

SUPER MAINTENANCE FREE BATTERY

KRANK™

PREMIUM SMF BATTERY



GERMAN
TECHNOLOGY





We offer a wide range of lead acid batteries for:

Passenger vehicles - all JIS, all DIN, and fast moving BCI types.

Commercial vehicles - including heavy-duty trucks, buses and other commercial vehicles.

Recreational vehicles - such as golf cars, marine vehicles and power-sports vehicles.

Deep cycle purpose - such as IPS, UPS, SOLAR, 2-Volt batteries, etc.

Start-stop technology - wide range of EFB battery.

Our Capabilities

German technology.

World class engineers.

Consistent quality.

European machines of the highest quality.

Fully automated or semi-automated production process.

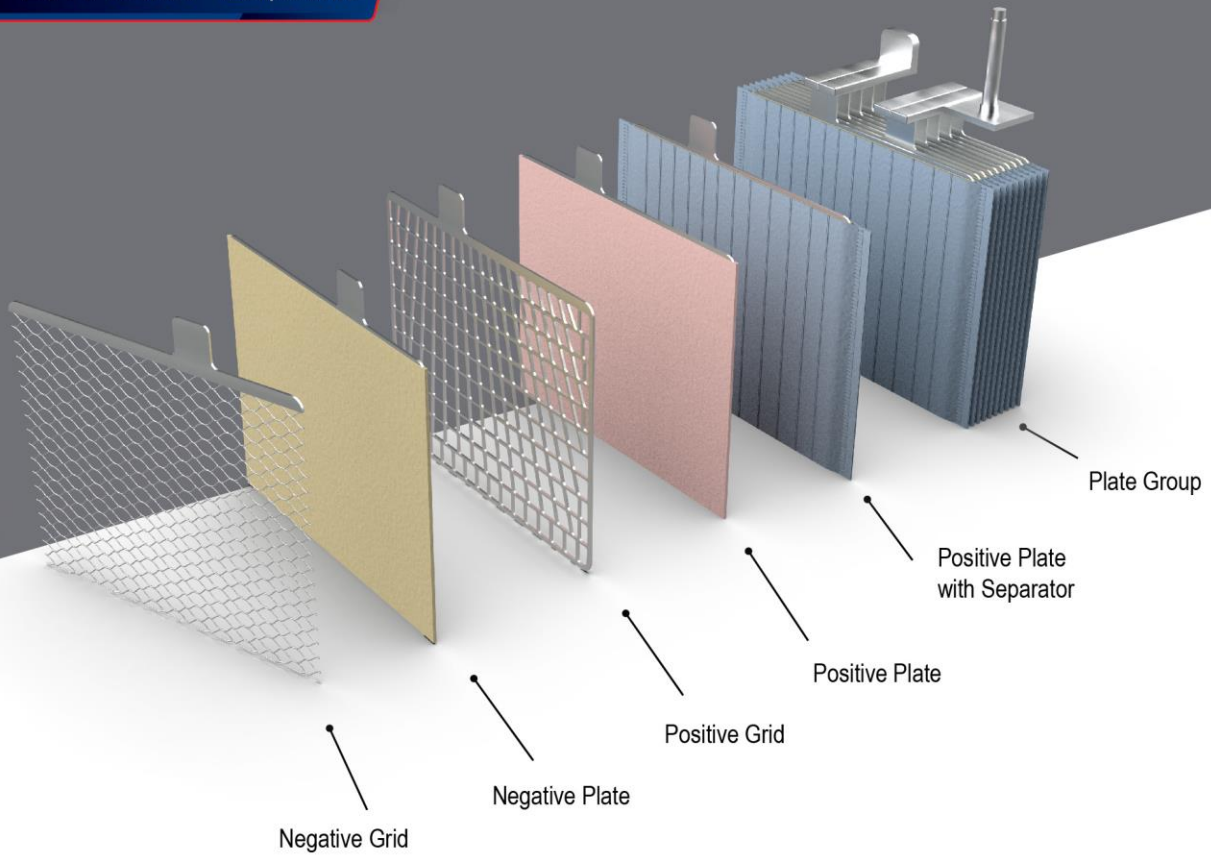
Supply-chain optimization for consistent product delivery.

