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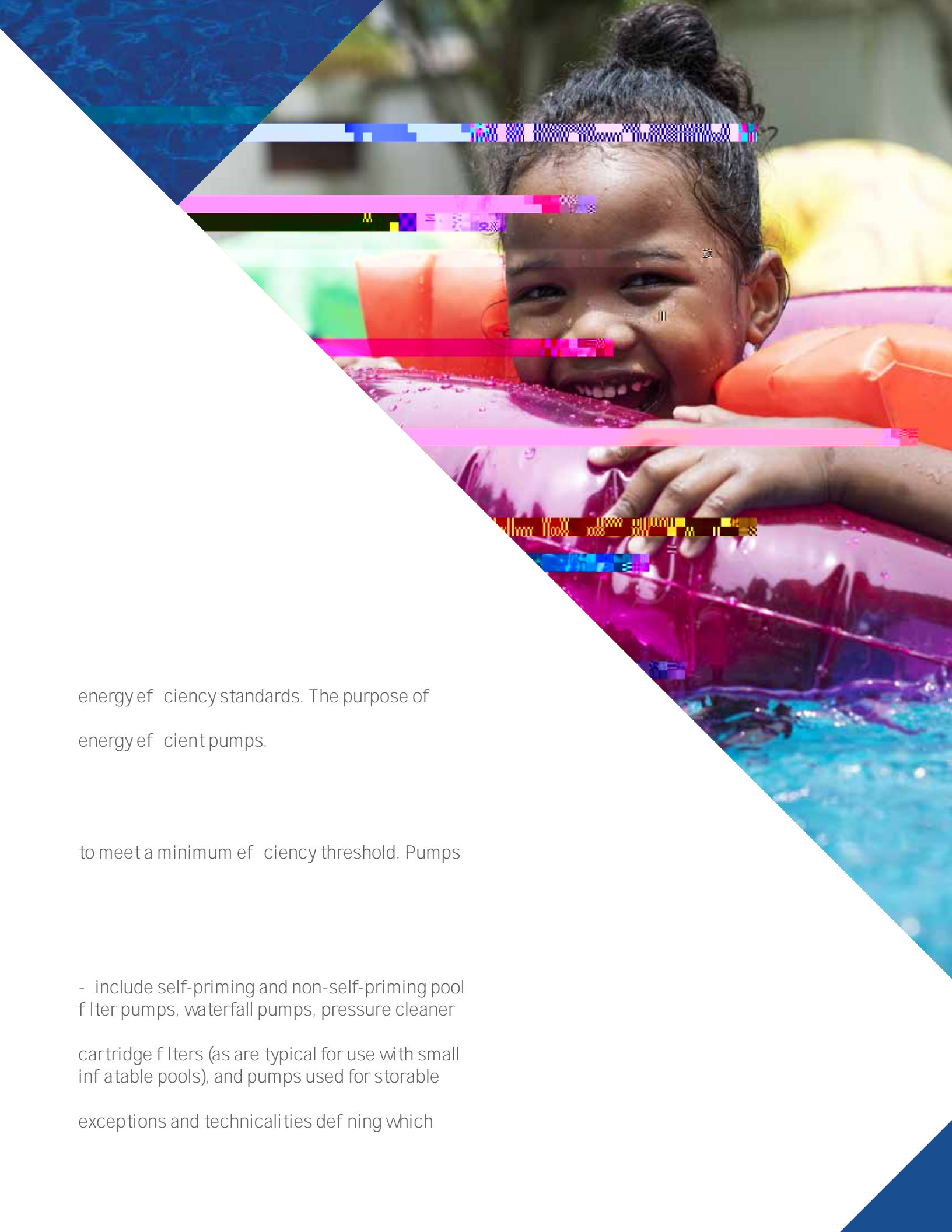
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energy efficiency standards. The purpose of energy efficient pumps.

to meet a minimum efficiency threshold. Pumps

- include self-priming and non-self-priming pool filter pumps, waterfall pumps, pressure cleaner

cartridge filters (as are typical for use with small inflatable pools), and pumps used for storable

exceptions and technicalities defining which

$$\text{HHP} = \frac{\text{Flow rate (gpm)} \times \text{Total head (ft)}}{3960}$$

With this baseline understanding of the “must knows,” let’s further define key terms.

KEY TERMINOLOGY

1.

2.

3.

4. WEF (Weighted Energy Factor)—a measure of the pump’s energy efficiency that takes into account the amount of water pumped. The higher the WEF, the more efficient the pump. Each pump must be labeled with its WEF.

FLOW RATE

Typically measured by a flowmeter in gallons per minute (GPM), this is the volume and rate at which water flows. Filtration systems, require a certain amount of flow to do their jobs properly. The required flow varies, and as a function of filter size and configuration, dirt load in the filter, and other factors - some related to system design (equipment choices, plumbing) and some related to use (is the filter dirty or clean?). Understanding the flow required by the system, and how much flow a pump is capable of generating is critical when selecting a pump.

HHP

Hydraulic horsepower defines pump performance. It is directly proportional to flow.

$$\text{HHP} = \frac{\text{Flow rate (gpm)} \times \text{Total head (ft)}}{3960}$$

you won't have enough flow to do the

frequent filter cleaning, reduced product

PUMP CLASSIFICATIONS (EQUIPMENT CLASSES)

The new DOE rule defines different pump classifications with different performance and efficiency

is classified and what minimum performance requirements it must meet.

