

ENDURANT BATTERIES



New Zealand's Leading Marine Battery. No matter what the application...no matter what the demand Hella Endurant Batteries has the correct battery for the rigorous demands typical of marine service. For pounding vibration due to heavy seas, long cranking due to stubborn engine starting, heavy house power and auxiliary loads, long hours of trolling without recharge and even extremely heavy demands of commercial vessels and luxury yachts.

Hella Endurant Batteries delivers the highest quality, most extensive range with sizes and types to fit any marine application, offering value for money and peace of mind.

Petrol Engine Starting **Auxiliary Applications** **Communications**
Diesel Engine Starting **House Power** **Trolling Motors**
Multi Battery Systems



DISTRIBUTED BY:



MARINE DEEP CYCLE BATTERIES

FLOODED TYPE

MARINE DEEP CYCLE



- Low Maintenance - reduced water loss. Can easily top up water if required
- Anti-Vibration design - prevents damage caused by shock and vibration
- Heavy duty plates providing excellent cycling and extended life
- 2 year warranty

MARINE & INDUSTRIAL D/C Batteries - Hella Endurant Cyclomaster - Flooded Type

Type	Detail	Type	Assy	Term	Length	Width	Height	CCA	A/Hrs
R220	6V	D/C	L6	UP	260	180	279	N/A	220
R245	6V	D/C	L6	UP	260	180	302	N/A	245
L16	6V	D/C	L6	UP	298	178	419	N/A	375
8V	8V	D/C	L6	UP	260	180	279	N/A	165
J145	12V	D/C	L	D/F	346	171	283	N/A	145
J185	12V	D/C	L	D/F	381	178	371	N/A	185

MARINE DEEP CYCLE Batteries - Hella Endurant Cyclomaster - Flooded Type

Type	Detail	Type	Assy	Term	Length	Width	Height	CCA	A/Hrs
MDC22NF/45	12V	D/C	L	STD	244	135	225	N/A	45
MDCU1/35	12V	D/C	R	LUG	195	131	183	N/A	35
MDC/62N	12V	D/C	L	UP	241	140	230	N/A	62
MDC22/65	12V	D/C	L	D/F	240	170	218	300	65
MDC24/85	12V	D/C	R	UP	270	170	250	515	85
MDC27/105	12V	D/C	R	UP	318	170	250	575	105
MDC31/130	12V	D/C	C	UP	330	171	263	685	130
MDC8D/240	12V	D/C	3R	STD	527	279	250	1000	240

SIZING DEEP CYCLE BATTERIES

Sizing of marine batteries is critical to the performance of electrical items on any vessel. Insufficient capacity results in systems failure, poor battery performance and shortened battery life. Remember that a battery only stores power. Charging capacity with the number of hours is equally as critical to good battery performance. Periodically ensure your battery is fully recharged. Establish the power consumption of each accessory (in watts or amps), the number of operating hours you will use it and the electrical systems voltage.

$$\text{Watts} \div \text{Volts} = \text{Amps} \quad \text{Amps} \times \text{Hrs in use} = \text{Amp/Hrs}$$

FOR EXAMPLE:

Circuit	No.	x	Watts	÷	Volts	=	Amps	x	Hrs/Day	=	Amp/Hrs/Day
VHF	1		5		12		0.4		2		0.8
Stereo	1		30		12		2.5		4		10
Cabin Lights	3		21		12		5.3		3		15.8
TOTAL 26.6 AMP/HRS PER DAY											

Total usage for the above application is 26.6amps between charging periods. For safe assurance and longevity of battery life multiply the usage (26.6amps) x 2.5 - 3 = 66 - 75amp/hrs. Therefore you will require a minimum of a 65amp/hr battery. Engine running time is also imperative to ensure batteries are fully recharged. For further details on specing batteries to suit your requirements see your Hella Endurant Battery Specialist.

100% MAINTENANCE FREE - FULLY SEALED

GELLED TYPE



- Fully sealed maintenance free - spill proof/leak proof
- Faster recharging for quicker turnaround time
- Ideal for starting and/or trolling
- Most versatile: Starting, Deep Cycle and Stationary applications
- Gelled Electrolyte and tight packed construction eliminates vibration damage
- Self discharge rate less than 1% per month
- Installs upright or on side
- 2 year warranty

MARINE D/C Batteries - Hella Endurant Gelmaster - Gel Type

Type	Detail	Assy	Term	Length	Width	Height	CCA	A/Hrs
GC2	6V	L6	D/F	260	181	276	585	180
G11H	12V	R	LUG	211	130	184	215	32
G22NF	12V	L	D/F	238	140	235	245	51
G24	12V	R	UP	276	171	251	410	74
G27	12V	R	UP	324	171	251	505	87
G31DT	12V	C	UP	329	171	238	550	98
G4D	12V	3R	STD	527	216	254	1050	183
G8D	12V	3R	STD	527	279	254	1265	225