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BATTERY Components

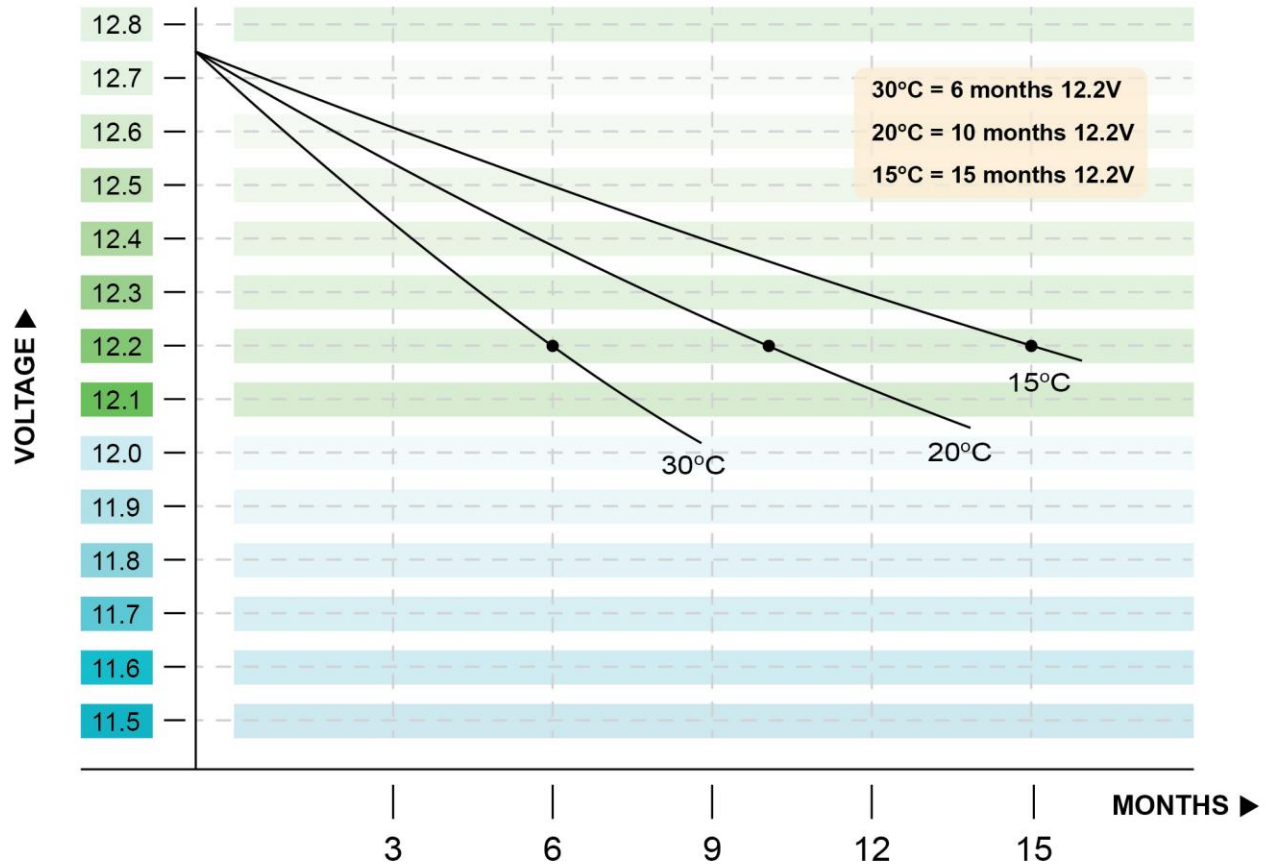


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Features

Self discharge of Pb-Ca battery



Recharge if OCV below 12.2V

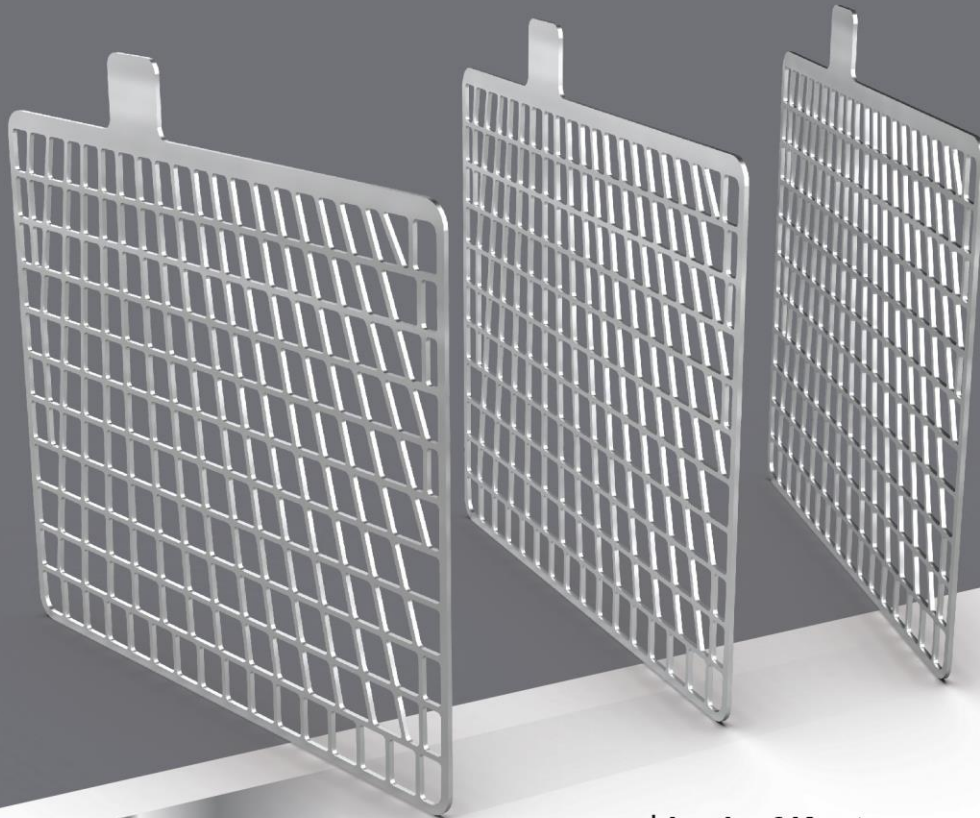


Cold Forged Bush (Hoffman)

- ✓ Shiny look
- ✓ No terminal blackening
- ✓ Higher strength
- ✓ Better leak resistance
- ✓ Smooth surface
- ✓ Improved grain structure

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5 | **Straight Line Conductivity**
Ease of current flow
Low resistance

6 | **Lower Energy Consumption**
Less greenhouse gas
Environment-friendly

7 | **Reduced Grid Growth**
Reduced risk of cell shorting
Extended grid life

1 | **Lack of Knots**
Reduced corrosion
Extended service life

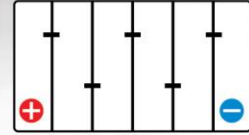
2 | **Specially Designed Frame**
Increased mechanical strength
Reduced grid growth

3 | **No Feather**
No stinging
Reduced shorting

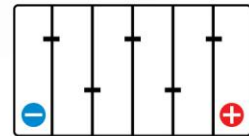
4 | **Reinforcement below the Lug**
Higher mechanical strength
Better electrical performance

