

# The Complete Guide to Choosing Dock De-Icers for Boat Owners



In 2018, the town of Ellsworth, ME spent \$100k [repairing ice damage](#) to its docks. Ice poses an incredibly dangerous risk to your dock, boats, and even fish and other marine life. This makes choosing dock de-icers an important money-saving decision.

Read on to learn more about how ice will wreak havoc on your docks, marinas, and boats... and what you can do about it.

## How Does a Dock De-Icer Work?

Dock de-icers use an ingenious method for keeping your dock from freezing. They use a motor and propeller to pull warmer water from below the surface up towards the top to keep the surface water above the freezing point. This will also help melt any ice that may have already formed near your dock.

By keeping the water relatively warm, the structure of your dock, any surrounding watercraft, and other structures will be kept safe. These warmer areas can even serve as havens for fish as other parts of the lake freeze over. Without these warmer spots, fish that live in smaller lakes and

ponds can be killed off - a phenomenon known as "winter kill."

If you live on the water, protection from ice damage is essential. Before we discuss choosing dock de-icers, let's talk about what makes ice so dangerous.

## How Ice Can Damage Your Dock

As winter temperatures get colder, ice can begin to creep in. Small amounts of ice that may show up in late fall can be relatively harmless, but as temperatures plunge, ice becomes much more dangerous.

### Ice Jacking

Ice jacking occurs when the pilings that support your dock are lifted out of their foundation. This phenomenon occurs when the ice around the pilings creates upward pressure on the dock. The pressure can be affected by several forces, including the tide, man-made changes to the body of water such as releasing water on a lake with a dam, and extreme freezing temperatures.

Ice jacking occurs when the water rises to a higher level, freezes, and then recedes, leaving a layer of ice along the high-water mark. As the water settles it freezes again, leaving another layer of ice. As the water rises again, it breaks the second level of ice and pushes it into the first.

The process is similar to jacking up a car, hence the name, "ice jacking." If ice jacking is allowed to persist, pressure will increase and it can eventually lift your dock enough to pull the pilings right out of their foundation, and sometimes even snap them in half.

This is where costly and lengthy repairs start to ruin your day(s).

### Ice Expansion

Ice expansion is similar to ice jacking. Water expands as it freezes, and as it expands, it can crack, shift, lift, or snap pilings out of its foundation. It can also damage the dock when water gets into any spaces or gaps and then freezes.

While ice jacking typically requires the level of water to rise and fall, ice expansion does not. That means that even docks on calm, placid waters can be endangered.

### Winter Kill

As mentioned, [winter kill](#) involves the death of fish and wildlife beneath and around the water's surface. As ice forms on the surface of the water, it can create an opaque layer that's difficult for

light to penetrate. With less sunlight, underwater plants are unable to produce as much oxygen for animals that live beneath the waves.

Eventually, the plants can start to decompose, further depleting the oxygen in the water. This escalates the rate at which other plants and wildlife die off.

## Choosing Dock De-Icers

Don't worry - you can prevent all of the preceding disasters with dock de-icers. Also known as ice eaters, dock de-icers come in two styles: bubblers and agitators.

### Bubblers

Bubblers work by releasing small air bubbles through a hose. The hose is underwater, has small perforations in it, and is powered by an air compressor. Bubblers can be beneficial if the water near your dock is shallow because they don't stir up as much sediment as agitators can in shallow water.

Stirring up a lot of sediment can lead to an increase in [algae growth](#) during the spring and summer months. The downside to bubblers is that they're susceptible to weather damage if they aren't protected.

### Agitators

Agitators are the most popular style of dock ice protection. They work by pulling warmer water from deeper in the lake up toward the surface. The warmer water not only removes any existing ice but keeps additional ice from forming.

They can be placed under a dock or under a boat to protect its hull. Mooring ropes, a dock de-icer dock mount, or a floating mount are used to position the dock deicer and direct the water flow. Marinas will often use several dock de icers, even dozens for larger operations, for full protection.

