicator, lightly tap the Indicator on the battery to dislodge any air bubbles.

B. Voltage Check

• If OCV is below 12.4V, recharge the battery immediately.

C. Discharge Test (Load Test)

- Connect the battery tester to battery terminals.
- Apply the load for 15 seconds and then read the voltage.
- Compare measured values with values in TABLE 2.
- If the values are outside of the table values, recharge the battery and test again.
- If the battery fails the load after multiple cycle tests, replace it.
- Electronic testers are not recomended as they may provide false test results and can not consistently rate the performance of new or unused batteries.
- Carbon pile load testers are recommended.









TABLE 1. State of Charge

Approx. State of Charge	ocv
100%	12.75V
75%	12.40V
50%	12.20V
25%	12.00V
Discharged	11.90V

^{*} For Reference Only

TABLE 2. Load Test

Minimum Voltage	Temperature
9.6V	21°C & Above
9.4V	10°C
9.1V	-1°C
8.9V	-7°C
8.5V	-18°C

BATTERY CHARGING PROCEDURE

If the battery is below 12.4V or fails to pass the load test, battery must be recharged as soon as possible to prevent lead sulfation. During charge, if the battery releases electrolyte through the vent holes or overheats (over 52°C), the charge must be stopped allowing the battery to cool down.



Constant Current Charge

General guidelines for constant-current-charge are given in TABLE 3. The table summarizes approximate amperes and hours in need of charge according to 20Hr-rate capacity and OCV.

Constant Voltage Charge

As the battery is being charged, the current is reduced. Generally this method needs more time than the constant-currentcharge, but overcharge risk is lower.

End of Charge

If a battery has been properly charged, voltage output across battery terminals on charge will be maintained for 2 hours.

TABLE 3. Constant Current Charge Condition

ocv	31-40AH	41-50AH	51-60AH	61-70AH	71-80AH	81-90AH	91-100AH	101-110AH
12.4-12.49V	4X3	5X3	6X3	7X3	8X3	9X3	10X3	11X3
12.3-12.39V	4X5	5X5	6X5	7X5	8X5	9X5	10X5	11X5
12.2-12.29V	4X7	5X7	6X7	7X7	8X7	9X7	10X7	11X7
12.1-12.19V	4X8	5X8	6X8	7X8	8X8	9X8	10X8	11X8
12.0-12.09V	4X10	5X10	6X10	7X10	8X10	9X10	10X10	11X10
Below 11.99V	4X13	5X13	6X13	7X13	8X13	9X13	10X13	11X13



Every Battery. Every Purpose. Every Time.

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• 4517 Manhattan Rd., SE Calgary, AB T2G 4B3

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