JIS

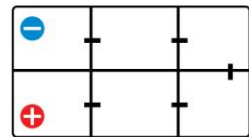
Cell Layout



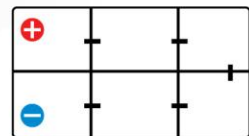
Layout 1



Layout 0



Layout 4



Layout 3

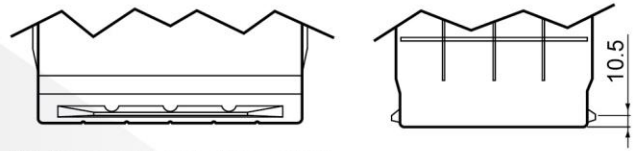


Bottom Hold

B0

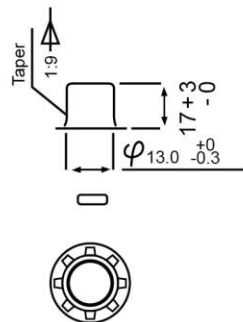
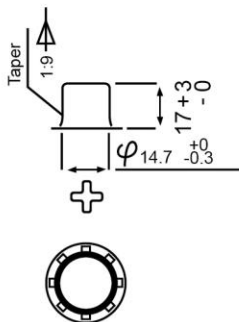


B1

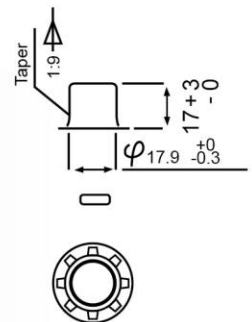
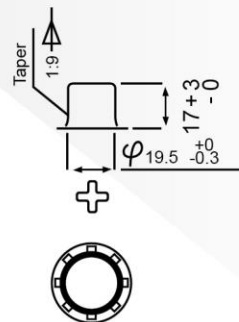


10.5mm on long sides only

T1



T2



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Technical Specification

JIS-PC

Container	New JIS	Old JIS	Dimension (mm)				Capacity AH @ 20	RC	CCA	Cell Layout	Terminal	Bottom Hold
			L	W	H	TH						
B19	38B19R/L	NS40/L	185	127	200	220	32	43	300	1/0	T1	B0/B1
	40B19R/L	NS40Z/L	185	127	200	220	35	56	390	1/0	T1	B0/B1
B24	45B24R/L	N40/L	234	127	200	220	40	56	400	1/0	T1	B0/B1
	45B24RS/LS	N40S/LS	234	127	200	220	40	56	400	1/0	T2	B0/B1
	50B24R/L	NS60/L	234	127	200	220	45	70	500	1/0	T1	B0/B1
D23	55D23R/L	N/A	230	172	200	220	60	98	640	1/0	T2	B0/B1
	48D26R/L	N50/L	257	172	200	220	50	79	500	1/0	T2	B0/B1
D26	60D26R/L	N50Z/L	257	172	200	220	60	98	620	1/0	T2	B0/B1
	65D26R/L	NS70/L	257	172	200	220	65	108	640	1/0	T2	B0/B1
D31	65D31R/L	N70/L	302	172	200	220	70	118	690	1/0	T2	B0/B1
	90D31R/L	N70Z/L	302	172	200	220	75	117	730	1/0	T2	B0/B1
	95D31R/L	NX120-7/L	302	172	200	220	80	138	850	1/0	T2	B0/B1
	100D31R/L	N90/L	302	172	200	220	90	158	980	1/0	T2	B0/B1

JIS-CV

Container	New JIS	Old JIS	Dimension (mm)				Capacity AH @ 20	RC	CCA	Cell Layout	Terminal	Bottom Hold
			L	W	H	TH						
E41	105E41R/L	N100/L	400	171	200	220	100	180	860	1/0	T2	B0
F51	170F51R/L	N120/L	505	172	210	230	120	223	970	3/4	T2	B0
G51	185G51R/L	N150/L	505	212	210	230	150	290	1300	3/4	T2	B0
H52	225H52R/L	N200/L	509	274	217	237	200	407	1680	3/4	T2	B0

