Nickel-Iron Batteries From BeUtilityFree!

Thomas A. Edison invented the nickel-iron battery at the turn of the century while searching for a rugged, long-lived storage battery. Actual performance records have proven his design with thousands of batteries still in service today. Nickel-iron battery technology has withstood the test of time. BeUtilityFree™ considers this battery to be the "ultimate" battery for longevity, durability, ruggedness, and ease of maintenance with its clear plastic see-through battery case. It can offer a lifetime of reliable service for home power systems, railroads, telecommunications, boats, island home power systems, or any other application where "you only want or need to buy just **ONE** battery and be done with it."

The nickel-iron batteries we offer have been manufactured for over 22 years by a Chinese manufacturing company which has won 36 prizes in their country. The advanced battery manufacturing assembly line was imported from VARTA AG Germany, thus what you are buying is Germany technology at a very reasonable price.

These batteries have many advantages listed below. Review them and compare. Once you use a nickel iron battery, you'll never return to lead acid batteries again! Our company is the exclusive importer for North America and South America and we have been importing then into the US from 1995. We have batteries that are over 10 years old and still producing 100% of their rated capacity! These are facts, not myths or half-truths.

WARRANTY

We have the best warranty in the home power industry.

It is a 10 year warranty. The first 6 years is a free cell replacement and a 4 year prorated warranty that covers the battery in day to day service after the first 6 years, NOT float service. In other words these batteries like to be worked! Contact us for a copy of the warranty.

FINANCING

We offer battery financing for those who need it. Not being able to afford these batteries has been a detriment for many people, up until now! There should never be a reason NOT to consider this battery for your next battery bank because of cost. We can finance up to 50% of the cost of this battery. You can take the money you would have paid for a top quality lead acid battery and get a true lifetime battery instead! No other company selling batteries offers battery financing. We consider the battery the heart of your renewable energy system, so why not purchase your battery just once like other component parts of your system? Contact us for our battery financing flyer.

Battery Features	Nickel-Iron	Lead-Acid
Up to 40-year life	**Yes**	**No**
Frequent hydrometer readings	**No**	**Yes**
Use on DC to AC inverters (1)	**Yes**	**Yes**
Add to system anytime (2)	**Yes**	**No**
Bad cell easily removed (3)	**Yes**	**No**
Wide operating temperature	**Yes**	**No**
Safely fully charge in 5-7 hours	**Yes**	**No**
Equalization charge required (4)	**Yes**	**Yes**
Has memory effect (5)	**No**	**Yes**
Over/undercharging damage	**No**	**Yes**
Safely left in any state of charge	**Yes**	**No**
Plate sulfation	**No**	**Yes**
Toxic substances	**No**	**Yes**
Corrosive fumes (6)	**No**	**Yes**
HydroCaps™ available	**Yes**	**Yes**
Regulator optional	**Yes**	**No**
Venting optional	**Yes**	**No**
Translucent/transparent cases	**Yes**	**No**

1. Most inverters on the market are designed for lead acid batteries, but NiFe batteries can be used on most inverters today. We recommend Exeltech MSX, OutBack, Samplex and Xantrex sine wave inverters.
2. Lead acid batteries internal resistance (IR) increases at a steady rate while alkaline batteries IR stabilizes. Don't mix batteries with different internal resistances.
3. NiFe cells are much lighter then lead acid cells and also have less voltage per cell.
4. Twice a year for alkaline batteries and once a month for lead acid batteries.
5. Sinterplate nickel cadmium batteries and some lead-acid batteries have a memory effect. The memory effect will never happen with pocket plate nickel-iron.
6. Nickel iron batteries produce only hydrogen and oxygen past 80% state of charge. Gases still should be vented to meet electrical code.

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8:30-5:30 MST, Mon-Fri

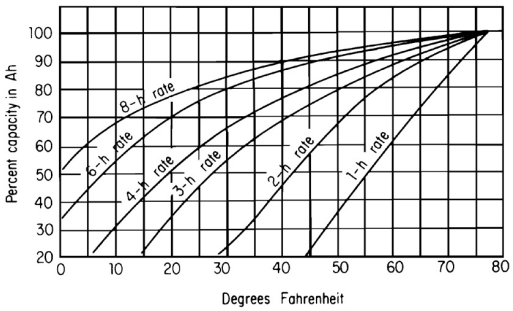
BATTERY OPERATING CHARACTERISTICS

WHY CAN A NICKEL-IRON BATTERY LAST 40 YEARS?