AGM TYPE



- Fully sealed maintenance free - spill proof/leak proof
- Tightly packed construction - provides greater resistance to shock and vibration
- Performs even underwater
- Convenient carry handle for easy transportation and installation
- Dual purpose design delivers great starting capacity and deep discharge service
- Very low to no gassing during recharge (unless overcharged)
- Installs upright or on side
- Low self discharge - longer lasting while not being used
- 2 year warranty

MARINE D/C Batteries - Hella Endurant Seamaster - AGM Type

Type	Detail	Assy	Term	Length	Width	Height	CCA	A/Hrs
A11H	12V	R	LUG	211	130	184	240	32
A22NF	12V	L	D/F	238	140	235	280	55
A24	12V	R	UP	276	171	251	470	79
A27	12V	R	UP	324	171	251	580	92
A31DT	12V	C	UP	329	171	238	650	105
A4D	12V	3R	STD	527	216	254	1100	200
A8D	12V	3R	STD	527	279	254	N/A	245

GOOD ENOUGH FOR AROUND THE WORLD
 A SAFE BET FOR YOU.



MARINE ENGINE STARTING BATTERIES

LOW MAINTENANCE

- Low Maintenance Battery - reduced water loss, can easily top up water if required
- Anti-Vibration design - prevents damage caused by shock and vibration
- Convenient carry handle for easy transportation and installation
- Clear case for ease in checking electrolyte levels
- 2 year warranty



MARINE ENGINE STARTING Batteries - Hella Endurant Boatmaster Low Maintenance Battery

Type	Detail	Assy	Term	Length	Width	Height	CCA	MCA	Res Cap	A/Hrs
M22/370	12V	R	D/F	240	174	213	370	460	85	48
M22/460	12V	R	D/F	240	174	213	460	570	110	60
M24/520	12V	R	STD	260	170	225	520	650	130	65
M24/580	12V	R	STD	260	170	225	580	700	140	75
M27/660	12V	R	STD	304	172	225	660	790	160	80
148/17	12V	R	STD	345	175	240	640	780	182	100
N120	12V	R	3R	505	183	236	800	940	220	120
N150	12V	R	3R	508	222	236	900	1030	295	150
N200	12V	R	3R	525	281	243	1100	1250	400	200



MAINTENANCE FREE

- Marine Maintenance Free - never needs water
- Anti-Vibration design - prevents damage caused by shock and vibration
- High Performance Engine Starting
- Calcium / Calcium latest technology
- Low self discharge - longer lasting while not being used
- Magic eye - can easily check state of charge (most types)
- Dual Terminal quick installation and for adding accessories (most types)
- Convenient carry handle for easy transportation and installation
- Low profile flush lid - easy to keep clean
- 2 year warranty



MARINE ENGINE STARTING Batteries - Hella Endurant Boatmaster Marine Maintenance Free Battery

Type	Detail	Assy	Term	Length	Width	Height	CCA	MCA	Res Cap	A/Hrs
MMF22/430	12V	R	D/F	240	174	213	430	540	78	48
MMF24/500	12V	R	D/T	260	174	225	500	630	108	60
MMF24/680	12V	R	D/T	260	174	225	680	800	137	75
MMF27/630	12V	R	D/T	304	173	225	630	760	150	75
MMF27/780	12V	R	D/T	304	173	225	780	910	170	80
MMF31/930	12V	R	STD	330	173	238	930	1060	200	100

HIGH PERFORMANCE Batteries - Hella Endurant Crankmaster Marine Maintenance Free Battery - Not for cycling use

Type	Detail	Assy	Term	Length	Width	Height	CCA	Res Cap	A/Hrs
CM615	12V	R	STD	208	171	205	615	94	0
CM615L	12V	L	STD	208	171	205	615	94	0
CM680	12V	R	D/T	260	174	225	680	137	0
CM680L	12V	L	D/T	260	174	225	680	137	0
CM1000	12V	C*	STD	276	178	229	1000	120	0
CM780	12V	R	D/T	304	173	225	780	170	0
CM780L	12V	L	D/T	304	173	225	780	170	0
CM930	12V	R	STD	330	173	238	930	200	0
CM1100	12V	C*	STD	330	171	241	1100	200	0
CM1450	12V	3R	STD	527	279	254	1450	465	0

*Terminals mounted in centre of lid



APPLICATION

Application list is based on minimum requirement. For boats with accessory loads use higher speeded (CCA/MCA) product or refer to deep cycle battery application guide.

