

Why surface area is so important.

As a battery is discharged, the electrolyte (sulfuric acid solution) at the plate surface is converted to water and an electron is created that produces electricity. However, as a by-product of this process, a layer of lead sulfate forms on the plate surface as a battery is discharged.

The accumulating sulfate layer prevents electrolyte from reaching the plate surface, which inhibits the plate's ability to maintain voltage. Thus the more surface area on the positive plate, the longer the plate is able to sustain higher levels of voltage throughout a discharge cycle. So thanks in part to the square tube, the EnerSys Ironclad battery maintains higher voltage in your equipment and allows you to maximize productivity.

Delivers more useable power.

We call this advantage in productivity over conventional plate and round-tube batteries the Ironclad Effect. It typically delivers 15% more useable energy, depending on the duty cycle. So your trucks accelerate faster, move faster, and lift faster. That's sure to help your bottom line.

Tale of the tubes.

Our Cladex tubing is made from braided fiberglass, which is more resistant to acid and temperature extremes than polyester tubing used by other round-tube manufacturers. It's impervious to electrolyte so it will not disintegrate like polyester. The strength and rigidity of the Cladex tube will retain the square shape throughout its life and is never the point of failure.



Braided Fiberglass Cladex Tubing

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Call 1-800-EnerSys to reach your nearest EnerSys Ironclad representative.

Recycle your spent batteries with EnerSys.

We respect the environment. We know and comply with all federal and state regulations regarding the handling of spent lead-acid batteries. Smelters we use for recycling have RCRA Part B permits as required by the EPA. We also accept the return of any lead-acid battery for recycling regardless of the manufacturer.



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M O T I V E P O W E R B A T T E R I E S



How a better battery can reduce operating costs and increase profit.

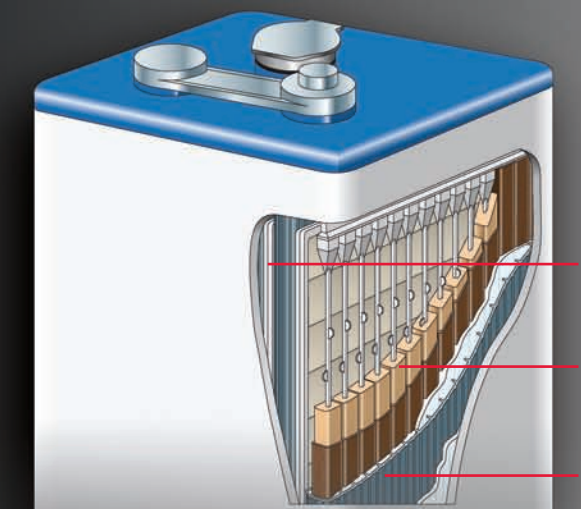
For nearly 100 years, the square design of EnerSys Ironclad batteries has outperformed round tubular and flat-plate design batteries. The unique square tube technology helps you get your work done faster, more efficiently, and more profitably. Add the exclusive PowerMAXX™ service program from EnerSys and our FIVE PLUS ONE™ warranty program and you'll agree that EnerSys offers the strongest product, service and support system in the business.

More useable power means more work, and more profit, per shift.

EnerSys Ironclad technology.

It's the unique, square tubular plate design that, depending on battery size, provides up to 84% more surface area on the positive plate than other plate types. That makes round tube and flat plate designs, well, flat by comparison.

**Exclusively Square.
Exclusively Powerful.
Exclusively EnerSys.**



NEGATIVE PLATE
SQUARE TUBULAR POSITIVE PLATE
SLEEVED SEPARATOR

Exclusively Square

Exclusively Powerful

Exclusively EnerSys

No matter the application, call on the Hogs.

EnerSys Ironclad Smarthog...the perfect no-hassle, no-spill, no-watering battery for any electric-powered vehicle.

The Smarthog line offers the industry's first 23" and 31" high, 80- and 120-AH fully sealed, valve regulated lead acid batteries. And other sizes are also available in 11", 14", and 18.5" heights. Clean, safe, and efficient, Smarthog batteries eliminate the need to remove vent caps, add water, or take hydrometer readings. At the end of the workday, simply connect the battery to your charger.

- Valve regulated lead-acid (VRLA) technology permits the battery to emit minimal gas under normal conditions.
- For plug-in-anywhere charging convenience use Smartpack integral battery charger units. Can be plugged into any 15A, 120V AC line.

EnerSys Ironclad Workhog...more power per rating than conventional or flat plate batteries.

A performance leader since 1910, the Workhog has proven itself as a reliable, rugged performer in thousands of applications and work environments. Workhogs are available in sizes to fit vehicles from small personnel carriers to the largest 100,000 lb. lift truck.

The Workhogs, rated at 85- and 125-AH, are the most powerful standard rated batteries available.

- The Ironclad Effect will keep your trucks moving faster and lifting quicker by maintaining higher voltage levels longer during discharge than conventional flat plate or round tube batteries.
- The result of better discharge voltages is more work: better speed and more trips per hour with fewer ampere-hours of discharge per trip.

EnerSys Ironclad Superhog...power to spare for your biggest jobs.

For the fastest runs, quickest lifts, and most demanding industrial and warehousing applications, turn to the super performance, long life, and easy maintenance of the supercharged Superhog. It delivers consistently higher voltages, so your trucks maintain optimum travel speed and lift quicker. Superhog 110- and 155 AH batteries virtually eliminate worry of over-discharging, premature battery changes or production stops.

- The Superhog E110 maintains 40% of its charge when a conventional 85-AH battery reaches the critical 80% discharge point and is ready to be recharged.
- The Superhog E155 typically lasts 2 1/2 hours longer than a conventional 125-AH battery.

EnerSys Ironclad Loadhog...high performance for long shifts.

The Loadhog was the first battery to pack 100 amp-hours of capacity into a standard 85-AH compartment. That's 18% more capacity than similarly sized conventional batteries – more than enough to keep running strong through the toughest shifts.

- The Loadhog E140 excels in high reach or rider-type lift trucks. The E140 provides this extra capacity while still using standard electrolyte gravity.
- The 19" E75L low-profile Loadhog keeps your low-profile lift trucks running strong for a full shift.

EnerSys Ironclad Deserthog...the most maintenance free flooded battery in the industry.

Deserthog is the ideal choice for medium to heavy-duty applications that aren't suitable for a sealed battery. Available in three sizes, the Deserthog contains an added water reserve that gives you up to four inches of watering space. Simply add water about four times a year versus every week, so you'll have a more efficient operation with lower maintenance costs.

PowerMAXX™ Total Service Program...
because less downtime means more profit.

At EnerSys, service means much more than maintenance and repairs. It also includes our Total Operation Review and Equipment Utilization Inspection programs. They allow your EnerSys service representative to determine the most efficient use of all equipment so that batteries and chargers last longer, workers change batteries less often, and you maximize vehicle productivity without compromising safety.

Over 350 trained technicians staff a network of service locations and mobile vans in North America. Thoroughly schooled in every aspect of battery and charger technology, our technicians return to the classroom every year for formal updates on changes in technology and new products. It's the largest, strongest company-backed service and support team in the business.

Our National Service and Parts Center in Richmond, Kentucky, stocks over 300,000 parts, including battery cells, charger parts and battery room safety equipment. We can ship parts within 24 hours to respond quickly and efficiently to special needs.

Quality so high we back it with a **FIVE PLUS ONE™** warranty.*

Add to that an up-front offer – in writing – to credit you with 25% of your original purchase price toward a new battery after five years, and you have a true money-saving combination.

*Limited to flooded-type batteries only.