Dock de-icers are available with different horsepower options and cord lengths. After determining the size of the area that you need to keep from freezing you can decide which horsepower, mounting, and cord length options will work best for you.

## What Are My De-Icer Options?

There are several options for dock de-icers from which you can choose. However, three of the most trusted brands include Bearon Aquatics/Power House Ice Eaters, Kasco De-Icers, and

Scott Aerator De-Icers.

## **Bearon Aquatics / Power House Ice Eaters**

[Power House Ice Eaters](#) have been around for over 40 years and have helped thousands of dock owners protect their docks and watercraft. They work by sucking up warmer water from deep below the surface and directing it to where you need it most, melting ice and preventing it from forming.

Power House was purchased by their manufacturer and the company is now known as Bearon Aquatics. Nothing has changed with their high quality design and manufacturing.

There are four models of Power House Ice Eater, and each one is available in 115v or 230v varieties, and your choice of power cord length (25ft, 50ft, 100ft, 150ft, or even longer for 230v). The models include:


- Ice Eater P1000
- Ice Eater P750
- Ice Eater P500
- Ice Eater P250

The size of Ice Eater you need depends on the size of the area you want to protect. If mounted vertically, the largest model, the P1000, can keep an area up to 80ft in diameter ice-free, the P750 up to 60ft, the P500 up to 40ft, and the P250 20-25ft.

If you use an ice eater dock mount and angle your ice eater you will find that instead of a circular opening, it will be an oval shape. While the width may not be as wide, the length will be longer, up to 140 feet with the P1000.

It should be noted that when we mention measurements for openings we are talking about in normal conditions, which we call temperatures down to 20°F. As the temperature drops colder than that you will see a reduction in the size of the opening that a dock de-icer can create.

But even at temperatures down to 0 you will only see about a 10-15% reduction in the size of the opening. At temperatures below -25°F you may see a reduction in size of 50%. Keep this in mind if you face extreme temperatures. You will most likely need more horsepower and probably more than one unit.

		<h1>De-Icer Model Comparison</h1>			
Model	P250	P500	P750	P1000	
Motor	1/4 Hp	1/2 Hp	3/4 Hp	1 Hp	
Volts/Amps	115v / 2.5 amps	115v / 6.5 amps	115v / 6 amps	115v / 7 amps	
	230v / 1.25 amps	230v / 3.25 amps	230v / 3 amps	230v / 3.5 amps	
Thrust	20 lbs	18 lbs	32 lbs	36 lbs	
Diameter of Opening*	*assumes normal winter conditions, extreme conditions may affect opening size				
	20 ft - 25 ft	Up to 40 ft	Up to 60 ft	Up to 80 ft	

## Kasco De-Icers



Kasco is the other much-loved dock de-icer provider. [Kasco de-icers](#) work the same way Power House does, by bringing warmer water up from deep below the surface. There are five separate models from which you can choose. These include:

- 2400D
- 3400D
- 3400HD
- 4400D
- 4400HD

Kasco and Power House both make a high quality dock de-icer, and the choice between the two comes down to personal preference and the size of the area you need to keep clear. The largest Kasco de-icer, the 4400HD, can keep an area up to 90ft in diameter free from ice, which is about 10% more than Power House's model.

Kasco De Icers are available with a dock mount (universal or industrial) and with mooring ropes, which are included with purchase.

Both the Kasco and Bearon Aquatics dock de-icers are back by a 3-year Warranty. These are the highest quality dock de icers in the water and we recommend them as part of your dock ice protection plan.