OUTBOARD MOTOR STARTING REQUIREMENTS

Evinrude & Johnson	Low Maintenance		Maintenance Free		High Performance	
	TYPE		TYPE		TYPE	
2 & 3 Cylinder 40HP - 70HP	M22/370		MMF22/430		CM615	
V4 4 Stroke conventional up to 115HP, V4 2 Stroke direct injection	M22/460		MMF22/430		CM615	
4 Stroke up to 70HP	M22/460		MMF22/430		CM615	
4 Stroke 90HP - 140HP, V6 2 stroke direct injection	M24/580 or M27/660		MMF24/680		CM780 or CM1000	
V4 90HP - 115HP Rcht systems	M27/660		MMF27/630 or MMF27/780		CM1000	
V6 150HP - 175HP Rcht systems			MMF27/780 or MMF31/930		CM1000	

OUTBOARD MOTOR STARTING REQUIREMENTS

Mercury & Mariner	Low Maintenance		Maintenance Free		High Performance	
	TYPE		TYPE		TYPE	
3 Cylinder up to - 75HP	M22/370		MMF22/430		CM615	
3 & 4 Cylinder 75HP - 125HP, 4 Cylinder EFI 115HP	M22/460		MMF22/430		CM615	
V6 EFI 135HP - 200HP 2.5L	M24/520 or M24/580		MMF24/680		CM780 or CM1000	
V6 EFI 225HP - 250HP 3.0L	M24/520 or M24/580		MMF24/680		CM780 or CM1000	
V6 Optimax 135HP - 175HP, Optimax 200HP - 225HP 3.0L			MMF27/780 or MMF31/930		CM1000	

OUTBOARD MOTOR STARTING REQUIREMENTS

Yamaha	Low Maintenance		Maintenance Free		High Performance	
	TYPE		TYPE		TYPE	
3 cylinder 30HP - 90HP	M22/370		MMF22/430		CM615	
V4 115HP	M22/460		MMF22/430		CM615	
V4 140HP, V6 150HP	M24/520 or M24/580		MMF24/500 or MMF24/680		CM615 or CM680	
2 stroke HDPI 150, 200, 250	M24/580 or M27/660		MMF24/680 or MMF27/780		CM780 or CM1000	

OUTBOARD MOTOR STARTING REQUIREMENTS

Honda	Low Maintenance		Maintenance Free		High Performance	
	TYPE		TYPE		TYPE	
4 stroke up to 75HP	M22/370		MMF22/430		CM615	
4 stroke 90HP	M22/460		MMF22/430		CM615	
4 stroke 115HP - 130HP	M24/520 or M24/580		MMF24/500 or MMF24/680		CM615 or CM680	
4 stroke 175HP, 200HP, 225HP			MMF27/780		CM1000	

OUTBOARD MOTOR STARTING REQUIREMENTS

Suzuki	Low Maintenance		Maintenance Free		High Performance	
	TYPE		TYPE		TYPE	
50HP, 75HP, 90HP injected	M22/370		MMF22/430		CM615	
115HP injected	M22/460		MMF22/430		CM615	
140HP injected	M24/520 or M24/580		MMF24/500 or MMF24/680		CM615 or CM680	

OUTBOARD MOTOR STARTING REQUIREMENTS

Inboard Engines	Low Maintenance		Maintenance Free		High Performance	
	TYPE		TYPE		TYPE	
Petrol Engine 4 & 6 cylinder up to 3 litre	M22/460		MMF22/430		CM615	
Petrol Engine 6 & 8 cylinder over 3 litre	M24/520 or M24/580		MMF24/500 or MMF24/680		CM615 or CM680	
Diesel Engines	refer your battery specialist for further details to ensure correct application					

BATTERY COMPARISONS

The difference between a Car, Marine Engine Starting and Deep Cycle Battery.

Marine Engine start provides sufficient cranking amps to start the motor and is designed to cope with relatively shallow cycling when required. Care should be taken when sizing to ensure after some discharge that the battery is large enough to still start the engine.

Deep Cycle Batteries have thicker plates to provide long life in charge / discharge applications. Deep Cycle Batteries can start engines but a larger battery is required.

Hella Endurant Batteries: Quality, Performance and Reliability Guaranteed.



BATTERY CARE AND MAINTENANCE

1. Always select a battery that has enough cranking power or capacity to get the job done.
2. Periodically ensure your battery is fully recharged. Without use some batteries discharge up to 10% of their capacity each month. (flooded type)
3. Failure to charge a battery will cause sulphation leading to poor life and performance.
4. Check battery levels monthly. Ensure they are at the upper level indicator. Top up using distilled water. If topping up is required more than 3 times a year contact your Hella Endurant Battery Specialist.
5. Ensure battery terminals are clean. If corrosion occurs, pour boiling water over terminals and cover with either vaseline or a grease based applicator.
6. Keep battery top clean and acid free, ensure battery is held down securely for extended life.
7. Only use a battery for its designed purpose. i.e. Marine Engine Start, Deep Cycle, etc.

KEY

CCA = Cold Cranking Amps

The international recognised battery performance test. The discharge load in amperes which a fully charged battery at -18 degrees C (0 degrees F) can deliver for 30 seconds and maintain a voltage of 7.2 volts.

MCA = Marine Cranking Amps

Same as above, tested at 0 degrees C (32 degrees F)

Res Cap = Reserve Capacity

The time in minutes that a new fully charged battery will supply a constant load of 25amps at 25 degrees C without the voltage falling below 10.5 volts for a 12 volt battery.

Amp/hrs = Ampere Hours

A unit of capacity that is calculated by multiplying the current in amps that the battery can deliver for 20hrs to 10.5 volts for a 12 volt battery.

WHAT GOES THE DISTANCE