

# The 7 Pitfalls of Oil Skimming

Solving Oil Removal  
Problems for Over  
Thirty Years

A guide to help you avoid the common mistakes that are made when purchasing an oil skimmer.

## 1) Undersizing Your Skimmer

A common misconception is that you can buy a smaller skimmer based on gallons-per-hour skimming capacity for a big job to save money. However, purchasing a small or mini unit instead of an industrial sized skimmer can be an ineffective method of oil skimming.

Oil skimmers should be selected by the size of the area that needs to be skimmed, not just by the amount of oil needing to be removed. Choosing an oil skimmer that has the capacity to remove at least 2 times the capacity needed by the application should be the deciding factor.

Oil skimmer capacities are based on optimum conditions and homogeneity of oil. Viscosity, temperature of the water, and other factors can affect the amount of oil picked up by an oil skimmer. It is impossible to accurately predict how fast your oil will be picked up. Therefore, as a rule of thumb, purchase an oil skimmer that is rated at least twice the capacity needed.

## 2) Improper Placement of Oil Skimmers

Planning is important! Before spending money on a concrete pad and mounting arrangements, check where the oil actually collects in your process. Oil skimmers should be located opposite from the inflow and the tail pulley should be submerged two inches below the surface of the liquid in order to be as effective as possible. Using a tank that does not allow enough time for the oil to rise and float will not permit successful oil skimming. Always make sure your tank gives enough residence time for the oil to float.

## 3) Paying for a Complicated Solution

Oil skimming usually beats ultra-filtration systems in many applications. More often than not, installing large, complicated systems to remedy oil problems will not provide ideal results. You can save costs by using a relatively inexpensive oil skimming system to handle the free-floating oil and then a smaller treatment system to handle the oil that has remained suspended in the wastewater.



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**Bottom line:** Oil skimming costs less, is more effective at removing oil from water, and is ecologically responsible. So, Keep It Simple!

### 4) Not Telling Your Consultant or Vendor Everything

Oil skimmer selection can be a very complex process. There are numerous factors that go into selecting the right oil skimmer for your particular application. If the oil skimmer vendor does not know what chemicals or heat you have in your application, the wrong oil skimmer and belt materials could be selected, and the job will not get done correctly.

It is important that you gather as much information about your application as possible when you're ready to consult a vendor. Describing every component of your process and all the contents of the tanks is crucial. Tell us everything!

**Consider:**

- Temperature of the water
- pH level
- Area size being skimmed
- Type of oil being skimmed
- Water level
- Any turbulence
- Electric requirements

These are all conversation points that your vendor should inquire about and you should have answers to. Remember: in order to make the most out of your oil skimmer, the right skimmer and belt material needs to be selected to work perfectly with your application!

### 5) Choosing the Wrong Oil Skimming Material

There are several things to consider when choosing a belt or tube material for your oil skimmer. Some plastics will not stand up to heat or strong chemicals. Certain metal belts will not skim coolants effectively. Smooth belts do not pick up floating emulsified oils. Specific plastic belts do not last in heated applications, while other types of plastic belts will.

This is yet another reason why it is so important to pick a reputable oil skimmer vendor and tell them all of the information about your application. They should have the knowledge and understanding that no two applications are alike and not all belts and skimmers are the same.

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Here are the common types of skimmers used in oil removal.

**Belt Skimmers** – Belt-type oil skimmers use an endless belt of corrosion resistant steel or synthetic medium, which is lowered into the tank or vessel to be skimmed. The belt passes through resilient wiper blades where the oil is removed from both sides of the medium.

**Disk Skimmers** – These oil skimmers rotate a disk shaped medium through the liquid. Oil is wiped off and discharged into a collection container in a manner similar to belt oil skimmers. It is important to consider reach, the portion of the disk that actually gets immersed, when looking at a disk oil skimmer. Less disk in the fluid means less oil removed. Obviously, fluctuating fluids can be a real problem for disk oil skimmers.

**Large Tube Skimmers** – Tube oil skimmers use a floating plastic hose that snakes out over the surface of the liquid and is then drawn back through the drive unit where oil is removed. This design requires a relatively large amount of surface area for proper operation. This oil skimmer can skim from very shallow tanks. As a rule, the removal capacity is lower than belt, drum or mop type oil skimmers.

**Mini Tube Skimmers** – Very similar to the large tube units, but use either a 3/16" or a 5/16" tube instead of 3/4". The pickup rate varies from 1 quart/hour to .5 gph depending on the diameter of the tube. These units are fairly compact, and can fit in tight spots. The better units will have the motor mounted underneath, to bring room required over the lip of the tank down to near zero. The 3/8" diameter tube is preferable as it has a 1 gph removal capacity and enough stiffness to not drag on the housing and prematurely wipe off oil when being drawn into the unit.

### 6) Lack of Maintenance and Basic Care

An oil skimmer will only remove oil if it is properly maintained. There are basic maintenance tasks that should be done regularly to keep your oil skimmer up to snuff. Are the wipers contacting the belt smoothly? Is the belt riding away from the sides of the pulley? Are the troughs and wipers clear of debris? It is imperative that proper care and maintenance is maintained if you want your skimmer to provide the best oil removal performance possible.

### 7) Buying from an Unknown Vendor Based on Price

Like most things in life, you get what you pay for. Buying from small, unheard of oil skimmer manufacturers will probably result in no customer support when maintenance issues pop up and little to no knowledge of how to resolve those issues. Furthermore, parts will need to be replaced over time, units might have to be changed or upgraded, or different belt materials need to be used. Disreputable vendors typically do not have a selection of materials or parts to choose from. Additionally, it is common for the smaller, unknown companies to go out of business after a few years and you'll end up having to replace your skimmer with a different brand when all you needed were new parts.

