

2021 AURORA Battery Catalogue



AURORA®

AGM
Absorbent Glass
Mat Battery

EFB
Enhanced Flooded
Battery

UHPB
Ultra High Performance
Battery

SMF
Sealed Maintenance
Free Battery

Trust AURORA's Innovative Technology

Take a powerful ride with AURORA starter batteries.

Whether it's for an entry level vehicle or a high-end performance car, AURORA batteries provide reliable starting power that goes all the way through to the end of your journey.

As always, AURORA's outstanding product quality is the result of our innovative technology.

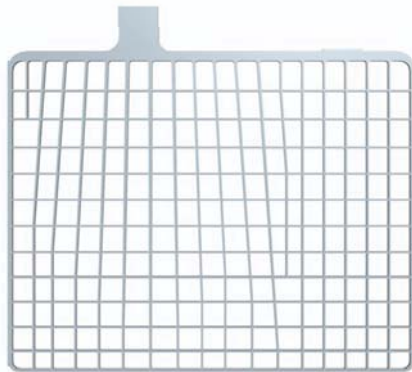


● *X-Frame Technology*

○ MAXIMIZED POWER & ENHANCED STABILITY

AURORA's X-FRAME Technology produces patterned and fully frame grids through a manufacturing process called "stamping".

Compared to conventional batteries with expanded metal grid, AURORA batteries deliver longer life and stable power flow.



The Advanced Grid Structure for Long Life

- Full Framed Grid Design : prevents grid growth and short from exposed wire
- The latest production process : Continuous and high precision punching process ensures robust structure and excellent adhesion of the active mass paste.

The Advanced Grid Design for Extra Power

- Built for maximum flow of current, the advanced grid design enable faster recharge acceptance and optimal conductivity. The design ensures there is more lead where electrical current is the greatest.

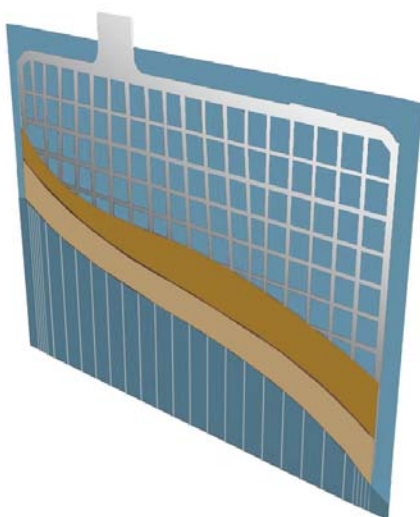
Eco-Friendly

- Production process is more eco-friendly.

● *High Durability Technology*

○ EXTENDED BATTERY LIFE

AURORA batteries provide extended life cycle through the HIGH DURABILITY TECHNOLOGY. Using cutting-edge materials, the HIGH DURABILITY PLATE SYSTEM protects the grid until the end of the battery life and improves the Battery performance

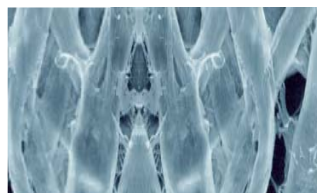


Provides Lasting Reinforcement

Reinforced active mass with ultra micro fiber provides better service life to ensure highly bonding strength of lead dioxide.

Significant Improvement in Plate Protection

Nonwoven Tissue Increases plate durability by significantly reducing loss of active mass.



Conventional
Common Pulp Tissue



AURORA
Nonwoven Tissue

Advanced absorbent glass mat Battery Technology

Start Stop AGM Series, the primary choice of vehicle manufacturers, is specially designed to meet and even go beyond all requirements of advanced start stop vehicles heavily equipped with electronic devices, which are the most prestigious vehicles.



Core Technology

- VRLA AGM Tech.
- X-Frame plus
- Carbon plus
- Ultra Micro Fiber

Advantages

- 4x longer idling stop life cycle
- Charge acceptance 150% up
- Starting power 130% up
- Optimal safety for passenger compartment installation

12V Automotive / AURORA AGM Technology										
Gr.No	Type No.	Capacity	CCA (EN)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
L1	SA 55020	50	540	208	174	190	190	0	A	B13
L2	SA 56020	60	680	242	174	190	190	0	A	B13
L3	SA 57020	70	760	277	174	190	190	0	A	B13
L4	SA 58020	80	800	314	174	190	190	0	A	B13
L5	SA 59520	95	850	352	174	190	190	0	A	B13
L6	SA 60520	105	950	393	174	190	190	0	A	B13

Advanced Enhanced Flooded Battery Technology

Start Stop with EFB Series, the primary choice of vehicle manufacturers, is specially designed to meet and even go beyond all requirements of entry start stop vehicles heavily equipped with electronic devices.