		<b>DE-ICER SIZING CHART</b> <i>Clearing size may vary greatly based on a number of local conditions.</i>						
AIR TEMP	34° to 20° F (-1 to 6.5° C)		19° to 0° F (-7 to -18° C)		-1° to -20° F (-19 to 29° C)		BELOW -20° F (-29° C)	
ORIENTATION	ANGLED	VERTICAL	ANGLED	VERTICAL	ANGLED	VERTICAL	ANGLED	VERTICAL
1/2 HP	30 X 100 FT.	65 FT.	25 X 60 FT.	50 FT.	25 X 55 FT.	35 FT.	20 X 40 FT.	30 FT.
3/4 HP	35 X 120 FT.	85 FT.	30 X 80 FT.	70 FT.	30 X 75 FT.	50 FT.	25 X 50 FT.	45 FT.
1 HP	40 X 150 FT.	90 FT.	35 X 90 FT.	80 FT.	35 X 85 FT.	65 FT.	30 X 60 FT.	55 FT.

## Scott Aerator De Icers

Scott Aerator De Icers are another high-quality de-icer that we have used and recommend. They have been in the fountain, aeration, and de-icer business for over 50 years and like Bearon Aquatics and Kasco, they too are manufactured in the United States using American-made stainless steel, even the motor.

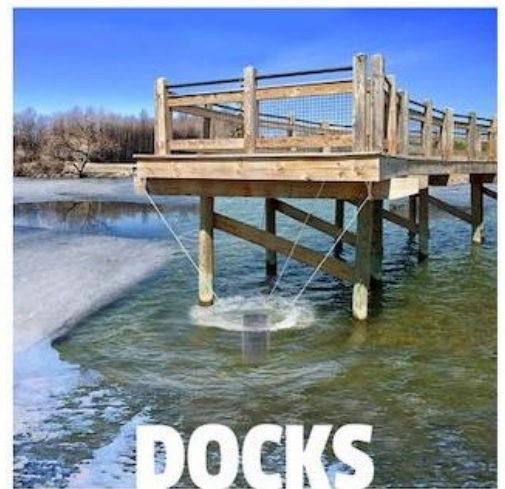
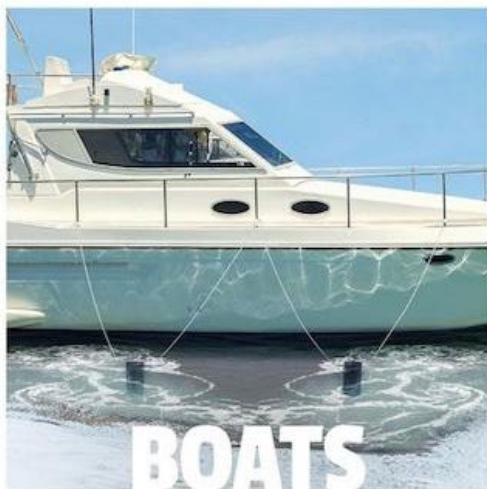
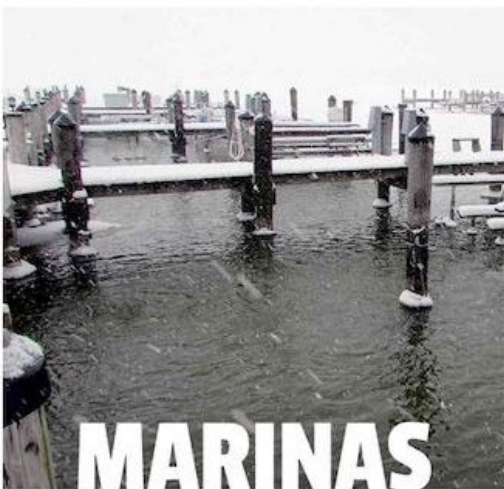
The [Scott Aerator Dock De Icer](#) is available as 115v and 230v in 3 power options:

- 1/2 Hp
- 3/4 Hp
- 1 Hp

They come in 3 different mounting options:

- Dock Mount
- Slinger (Mooring Ropes)
- Floating
- Free Standing Post

The Free Standing Post option allows you to place a post away from a dock and mount the de-icer similar to a dock mount. Scott Aerator De-Icers are backed by a 5-year Warranty. The 1Hp option runs at over 3,400 RPMs and can move up to 400 gallons of water per minute!