What we typically call an in-ground pump will be classified as self-priming. Self-priming efficiency requirements.

LARGE SELF-PRIMING POOL PUMPS

This class of pool pumps have HHP between 0.711 and 2.5. Pumps with HHP ratings in that range will typically have THP ratings between about 1.2 and 5.0. Variable-speed pumps will easily meet this requirement. However, it is unlikely that currently available single-speed or two-speed pumps will

SMALL SELF-PRIMING POOL PUMPS

These are pool pumps with HHP below 0.711. Pumps with these lower HHP ratings will typically have THP ratings around 1.2 or lower. Many of today's single-speed pumps with very efficient motors are

WATER FEATURE AND SPA BOOSTER PUMPS

performance characteristics of self-priming pool filter pumps are therefore classified as such and must comply with the minimum performance requirements of self-priming pumps (described in the two paragraphs above). This regulation is not application specific.

ABOVEGROUND POOL PUMPS

These pool pumps are referred to in the DOE regulation as non-self priming - pumps that do not achieve a prime at 5 feet in 10 minutes. Some single-speed pumps with moderately efficient motors

PRESSURE CLEANER BOOSTER PUMPS

regulation. Most single-speed pressure cleaner booster pumps with moderately efficient motors will

we use them for waterfalls; rather, it's because these ultra low-head pumps operate at a maximum

VARIABLE SPEED: THE RIGHT PUMP FOR THE REGULATIONS

Variable-speed pumps are the ideal choice for anyone who wants to maximize energy efficiency without compromising performance. They can run at high speeds for high-demand tasks like running jets or large waterfalls, while also being able to operate at lower - more energy-efficient - speeds for less demanding tasks like circulating pool water. When they run

variable-speed pumps can last longer than single-speed pumps. This is because single-speed

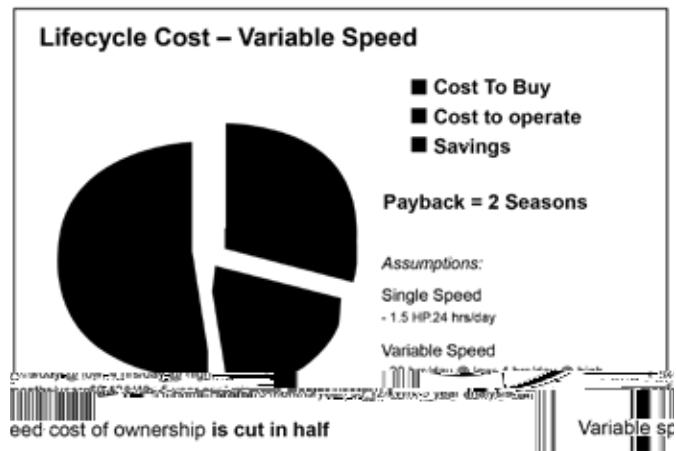
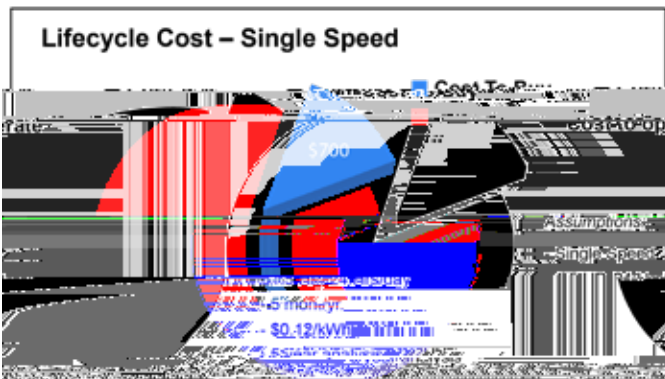
is probably not simple circulation with a clean filter. In other words, single-speed pumps are always

Cost-savings are also significant. The initial purchase price of variable-speed pumps is higher than single-speed pumps. However, the savings in operational costs over time are significant and should not be overlooked. The energy cost to operate a single-speed pump in one year may be higher than the purchase price, while the energy cost to operate a variable-speed pump for one year may be a

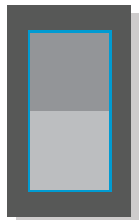
cost (which will vary from region to region) is \$900/year for a single-speed pump and \$200/year for a variable-speed model.

COMPARISON OF PURCHASE PRICE AND OPERATIONAL COSTS

For specific savings in your market, use the Pentair Energy Calculator, found at www.pentair.com/pumpregulations



A pump's purchase price is a small percentage of its cost to operate. So when considering operating cost over time, you can save significantly more with a variable-speed pump.



Lower flow pumps — those with HHP less than 0.711 — will still be available in higher efficiency single-speed models to comply with the new WEF requirements for small, self-priming pumps.

This is where variable-speed and flow technology comes in. Variable-speed and flow pumps provide the best option for higher flow applications that meet the new stringent standards. They help reduce energy costs for the consumer and provide additional important benefits such (heaters, filters, etc.).

benefits that come with that, such as rebates, tax credits, and other incentives to buy more energy efficient pumps.



Just as Pentair has variable-speed and flow pumps that currently meet ENERGY STAR 2.0

first incorporated into it in 2013. Pentair has received the ENERGY STAR'S Partner of the Year recognition seven times - every year since the program started rating pool equipment.