Core Technology

- X-Frame plus
- Thicker Plate
- Carbon plus
- Ca/Ca

Advantages

- 3x longer idling stop life cycle
- Improved dynamic charge acceptance 130%
- Starting power 115% increase
- Rapid charging through latest carbon plus Tech.

12V Automotive / AURORA EFB Technology										
Gr.No	Type No.	Capacity	CCA (EN)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
L2	SE 56010	60	560	242	174	190	190	0	A	B13
LB3	SE 56510	65	650	277	174	175	175	0	A	B13
L3	SE 57010	70	650	277	174	190	190	0	A	B13
LB4	SE 57510	75	730	315	174	175	175	0	A	B13
L4	SE 58010	80	730	315	174	190	190	0	A	B13
L5	SE 59510	95	900	354	174	190	190	0	A	B13
L6	SE 61010	110	950	393	174	190	190	0	A	B13
Gr.No	Type No.	Capacity	CCA (SAE)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
B20	SE M42(55B20L)	40	420	196	127	200	220	0	A(B)	B0
	SE M42R(55B20R)	40	420	196	127	200	220	1	A(B)	B0
B24	SE N55(70B24L)	45	460	234	127	200	220	0	A(B)	B0(B1)
D23	SE Q85(90D23L)	65	670	230	172	200	220	0	A	B0(B1)
	SE Q85R(90D23R)	65	670	230	172	200	220	1	A	B0(B1)
D26	SE S95(100D26L)	68	730	257	172	200	220	0	A	B0(B1)
D31	SE T110(115D31L)	80	800	302	172	200	220	0	A	B0(B1)

Ultra High Performance Battery Technology

UHPB (Ultra High Performance Battery) Series is specially designed for better performance with longer life and more power to endure extreme driving condition and reliable quality to meet premium automotive technology.



Core Technology

- X-Frame plus
- Ca/Ca
- Carbon plus
- Heat sealed lid

Advantages

- 30% enhanced starting power
- Fast and powerful start with X-Frame Technology
- Enduring and consistent power performance with High Durability Tech.
- The carbon plus technology reduces the charging time

12V Automotive / AURORA UHPB Technology										
Gr.No	Type No.	Capacity	CCA (EN)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
L1	UMF55600	56	570	207	174	190	190	0	A	B13
LB2	UMF56000	60	600	242	174	175	175	0	A	B13
L2	UMF56800	68	600	242	174	190	190	0	A	B13
	UMF56801	68	600	242	174	190	190	1	A	B13
LB3	UMF57400	74	750	277	174	175	175	0	A	B13
	UMF57401	74	750	277	174	175	175	1	A	B13
L3	UMF57800	78	780	277	174	190	190	0	A	B13
LB4	UMF58000	80	800	315	174	175	175	0	A	B13
L4	UMF59000	90	800	315	174	190	190	0	A	B13
	UMF59001	90	800	315	174	190	190	1	A	B13
L5	UMF60500	105	850	354	174	190	190	0	A	B13
L6	UMF61000	110	950	393	174	190	190	0	A	B13

12V Automotive / AURORA UHPB Technology										
Gr.No	Type No.	Capacity	CCA (SAE)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
B19	UMF55B19R	45	400	187	127	200	220	1	B	B0(B1)
	UMF55B19L	45	400	187	127	200	220	0	B	B0(B1)
	UMF55B19RS	45	400	187	127	200	220	1	A	B0(B1)
	UMF55B19LS	45	400	187	127	200	220	0	A	B0(B1)
B24	UMF75B24R	55	500	234	127	200	220	1	B	B0(B1)
	UMF75B24L	55	500	234	127	200	220	0	B	B0(B1)
	UMF75B24RS	55	500	234	127	200	220	1	A	B0(B1)
	UMF75B24LS	55	500	234	127	200	220	0	A	B0(B1)
D23	UMF95D23R	75	700	230	172	200	220	1	A	B0(B1)
	UMF95D23L	75	700	230	172	200	220	0	A	B0(B1)
D26	UMF115D26R	85	750	257	172	200	220	1	A	B0(B1)
	UMF115D26L	85	750	257	172	200	220	0	A	B0(B1)
D31	UMF135D31R	100	850	302	172	200	220	1	A	B0(B1)
	UMF135D31L	100	850	302	172	200	220	0	A	B0(B1)
65	UMF65-850	80	850	294	187	172	192	1	A	B8
78	UMF78-800	75	800	260	179	181	201	1	SIDE	B1

Sealed Maintenance Free Battery Technology

SMF Battery is the ideal choice for standard vehicles with usual power demands. It's maintenance free and it provides reliable power support for all applications. It offers a complete range of SMF Batteries for all of European, Asian and American vehicles.