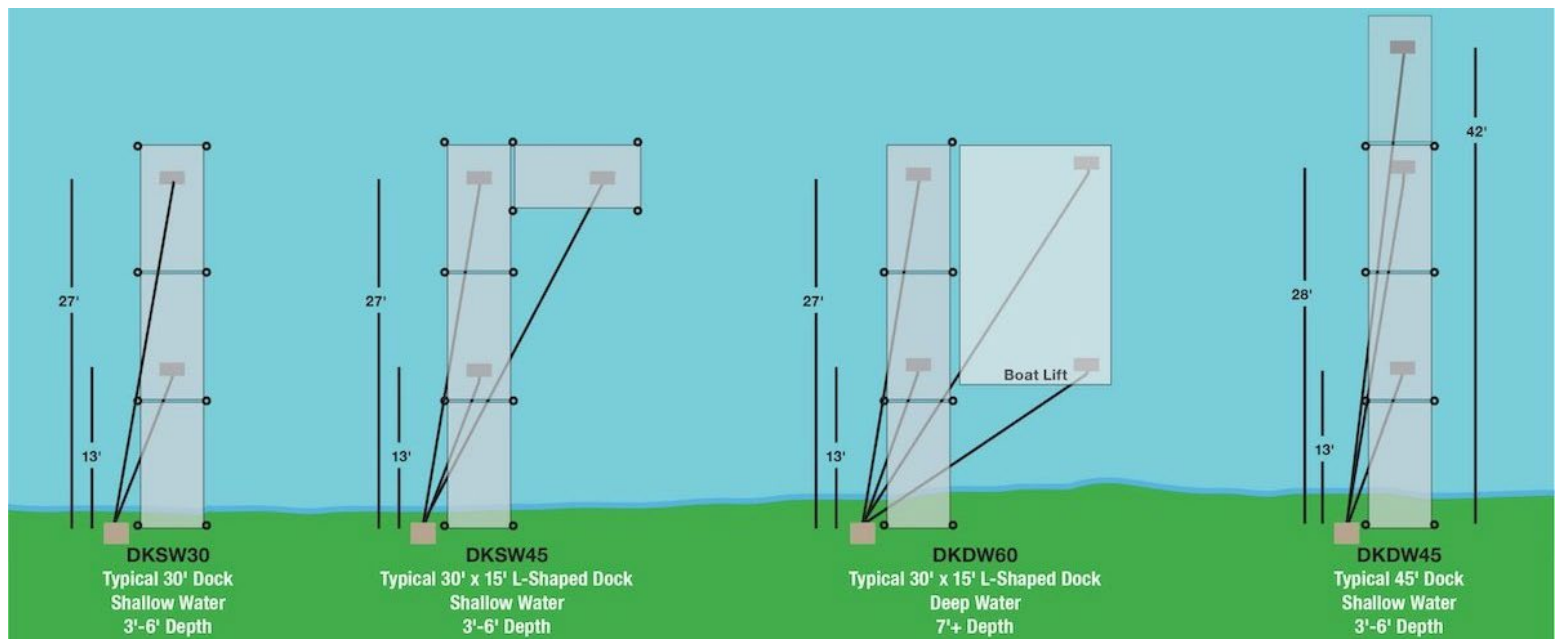
## EasyPro Air De-Icing Dock Bubbler System

The [EasyPro Air De-Icing Dock Bubbler System](#) is great for shallower water, which normally works well with docks on lakes. The smaller models work for up to 6ft of water with the biggest model, the DKDW60 DKDW100 effective in depths over 7ft deep and with dock lengths of up to 60 and 100 feet respectively.

The Easy Pro Air De-Icing Dock Bubbler System is available in 4 models:

- DKSW30
- DKSW45
- DKDW60
- DKDW100

This dock bubbler system uses 2-6 compressor with self-weighted air diffusers to create an air flow up to 6.5 cfm. 3/8" quick sink tubing allows for quick and simple installation. A weather-resistant cabinet enclosure provides protection from the weather and elements. The DKDW100 is effective in depths of up to 50 feet. The compressors feature a 2-year warranty, while the tubing and diffusers have a 5-year warranty.