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Paying a cheap price up front might result in you paying more in the long run. It's best to invest in a quality skimmer that is from a reputable vendor from the start. Oil skimmers are simple in design, but you will still be better off with a skimmer that is manufactured with the highest quality. It will operate efficiently and consistently for a longer period of time. Removing oil from water is a necessary practice in most industrial applications. Spend your money wisely to get the job done right.

### Remember. . .

Selecting an oil skimmer can be a complex decision making process. There are various factors you have to consider about your application when choosing the right skimmer. Abanaki oil skimmers are durable and built to last, even in harsh applications. They have been proven in thousands of applications and are an environmental solution to unwanted oil in water. Abanaki sales reps have a vast knowledge on a wide variety of industrial applications. They are always available for phone calls, emails, or on-site consultations to help you find the right skimmer for your application.

**ABANAKI®** OIL SKIMMERS  
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## Oil Skimming FAQ

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1. *Because coolant is about 15 percent of my machining costs, I'm hoping oil skimming will extend the life of my coolant. I have ten machine tools connected by a centralized coolant system. The tank holds about 1200 gallons. Which is the best skimmer for my application?*

In your case the best solution is the Abanaki Tote-It. Although you don't need its portability, you do need its belt length of up to 10 feet—long enough to handle fluctuating coolant levels and dump into a 55 gal drum. The more costly alternative would be to buy 10 Mighty Minis, and mount one on each machine. The one caveat is that the coolant should be well circulated through the system, so the tramp oils don't get stuck at each machine.

2. *How exactly does an oil skimmer work? Do I have to place the skimmer directly where the oil is collecting?*

An oil skimmer is a device that uses a belt, tube, or disk placed directly into the product containing oil. The belt, tube, or disk attracts the oil by breaking the surface tension of the water and then runs back to the machine to be wiped clean. If your skimmer is sized right, it will be able to pull the free-floating oil from anywhere in the tank or pit. Oil skimmers should be purchased more by size than by the volume of oil to ensure you are able to skim from the whole surface area.

3. *I am in need of an oil skimmer for an application I have. With so many choices out there, how do I determine which is the best oil skimmer for my particular application?*

There are a few things to consider when choosing an oil skimmer for any application. The most important thing is to pick an oil skimmer that is suited for the size of the application and the correct belt type. The questions below will help narrow it down:

- What is the size of the tank or sump you wish to skim from?
- What is the type of oil you are looking to remove?
- What amount of oil do you need to remove?
- What is the point of access on the tank or sump?

From here you can either use our [oil skimmer selection guide](#) or call your Abanaki representative at 1-440-543-7400 to help point you in the right direction.



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**4. Is there a test that I can do to see if a skimmer will pick up my oil?**

Yes. The simplest way to [test](#) if your oils will be picked up by the skimmer is to stick a PVC pipe or steel rule in the water where the contaminated oil is located and pull it out. The oil that sticks to the pipe or rule indicates that an Abanaki oil skimmer will work in the application. Call **1-440-543-7400** to speak with one of our technical sales representatives to specify the proper oil skimmer for your particular application.

**5. I purchased a Mighty Mini with a steel belt for my CNC machine but the oil does not seem to be attracted to the belt. Why is this happening?**

Coolant sometimes has rust inhibitors in it, which can coat the steel belt and actually repel the oil. This can easily be fixed by switching to an Elastomer belt which is ideal for coolant applications!

**6. My belt is slipping on my Mighty Mini, how can I fix it?**

Check to make sure there are no obstructions on the belt as it passes through the wipers. Check to make sure that the tail pulley (bottom roller) turns freely and is free from obstruction. Sometimes the coolant/oil combination in the application can be extremely slippery, making the belt slip. Try adding a 1/2" spacer between the stabilizer bar spring and the mounting base plate to provide extra tension on the belt. The added resistance should keep the belt from slipping.

**7. How many parts per million (ppm) will the oil skimmer get my oil level down to?**

Abanaki oil skimmers have satisfied EPA requirements of leaving less than 5 ppm of oil in water. In addition, with an Abanaki Oil Concentrator, the oil skimmer will pick up less than 1% water with the removed product.

**8. My CNC machine only has a thin slit on the coolant tank and that's the only access to the oil on my coolant. How can I remove this oil?**

Sometimes there will be limited options on how to skim oil off your coolant. In cases where you can only reach down through a slit, then disk skimmers may be your best option. These units work with the same principle as the belt skimmers. Instead of a belt reaching down, there is a 1/2" disk that rotates into the coolant and skims off the oil to be removed with wipers.



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**9. Is there too much water in your oil skimmers?**

Sometimes there are situations where your [oil skimmer](#) will collect water. If you are running your skimmer 24/7 and the tank or pit runs out of oil, your skimmer will pick up whatever is remaining in the tank, and most of the time that will be water or coolant. There is a way to prevent this and that is by utilizing an oil water separator(concentrator) in conjunction with your oil skimmer. The [oil water concentrator](#) attaches to the skimmer and helps in further separating the water/coolant from your oil. This unit is placed on the back of the skimmer. The skimmed material is drained into the concentrator and then it separates the water from oil. You can then drain the water back into the tank or well through one hose, and the oil drains from another.



**10. I have numerous totes that only need oil skimmed out every once in a while. Do you have oil skimmer that easily movable?**

A good fit for this application usually ends up being our Tote-It belt oil skimmer. At about 40 pounds, this unit is easy to carry from one tote to the next. This belt oil skimmer comes in different belt widths and lengths to help customize how much oil will need removed and the tank dimensions. This level of mobility can eliminate the need for having one belt oil skimmer for every tote or trying to carry around a more cumbersome unit to each tank.

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