Core Technology

- X-Frame plus
- Ca/Ca
- Sealed Double Lid
- Nonwoven Tissue

Advantages

- Reliable starting power with X-Frame Technology
- High Durability Technology delivers longer service life
- A complete range offered for 99% of vehicles on the market

12V Automotive / AURORA SMF Technology

Gr.No	Type No.	Capacity	CCA (EN)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
L0	MF54080	40	340	174	174	190	190	0	A	B13
LB1	MF53646	36	330	208	174	175	175	0	A	B13
	MF54321	45	450	208	174	175	175	0	A	B13
	MF54322	45	450	208	174	175	175	1	A	B13
L1	MF54459	44	390	208	174	190	190	0	A	B13
	MF54464	44	390	208	174	190	190	1	A	B13
	MF55054	50	420	208	174	190	190	0	A	B13
LB2	MF54519	45	390	242	174	175	175	0	A	B13
	MF55046	50	450	242	174	175	175	0	A	B13
	MF55457	54	480	242	174	175	175	0	A	B13
	MF55459	54	480	242	174	175	175	1	A	B13
	MF55427	54	480	242	174	175	175	0	4F	B13
	MF56077	60	510	242	174	175	175	0	A	B13
L2	MF55559	55	480	242	174	190	190	0	A	B13
	MF55565	55	480	242	174	190	190	1	A	B13
	MF55531	55	480	242	174	190	190	0	4F	B13
	MF56219	62	540	242	174	190	190	0	A	B13
	MF56220	62	540	242	174	190	190	1	A	B13

12V Automotive / AURORA SMF Technology

Gr.No	Type No.	Capacity	CCA (EN)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
LB3	MF55415	54	480	277	174	175	175	0	A	B13
	MF56318	63	540	277	174	175	175	0	A	B13
	MF56828	68	570	277	174	175	175	0	A	B13
	MF56821	68	570	277	174	175	175	1	A	B13
	MF56818	68	570	277	174	175	175	0	4F	B13
	MF57113	72	640	277	174	175	175	0	A	B13
L3	MF56638	66	540	277	174	190	190	0	A	B13
	MF56633	66	540	277	174	190	190	1	A	B13
	MF57220	72	610	277	174	190	190	0	A	B13
	MF57219	72	610	277	174	190	190	1	A	B13
	MF57412	74	680	277	174	190	190	0	A	B13
	MF57413	74	680	277	174	190	190	1	A	B13
LB4	MF57539	75	640	315	174	175	175	0	A	B13
L4	MF58043	80	640	315	174	190	190	0	A	B13
	MF58590	85	750	315	174	190	190	0	A	B13
	MF58591	85	750	315	174	190	190	1	A	B13
LB5	MF58515	85	720	354	174	175	175	0	A	B13
L5	MF58827	88	680	354	174	190	190	0	A	B13
	MF58821	88	680	354	174	190	190	1	A	B13
	MF60038	100	850	354	174	190	190	0	A	B13
B19	MF53520	35	330	187	127	200	220	0	B	B0
	MF53522	35	330	187	127	200	220	1	B	B0
	MF53504	35	330	187	136	200	220	0	B	B1
	MF54026	40	360	187	127	200	220	0	B	B0
	MF54027	40	360	187	127	200	220	1	B	B0
B24	MF54523	45	360	234	127	200	220	0	A	B0
	MF54524	45	360	234	127	200	220	1	A	B0
	MF54584	45	360	234	127	200	220	0	B	B0
	MF54551	45	360	234	127	200	220	1	B	B0
D20	MF55041	50	390	200	172	200	220	0	A	B1
	MF55042	50	390	200	172	200	220	1	A	B1
D23	MF56068	60	480	230	172	200	220	0	A	B1
	MF56069	60	480	230	172	200	220	1	A	B1
D26	MF56048	60	480	257	172	200	220	0	A	B1
	MF56049	60	480	257	172	200	220	1	A	B1
	MF57024	70	540	257	172	200	220	1	A	B1
	MF57029	70	540	257	172	200	220	0	A	B1
D31	MF57512	75	600	302	172	200	220	0	A	B1
	MF57513	75	600	302	172	200	220	1	A	B1
	MF58513	85	680	302	172	200	220	0	A	B1
	MF58514	85	680	302	172	200	220	1	A	B1
	MF59518	95	720	302	172	200	220	0	A	B1
	MF59519	95	720	302	172	200	220	1	A	B1