## Making the Right Choice

Ice can, and often will pose a serious risk to your docks, watercraft, and the flora and fauna that live beneath the water. When it comes to choosing dock de-icers, your best bet is to go with one of the most well-loved brands, Power House, Kasco, Scott Aerator, and EasyPro.

If you'd like to know more about your dock de-icer, ice eater, diffused air de-icer options, [contact us](#) today. We would be happy to answer any questions and give you some more tips.



# WHY DO I NEED A DOCK DE-ICER?

Protect Your Docks and Boats From Expensive Damages and Time-Consuming Repairs.

## DAMAGE TO BOATS

When water freezes it expands against your boat. The water will still move underneath the ice and your hull will grind on the ice causing major damages and leaks.



## ICE JACKING

As ice expands it can pull dock pilings out of their footings. This can cause damage to your entire dock and the repairs are expensive. When water changes levels under the ice it can magnify the problem.



## CABLES BREAKING

If you are on a body of water that changes levels, either naturally or by man, you probably have cables connecting or anchoring your dock. These cables can snap in the ice, especially when water levels change quickly.



## WINTER KILL

When ice gets thick and sunlight can't get through the oxygen levels will quickly decrease. This causes fish and plant life to die and your water conditions to deteriorate.



## FLOATING ICE

Floating ice can be aggressively forced into your dock or boat by the wind or current. This can also cause major damages.