JIS-EFB

Container	Type No.	Dimension (mm)				Capacity AH @ 20	RC	CCA	Cell Layout	Terminal	Bottom Hold
		L	W	H	TH						
B19	M42/R (55B19L/R)	185	127	200	220	40	61	370	1/0	T1	0/B1
B24	N55/R (70B24L/R)	234	127	200	220	50	79	470	1/0	T1/T2	0/B1
D23	Q85/R (90D23L/R)	230	172	200	220	65	98	600	1/0	T2	0/B1
D26	S95/R (100D26L/R)	257	172	200	220	70	118	710	1/0	T2	0/B1
D31	T110/R (115D31L/R)	302	172	200	220	90	158	950	1/0	T2	0/B1

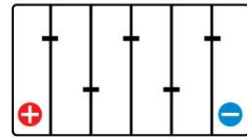
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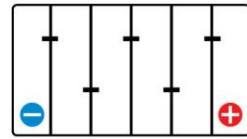
DIN



Cell Layout

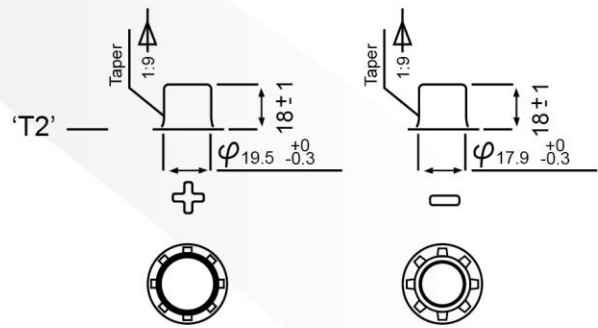


Layout 1



Layout 0

Bottom Hold (B13)



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Technical Specification

DIN-LN

Container	Part No.	Dimension				AH @20H	RC	CCA	Cell Layout	Terminal	Bottom Hold
		L	W	H	TH						
LN1	54459	207	174	190	190	44	68	550	0	T2	B13
	54464	207	174	190	190	44	68	550	1	T2	B13
LN2	55559	242	174	190	190	55	88	750	0	T2	B13
	55565	242	174	190	190	55	88	750	1	T2	B13
	56219	242	174	190	190	62	102	800	0	T2	B13
	56218	242	174	190	190	62	102	800	1	T2	B13
LN3	56638	277	174	190	190	66	110	870	0	T2	B13
	56633	277	174	190	190	66	110	870	1	T2	B13
	57417	277	174	190	190	74	126	910	0	T2	B13
LN4	57413	277	174	190	190	74	126	910	1	T2	B13
	58590	314	174	190	190	85	148	1000	0	T2	B13
	58591	314	174	190	190	85	148	1000	1	T2	B13
LN5	58821	353	174	190	190	88	154	1050	1	T2	B13
	58833	353	174	190	190	88	154	1050	0	T2	B13
	59218	353	174	190	190	92	163	1050	0	T2	B13
	60038	353	174	190	190	100	179	1100	0	T2	B13

DIN-LBN

Container	Part No.	Dimension				AH @20H	RC	CCA	Cell Layout	Terminal	Bottom Hold
		L	W	H	TH						
LBN1	54321	207	174	175	175	43	66	500	0	T2	B13
	54322	207	174	175	175	43	66	500	1	T2	B13
LBN2	55457	242	174	175	175	54	87	730	0	T2	B13
	55459	242	174	175	175	54	87	730	1	T2	B13
	56077	242	174	175	175	60	98	780	0	T2	B13
LBN3	56628	277	174	175	175	66	110	850	0	T2	B13
	57439	277	174	175	175	74	126	890	0	T2	B13
LBN4	58514	314	174	175	175	85	148	950	0	T2	B13
LBN5	58820	353	174	175	175	88	154	1000	0	T2	B13
	59219	353	174	175	175	92	163	1050	0	T2	B13