12V Automotive / AURORA SMF Technology

Gr.No	Type No.	Capacity	CCA (SAE)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
B19	MF40B19L	35	330	187	127	200	220	0	B	B0
	MF40B19R	35	330	187	127	200	220	1	B	B0
	MF40B19LS	35	330	187	127	200	220	0	A	B0
	MF40B19RS	35	330	187	127	200	220	1	A	B0
	MF40B19FL	35	330	187	136	200	220	0	B	B1
	MF42B19L	38	350	187	127	200	220	0	B	B0
	MF42B19R	38	350	187	127	200	220	1	B	B0
	MF42B19LS	38	350	187	127	200	220	0	A	B0
	MF42B19RS	38	350	187	127	200	220	1	A	B0
	MF42B19FL	38	350	187	136	200	220	0	B	B1
	MF44B19L	40	370	187	127	200	220	0	B	B0
	MF44B19R	40	370	187	127	200	220	1	B	B0
	MF44B19FL	40	370	187	136	200	220	0	B	B1
	MF50B19L	42	380	187	127	200	220	0	B	B0
	MF50B19R	42	380	187	127	200	220	1	B	B0
B24	MF50B24L	45	400	234	127	200	220	0	B	B0
	MF50B24R	45	400	234	127	200	220	1	B	B0
	MF50B24LS	45	400	234	127	200	220	0	A	B0
	MF50B24RS	45	400	234	127	200	220	1	A	B0
	MF55B24L	45	430	234	127	200	220	0	B	B0
	MF55B24R	45	430	234	127	200	220	1	B	B0
	MF55B24LS	45	430	234	127	200	220	0	A	B0
	MF55B24RS	45	430	234	127	200	220	1	A	B0
	MF60B24L	48	460	234	127	200	220	0	B	B0
	MF60B24R	48	460	234	127	200	220	1	B	B0
	MF60B24LS	48	460	234	127	200	220	0	A	B0
	MF60B24RS	48	460	234	127	200	220	1	A	B0
	MF65B24L	52	480	234	127	200	220	0	B	B0
	MF65B24R	52	480	234	127	200	220	1	B	B0
D20	MF50D20L	50	450	200	172	200	220	0	A	B1
	MF50D20R	50	450	200	172	200	220	1	A	B1
D23	MF55D23L	60	550	230	172	200	220	0	A	B0
	MF55D23R	60	550	230	172	200	220	1	A	B0
	MF55D23FL	60	550	230	172	200	220	0	A	B1
	MF55D23FR	60	550	230	172	200	220	1	A	B1
	MF75D23L	65	580	230	172	200	220	0	A	B0
	MF75D23R	65	580	230	172	200	220	1	A	B0
	MF75D23FL	65	580	230	172	200	220	0	A	B1
	MF75D23FR	65	580	230	172	200	220	1	A	B1
	MF90D23L	68	630	230	172	200	220	0	A	B0
	MF90D23R	68	630	230	172	200	220	1	A	B0
	MF90D23FL	68	630	230	172	200	220	0	A	B1
	MF90D23FR	68	630	230	172	200	220	1	A	B1

12V Automotive / AURORA SMF Technology										
Gr.No	Type No.	Capacity	CCA (SAE)	Dimension (mm)				Layout	Terminal	Hold-Down
				L	W	H	TH			
D26	MF48D26L	50	450	257	172	200	220	0	A	B0
	MF48D26R	50	450	257	172	200	220	1	A	B0
	MF48D26FL	50	450	257	172	200	220	0	A	B1
	MF48D26FR	50	450	257	172	200	220	1	A	B1
	MF55D26L	60	550	257	172	200	220	0	A	B0
	MF55D26R	60	550	257	172	200	220	1	A	B0
	MF55D26FL	60	550	257	172	200	220	0	A	B1
	MF55D26FR	60	550	257	172	200	220	1	A	B1
	MF75D26L	65	580	257	172	200	220	0	A	B0
	MF75D26R	65	580	257	172	200	220	1	A	B0
	MF75D26FL	65	580	257	172	200	220	0	A	B1
	MF75D26FR	65	580	257	172	200	220	1	A	B1
	MF80D26L	70	600	257	172	200	220	0	A	B0
	MF80D26R	70	600	257	172	200	220	1	A	B0
	MF80D26FL	70	600	257	172	200	220	0	A	B1
	MF80D26FR	70	600	257	172	200	220	1	A	B1
	MF95D26L	80	700	257	172	200	220	0	A	B0
	MF95D26R	80	700	257	172	200	220	1	A	B0
D31	MF65D31L	70	600	302	172	200	220	0	A	B0
	MF65D31R	70	600	302	172	200	220	1	A	B0
	MF65D31FL	70	600	302	172	200	220	0	A	B1
	MF65D31FR	70	600	302	172	200	220	1	A	B1
	MF75D31L	75	660	302	172	200	220	0	A	B0
	MF75D31R	75	660	302	172	200	220	1	A	B0
	MF75D31FL	75	660	302	172	200	220	0	A	B1
	MF75D31FR	75	660	302	172	200	220	1	A	B1
	MF95D31L	80	670	302	172	200	220	0	A	B0
	MF95D31R	80	670	302	172	200	220	1	A	B0
	MF95D31FL	80	670	302	172	200	220	0	A	B1
	MF95D31FR	80	670	302	172	200	220	1	A	B1
	MF105D31L	90	750	302	172	200	220	0	A	B0
	MF105D31R	90	750	302	172	200	220	1	A	B0
	MF105D31FL	90	750	302	172	200	220	0	A	B1
	MF105D31FR	90	750	302	172	200	220	1	A	B1
	MF115D31L	95	830	302	172	200	220	0	A	B0
	MF115D31R	95	830	302	172	200	220	1	A	B0
	MF115D31FL	95	830	302	172	200	220	0	A	B1
	MF115D31FR	95	830	302	172	200	220	1	A	B1
CARNIVAL	MF100L	100	830	325	172	200	220	0	A	B1
E41	MF95E41L	100	830	405	173	211	231	0	A	B0
	MF95E41R	100	830	405	173	211	231	1	A	B0
	MF115E41L	110	900	405	173	211	231	0	A	B0
	MF115E41R	110	900	405	173	211	231	1	A	B0
	MF130E41L	115	920	405	173	211	231	0	A	B0
	MF130E41R	115	920	405	173	211	231	1	A	B0