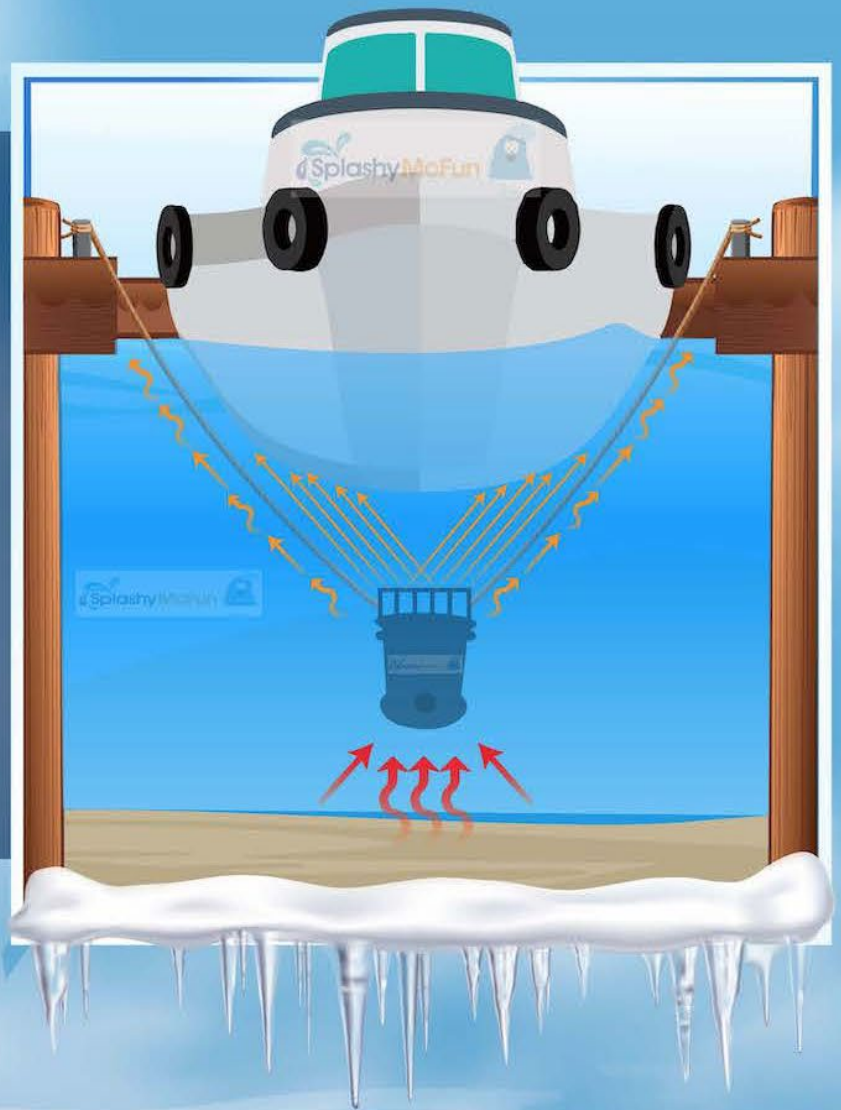






## HOW DOES A DOCK DE-ICER OR ICE EATER PROTECT AGAINST ICE DAMAGE?

Setting your de-icer up vertically will give you a full circle shaped opening. You may also use other mount styles to set it up more horizontally to create a longer oval or elliptical shape. In shallower waters a horizontal flow may be your best or only option.



## HOW DO I MOUNT A DOCK DE-ICER?

MOORING ROPE

DOCK MOUNT

## MOORING ROPE SUSPENSION

Vertical suspension creates a circular opening and is great in deeper waters.



## DOCK MOUNT

Conveniently attaches to your dock pole attachment at an angle. Some models offer an oscillator that will fan the de-icer 180 degrees.



## SHALLOW WATER

The stand is great for shallow water situations. This style is often used by duck hunters to open up ponds.



## FLOATING MOUNT

This model is ideal for changing water levels. It is also great in shallow waters. Horizontal mounting creates a longer oval shape.

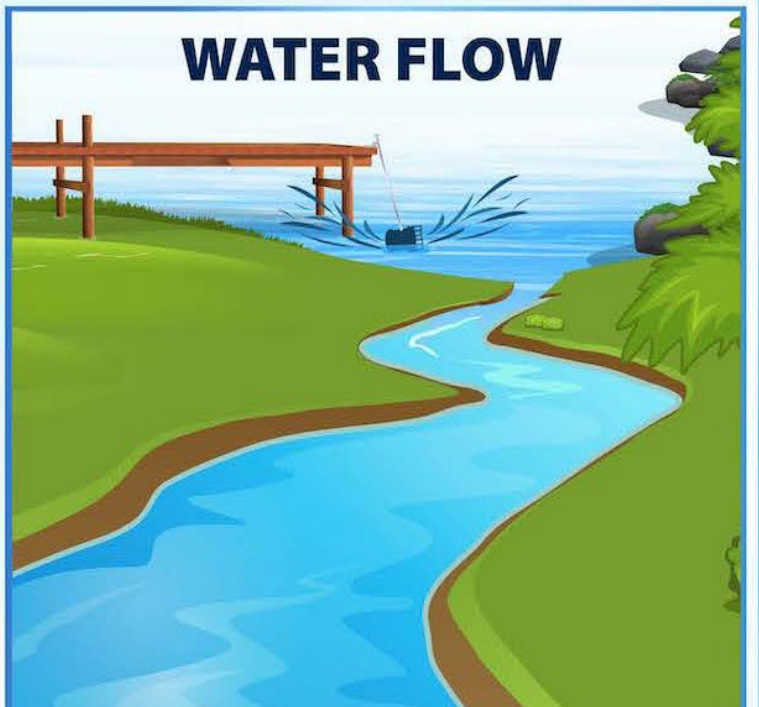


# SUMMERTIME DE-ICER USES

## MUCK & ALGAE REMOVAL



## WATER FLOW



# CONTACT INFORMATION

We want to help you find the best de-icer to protect you against ice damage.

**IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT US AT:**



[service@splashmcfun.com](mailto:service@splashmcfun.com)



(888)-897-7527