DIN-EFB

Container	Part No.	Dimension				AH @20H	RC	CCA	Cell Layout	Terminal	Bottom Hold
		L	W	H	TH						
LN1	55010	207	174	190	190	50	79	595	1/0	T2	B13
LN2	56010	242	174	190	190	60	98	710	1/0	T2	B13
LN3	57010	277	174	190	190	70	126	950	1/0	T2	B13
LN4	58010	314	174	190	190	80	147	1050	1/0	T2	B13
LN5	59010	353	174	190	190	90	163	1180	1/0	T2	B13

Strip Casting



- » 7-step rolling ensures uniform thickness of the strip
- » Higher material strength of the strip due to Ca, Sn, Ag alloy quality
- » Extreme resistance to corrosion
- » Precisely controlled process

Expander



- » Automatic expanded grid width adjustment is possible during the expansion process, as to keep a constant grid width
- » Grid design for better paste retention
- » Follows the movement of the strip and at the same time performs the expansion by punching the strip
- » Material savings- optimized mesh design provides the lightest weight grid available

Punch Machine



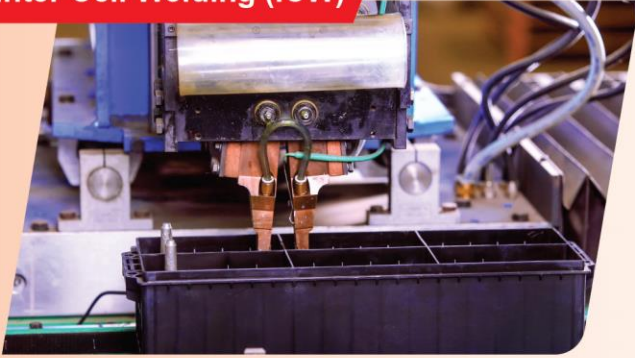
- » Enhanced grid design ensures more durability and longevity than traditional grids
- » Better and more reliable performance at engine turn on
- » Continuous process of strip flow (no stop)
- » High speed production

Cast on Strap (COS)



- » Multiple zone mould cooling
- » Reliable cast on processing
- » Robotic hand- automatic line
- » Using of 'flux' for perfect casting

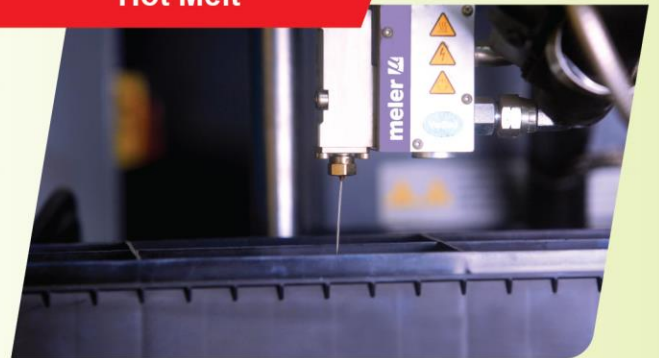
Inter Cell Welding (ICW)



- » Voltage regulator Online UPS
- » 100% perfect weld quality
- » Reliable weld head design
- » Three axis weld head motion

- » Prevention from cell short damage
- » Prevents plate/cell vibration
- » Uniform temperature control
- » Fully automated melting pot

Hot Melt



Charging Tank



- » Automatic formation water bath
- » Temperature controlled formation through water chilled recirculation
- » Built-in ATP in each tank
- » Automatic loading and unloading line and shuttles

- » Automatic terminal brushing system
- » Automatic and uniform grease pasting on each terminal
- » HRD and HVT testing
- » Code engraving system

5-in-1 Combo Finisher





Flammables



Shield eyes



Keep out of reach
of children



Caution of
sulfuric acid



Read instruction
manual carefully



Explosive

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