12V Automotive / AURORA SMF Technology

Gr.No	Type No.	RC (Min)	CCA (SAE)	Dimension (mm)				Layout	Terminal	Hold- Down	BCI Assembly Figure No
				L	W	H	TH				
51	MF51-430	71	430	234	136	200	220	1	A	B1	10
	MF51-460	78	460	234	136	200	220	1	A	B1	10
51R	MF51R-430	71	430	234	136	200	220	0	A	B1	11
	MF51R-460	78	460	234	136	200	220	0	A	B1	11
21	MF21-450	80	450	200	172	200	220	1	A	B1	10
21R	MF21R-450	80	450	200	172	200	220	0	A	B1	11
26	MF26-450	80	450	208	172	180	200	1	A	B1	10
	MF26-550	100	550	208	172	180	200	1	A	B1	10
26R	MF26R-450	80	450	208	172	180	200	0	A	B1	11
	MF26R-550	100	550	208	172	180	200	0	A	B1	11
85	MF85-500	85	500	230	172	180	200	0	A	B1	11
	MF85-550	90	550	230	172	180	200	0	A	B1	11
86(85R)	MF85R-500	85	500	230	172	180	200	1	A	B1	10
	MF85R-550	90	550	230	172	180	200	1	A	B1	10
34	MF34-550	100	550	260	172	180	200	1	A	B1	10
	MF34-630	125	630	260	172	180	200	1	A	B1	10
	MF34-670	130	670	260	172	180	200	1	A	B1	10
	MF34-710	140	710	260	172	180	200	1	A	B1	10
	MF34-750	155	750	260	172	180	200	1	A	B1	10
34R	MF34R-550	100	550	260	172	180	200	0	A	B1	11
	MF34R-630	125	630	260	172	180	200	0	A	B1	11
	MF34R-710	140	710	260	172	180	200	0	A	B1	11
	MF34R-750	155	750	260	172	180	200	0	A	B1	11
25	MF25-550	100	550	230	172	200	220	1	A	B1	10
35	MF35-550	100	550	230	172	200	220	0	A	B1	11
	MF35-580	110	580	230	172	200	220	0	A	B1	11
24	MF24-500	90	500	257	172	200	220	1	A	B1	10
	MF24-550	100	550	257	172	200	220	1	A	B1	10
	MF24-600	113	600	257	172	200	220	1	A	B1	10
	MF24-630	130	630	257	172	200	220	1	A	B1	10
	MF24-750	155	750	257	172	200	220	1	A	B1	10
24R	MF24R-500	90	500	257	172	200	220	0	A	B1	11
	MF24R-550	100	550	257	172	200	220	0	A	B1	11
	MF24R-600	113	600	257	172	200	220	0	A	B1	11
	MF24R-630	130	630	257	172	200	220	0	A	B1	11
	MF24R-750	155	750	257	172	200	220	0	A	B1	11
24F	MF24F-500	90	500	266	172	200	220	0	A	B5(B9)	11F
	MF24F-550	100	550	266	172	200	220	0	A	B5(B9)	11F
	MF24F-600	113	600	266	172	200	220	0	A	B5(B9)	11F
	MF24F-630	130	630	266	172	200	220	0	A	B5(B9)	11F
	MF24F-680	140	680	266	172	200	220	0	A	B5(B9)	11F
	MF24F-750	155	750	266	172	200	220	0	A	B5(B9)	11F