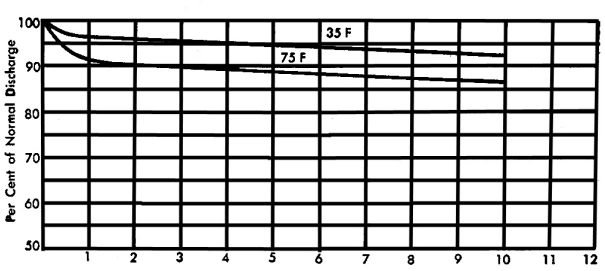
In a lead-acid battery the acidic electrolyte interacts with the plates during every charge and discharge cycle, causing lead to shed off the plates and reducing the battery capacity. From the day you start charging a lead-acid battery you are losing capacity with each use, ending in plate disintegration.

With a nickel-iron battery there is **NO** chemical interaction between the plates and the electrolyte. In fact the electrolyte used in a nickel-iron battery (potassium hydroxide, i.e. KOH) is a metal **preserver**.

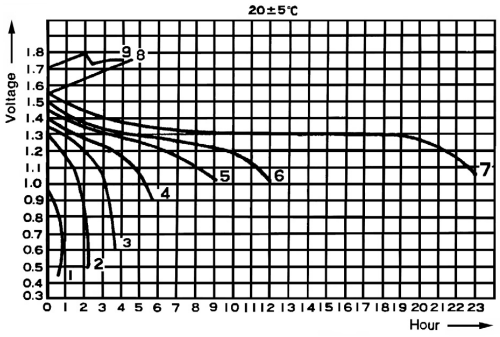
Exposure to air causes the electrolyte to form potassium carbonate and lose its ability to conduct electricity. One to two electrolyte replacements **may** be needed to replenish the battery capacity in its lifetime. The need to replace electrolyte depends on many factors, but is relatively easy with proper equipment. This is why we have nickel-iron batteries in the field that are producing 100% of their rated capacity after over **50 years of use!**



How cold weather effects performance on the nickel-iron battery.



Period of Rest Between Charge and Discharge in Days



1. 1-hr discharge rate
2. 2-hr discharge rate
3. 3-hr discharge rate
4. 4-hr discharge rate
5. 8-hr discharge rate
6. 10-hr discharge rate
7. 20-hr discharge rate
8. Normal charge
9. Rapid charge

A fully-charged battery loses charge as it sits. A suitable trickle charge will offset this loss.

BATTERY PRICING AND SPECIFICATIONS

Part #	Ah*	Dimensions (inches) W x L x H	Dimensions (mm) W x L x H	Weight Lb	Weight Kg	Price Per Cell	12V System	24V System	48V System
7008	122	6 x 3 x 15	140 x 79 x 360	11	5	$101	$1010	$2020	$4040
7009	183	6 x 4 x 18	164 x 106 x 345	23	10	$151	$1510	$3020	$6040
7010	244	6 x 7 x 18	164 x 162 x 345	24	12	$202	$2020	$4040	$8080
7011	305	7 x 7 x 18	167 x 162 x 345	27	16	$252	$2520	$5040	$10,080
7012	366	11 x 6 x 18	276 x 138 x 420	37	18	$302	$3020	$6040	$12,080
7013	488	11 x 6 x 18	276 x 138 x 450	41	20	$403	$4030	$8060	$16,120
7014	549	11 x 6 x 18	276 x 138 x 450	45	22	$454	$4540	$9080	$18,160
7015	610	16 x 8 x 22	276 x 138 x 450	49	24	$504	$5040	$10,080	$20,160
7016	732	16 x 8 x 22	290 x 174 x 505	61	30	$605	$6050	$12,100	$24,200
7017	854	16 x 8 x 24	398 x 174 x 505	67	33	$706	$7060	$14,120	$28,240
7018	976	16 x 8 x 24	398 x 185 x 560	116	53	$806	$8060	$16,120	$32,240
7019	1220	16 x 8 x 24	398 x 185 x 560	121	55	$1008	$10,080	$20,160	$40,320

On all cells larger than 300 Ah take 10% off. On cells larger than 600 A take 15% off.

* 100 hr. **discharge** rate. Manufacturer **charge** rate: C/5. Batteries are sold by the cell, so any voltage combination is available! Includes interconnect bars between cells, manual, flip-top battery caps and dry electrolyte chemicals (buyer must add distilled water to chemicals). For BeUtilityFree to fill and cycle cells, add $175 per 10 cells. Does not include the float oil required to fulfil warranty. Buyer pays freight FOB LA, CA to final destination. Cell range: 12V:10 cells, 24V:18-21 cells, 48V: 36-41. Battery specifications @ 25° C (77° F). Table price effective date September 8, 2008.

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