12V Automotive / AURORA SMF Technology

Gr.No	Type No.	RC (Min)	CCA (SAE)	Dimension (mm)				Layout	Terminal	Hold- Down	BCI Assembly Figure No
				L	W	H	TH				
27	MF27-630	130	630	302	172	200	220	1	A	B1	10
	MF27-670	140	670	302	172	200	220	1	A	B1	10
	MF27-750	155	750	302	172	200	220	1	A	B1	10
	MF27-840	190	840	302	172	200	220	1	A	B1	10
27R	MF27R-630	130	630	302	172	200	220	0	A	B1	11
	MF27R-670	140	670	302	172	200	220	0	A	B1	11
	MF27R-750	155	750	302	172	200	220	0	A	B1	11
27F	MF27F-630	130	630	311	172	200	220	0	A	B9	11F
	MF27F-670	140	670	311	172	200	220	0	A	B9	11F
	MF27F-750	155	750	311	172	200	220	0	A	B9	11F
	MF27F-810	180	810	311	172	200	220	0	A	B9	11F
	MF27F-840	190	840	311	172	200	220	0	A	B9	11F
30H	MF30H-900	182	830	325	172	200	220	1	A	B1	10
31	MF31-630	130	630	330	172	218	242	1	A	B0	18
	MF31-700	150	700	330	172	218	242	1	A	B0	18
	MF31-750	160	750	330	172	218	242	1	A	B0	18
	MF31-800	170	800	330	172	218	242	1	A	B0	18
	MF31-850	180	850	330	172	218	242	1	A	B0	18
	MF31-950	185	950	330	172	218	242	1	A	B0	18
	MF31-1000	190	1000	330	172	218	242	1	A	B0	18
31S	MF31S-630	130	630	330	172	218	242	1	STUD	B0	18
	MF31S-700	150	700	330	172	218	242	1	STUD	B0	18
	MF31S-750	160	750	330	172	218	242	1	STUD	B0	18
	MF31S-800	170	800	330	172	218	242	1	STUD	B0	18
	MF31S-850	180	850	330	172	218	242	1	STUD	B0	18
	MF31S-950	185	950	330	172	218	242	1	STUD	B0	18
	MF31S-1000	190	1000	330	172	218	242	1	STUD	B0	18
90	MF90-450	80	450	242	174	175	175	0	A	B13	24
	MF90-500	90	500	242	174	175	175	0	A	B13	24
	MF90-550	100	550	242	174	175	175	0	A	B13	24
47	MF47-500	90	500	242	174	190	190	0	A	B13	24
	MF47-600	110	600	242	174	190	190	0	A	B13	24
91	MF91-580	100	580	277	174	175	175	0	A	B13	24
	MF91-630	110	630	277	174	175	175	0	A	B13	24
	MF91-690	130	690	277	174	175	175	0	A	B13	24
48	MF48-580	100	580	277	174	190	190	0	A	B13	24
	MF48-630	110	630	277	174	190	190	0	A	B13	24
	MF48-690	130	690	277	174	190	190	0	A	B13	24
49	MF49-750	160	750	354	174	190	190	0	A	B13	24
	MF49-850	180	850	354	174	190	190	0	A	B13	24
58	MF58-460	75	460	254	182	157	178	1	A	B8	26
	MF58-500	90	500	254	182	157	178	1	A	B8	26
	MF58-560	100	560	254	182	157	178	1	A	B8	26

12V Automotive / AURORA SMF Technology											
Gr.No	Type No.	RC (Min)	CCA (SAE)	Dimension (mm)				Layout	Terminal	Hold-Down	BCI Assembly Figure No
				L	W	H	TH				
58R	MF58R-460	75	460	254	182	157	178	0	A	B8	19
	MF58R-500	90	500	254	182	157	178	0	A	B8	19
	MF58R-560	100	560	254	182	157	178	0	A	B8	19
65	MF65-650	130	650	305	187	171	191	1	A	B8	10
	MF65-750	140	750	305	187	171	191	1	A	B8	10
65R	MF65R-650	130	650	305	187	171	191	0	A	B8	11
	MF65R-750	140	750	305	187	171	191	0	A	B8	11
70	MF70-450	80	450	208	179	180	180	1	SIDE	B1	17
	MF70-500	90	500	208	179	180	180	1	SIDE	B1	17
	MF70-550	100	550	208	179	180	180	1	SIDE	B1	17
70DT	MF70DT-400	71	400	208	179	180	200	1	DT	B1	17
	MF70DT-550	100	550	208	179	180	200	1	DT	B1	17
75	MF75-500	90	500	230	179	180	180	1	SIDE	B1	17
	MF75-550	100	550	230	179	180	180	1	SIDE	B1	17
	MF75-600	113	600	230	179	180	180	1	SIDE	B1	17
	MF75-630	125	630	230	179	180	180	1	SIDE	B1	17
	MF75-650	130	650	230	179	180	180	1	SIDE	B1	17
75DT	MF75DT-550	100	550	230	179	180	200	1	DT	B1	17
	MF75DT-600	113	600	230	179	180	200	1	DT	B1	17
	MF75DT-630	125	630	230	179	180	200	1	DT	B1	17
	MF75DT-650	130	650	230	179	180	200	1	DT	B1	17
78	MF78-550	100	550	260	179	180	180	1	SIDE	B1	17
	MF78-600	113	600	260	179	180	180	1	SIDE	B1	17
	MF78-630	125	630	260	179	180	180	1	SIDE	B1	17
	MF78-670	130	670	260	179	180	180	1	SIDE	B1	17
	MF78-710	140	710	260	179	180	180	1	SIDE	B1	17
	MF78-750	155	750	260	179	180	180	1	SIDE	B1	17
78DT	MF78DT-600	113	600	260	179	180	200	1	DT	B1	17
	MF78DT-670	130	670	260	179	180	200	1	DT	B1	17
	MF78DT-710	140	710	260	179	180	200	1	DT	B1	17
	MF78DT-750	155	750	260	179	180	200	1	DT	B1	17
MINI	MF MINIFIT R	65	400	243	127	180	200	1	A	B6	
	MF MINIFIT L	65	400	243	127	180	200	0	A	B6	
22F	MF22F-450	75	450	240	172	180	205	0	DUAL FIT	B5	11F
	MF22F-500	90	500	240	172	180	205	0	DUAL FIT	B5	11F
	MF22F-550	95	550	240	172	180	205	0	DUAL FIT	B5	11F
94R	MF94R-680	140	680	315	174	190	190	0	A	B13	24
92	MF92-650	125	650	315	174	175	175	0	A	B13	24
93	MF93-800	140	800	354	174	175	175	0	A	B13	24
59	MF59-590	100	590	242	188	169	189	1	A	B8	10

Heavy duty battery Technology

HD is the ideal choice for CV's and HGV's with usual power demands. It's maintenance free and it provides the right power support, you can rely on.



Core Technology

- X-Frame plus
- Advance Ca/Ca
- HD Standard
- Heat sealed lid

Advantages

- Reliable starting power
- Stable Reserve Capacity
- Absolutely maintenance Free
- High vibration resistance

12V Commercial Vehicle / AURORA Super Heavy Duty

Gr.No		Type No.	Capacity 20HR (AH)	CCA (DIN:EN/BCI:SAE)	Dimension (mm)				Layout	Terminal	Hold-Down
					L	W	H	TH			
EN (DIN)	A	SHD 63530	135	700	511	188	195	217	3	A	B0/B13
		SHD 64589	145	800	511	188	195	217	3	A	B0/B13
	B	SHD 66514	165	900	511	222	195	217	3	A	B0/B13
		SHD 68032	180	1000	511	222	195	217	3	A	B0/B13
	C	SHD 71014	210	1050	516	274	216	238	3	A	B0/B13
		SHD 72512	225	1150	516	274	216	238	3	A	B0/B13

12V Commercial Vehicle / AURORA Heavy Duty Sealed Maintenance Free

Gr.No		Type No.	Capacity 20HR (AH)	CCA (DIN:EN/BCI:SAE)	Dimension (mm)				Layout	Terminal	Hold-Down
					L	W	H	TH			
EN (DIN)	A	MF 62034	120	760	511	188	195	217	3	A	B0/B13
	B	MF 65513	155	900	511	222	195	217	3	A	B0/B13
	C	MF 70027	200	1050	516	274	216	238	3	A	B0/B13
JIS	F51	MF 135F51	120	870	506	182	210	233	4	A	B0
	G51	MF 160G51	150	1000	506	212	210	230	4	A	B0
	H52	MF 210H52	200	1200	509	274	218	238	4	A	B0
		MF 245H52	220	1400	509	274	218	238	4	A	B0

Technical Data

Layout / Terminals / Hold-down

LAYOUT

0	
2	
4	
1	
3	
5	

TERMINALS

Terminal	A (Standard)	B (Small)	Dual Fit	4F	Stud	Side	Marine Twin	U1 Lug
Positive					 3/8"-16 Threads		 5/16"-18 THREADS	
Negative					 3/8"-16 Threads		 5/16"-18 THREADS	

* DT: Dual Terminal (Standard + Side)

HOLD-DOWN

B1	
B5	
B8	
B13	
B4	
B6	
B9	
B14	

* For B0 there is no Hold-Down

BCI Assembly Figure

10	
11F	
18	
24	
11	
17	
19	
26	

How to Handle Battery

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 rubber boots.
- Avoid smoking, sparks and flames near operating or charging lead acid batteries.
- 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 milk of magnesia, 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.
- Never drop, never overthrow.
- In all cases, (First In, First Out) storage procedure should be applied.

Installation

- Check the 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.
- Replace the old battery with the new battery and fix the new one in the tray.
- Prior to replacing the new one, inspect the tray for corrosion. Clean battery holder and battery terminals using a wire brush, if necessary.
- Connect the positive terminal first.
- Connect the negative terminal. The negative terminal should always be replaced last.

Disposal

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



NEVER DROP
NEVER OVERTHROW



NEVER STACK
OVER 4 LAYERS



KEEP UPRIGHT



NEVER TIP
OVER 45°



RECYCLE



Pb



No smoking,
no naked flames,
no sparks



Shield
eyes



Keep
away from
children



Battery
acid



Explosive
gas



Note
operating
instructions

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). Always look right down when viewing the Indicator and lightly tap the Indicator on the battery to dislodge any air bubbles.



B. Voltage Check

- If OCV is below 12.4V(Flooded) or 12.5V(AGM), recharge the battery immediately.

C. Discharge Test (Load Test)

- Connect the battery tester to battery terminals.
- Measure the temperature of the battery around.
- Set the battery tester ampere values for ½ of the CCA rating.
- 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 test twice, replace it.
- Sometimes, electronic testers such as MIDTRONICS, SNAP-ON and etc are used instead of load tester.
- Electronic testers are only suitable for batteries that have been in use for a certain time.
- They cannot rate the performance of new or unused batteries
- For this reason, Hankook AtlasBX recommends the test defined in global standards to confirm rated specifications.

TABLE 1. State of Charge

Approx. State of Charge	OCV	
	Flooded	AGM
100%	> 12.75V	> 12.90V
> 75%	> 12.40V	> 12.50V
> 50%	> 12.20V	> 12.25V
> 25%	> 12.00V	> 12.00V
Discharged	< 11.99V	< 11.99V

* 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 CHARGE

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 sprays electrolyte through the vent holes or gets hot (over 52°C), the charge must be stopped for a time to allow the battery to be cool down.

Constant Voltage Charge

Another method is to charge a battery at a specified voltage(Flooded : 16.0V or AGM : 14.4V) in below table. When charging starts, a high rate current flows into the battery. As the battery is being charged, the current is reduced. Generally this method needs more time than the constant-current-charge, but overcharge risk is lower

Constant Current charge

General guidelines for constant-current-charge are given in TABLE 3 and TABLE 4. TABLES summarize approximate and hours in need of charge according to 20Hr-rate capacity and OCV.

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 - Flooded

OCV	Charging Time (Hours)	Charging Current (Amperes)																			
		31 - 40Ah	41 - 50Ah	51 - 60Ah	61 - 70Ah	71 - 80Ah	81 - 90Ah	91 - 100Ah	101 - 110Ah	111 - 120Ah	121 - 130Ah	131 - 140Ah	141 - 150Ah	151 - 160Ah	161 - 170Ah	171 - 180Ah	181 - 190Ah	191 - 200Ah	201 - 210Ah	211 - 220Ah	221 - 230Ah
124 - 1249V	6 Hr.																				
123 - 1239V	10 Hr.																				
122 - 1229V	14 Hr.	2.0 A	2.5 A	3.0 A	3.5 A	4.0 A	4.5 A	5.0 A	5.5 A	6.0 A	6.5 A	7.0 A	7.5 A	8.0 A	8.5 A	9.0 A	9.5 A	10.0 A	10.5 A	11.0 A	11.5 A
121 - 1219V	16 Hr.																				
120 - 1209V	20 Hr.																				
Below 11.99V	24 Hr.																				

TABLE 4. Constant Current Charge Condition - AGM

OCV	Charging Time (Hours)	Charging Current (Amperes)							
		31 - 40Ah	41 - 50Ah	51 - 60Ah	61 - 70Ah	71 - 80Ah	81 - 90Ah	91 - 100Ah	101 - 110Ah
125 - 12.59V	6 hr.								
124 - 12.49V	9 hr.								
123 - 12.39V	12 hr.								
122 - 12.29V	15 hr.	2.0 A	2.5 A	3.0 A	3.5 A	4.0 A	4.5 A	5.0 A	5.5 A
121 - 12.19V	18 hr.								
120 - 12.09V	21 hr.								
Below 11.99V	24 hr.								

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We will contact you after we review your valuable inquiry as quickly and accurately as possible.

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