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I have a rather large free form pool, 130 per. ft. with deep end and spa. I estimate it to be in the 40,000 gal. range. It has a water fall on it as well. The water circulates through the spa when not on and over a spillway that drops 4' into the pools deep end. How long will it take to heat the complete pool? TIA Welcome to TFP!!! Well, we would need to
know the starting and target temperatures to even try to estimate it. - - - Updated - - - 40k gallons is 332k pounds of water. You will get a little over 320k BTUs per hour from your waterfall), you would get about 1 degree per hour. So,
with the losses, expect to get less than that. A cover would help retain a lot of heat. Plus loss to ambient air temperature and amount of sun received will have an effect. A large pool with no thermal cover will loss to ambient air temperature and amount of sun received will have an effect.
add the following information to your signature The size of your pool in gallons If you know, please tell us the brand and model of the filter. If you know, please tell us the brand and model of the pump,
and mention if is it a two speed or variable speed pump. Date of pool build/install, particularly important if less then a year old. What kind/model of water test kit you are using Other significant accessories or options, such as a spa, SWG, or cleaner Welcome!! I have a MasterTemp 400HD with a 19,000 gallon vinyl inground pool. I typically get 2
degrees per hour. 1-2 degrees per hour is correct. Of course there can be outside factors that could lower this value as well. When heating a pool it is best practice to keep it covered when not in use. Preface- The Pentair Mastertemp 400 is great for large pools, night time dips and chillier climes. No one likes paying for repeat gas so thankfully this
heater is highly efficient, more so than smaller units. It's also easy to operate and reliable. But does it cost too much to run? If you have been searching through all the pool heater reviews on Google trying to find a low cost solution for heating your pool, then you've come to the right place. What's the point in having a beautiful pool that you can't
make use of because you risk hypothermia just dipping your toe in it? Unless, it's just a picturesque show-off garden feature. After price 2 things are crucial, the time it takes to work, and the running costs. This review answers exactly that. If you have a large pool and aren't fortunate enough to live in one of the hotter locales like The OC, Florida or
Arizona, then gas pool heaters work best. Heat pumps are quite sore on electricity and they need a lot of warm air to transfer through to your pool. So in colder states gas is the best way to go. Solar is just too ineffective. This article introduces you to the Pentair MasterTemp 400 one of the most powerful and highly efficient natural gas heaters
currently on the market. What We like Works EXTREMELY fastSmall, compact heaterEco-friendly - Low NOX emissionsAward winning top dial pad to suit your plumbing (to face either left or right)Simple set and forget heating controls via digital dialpadAuto shut off to
prevent overheating Vast array of safety features and sensors including manual gas shut off for services Comprehensive clear to understand manual year warranty (once product is registered) Suitable for saltwater pools + all pool types, bromine, hard water, high flow pressure Natural gas or propane models CHECK YOUR STATE HERE FOR
RUNNING COSTS Here are some average prices to compare against. If you live in Phoenix Az you want your water temp to consistently stay at 78° can expect to pay approx $1384 in gas costs for the entire swimming season. but here's the biggie- if you use a pool cover you can end up paying a meagre $96. ASTONISHING. If you want the water
10/31\$320\$424\$592Los Angeles5/1-10/31\$1864\$2376\$2904w/ cover5/1-10/31\$1864\$2376\$2904w/ cover5/1-9/30\$1621\$2072\$2384w/ cover5/1-9/30\$1621\$2072\$2384w/ cover5/1-9/30\$216\$296\$384Denver5/1-9/30\$216\$296\$384Denver5/1-9/30\$216\$296\$384Denver5/1-9/30\$216\$296\$384Denver5/1-9/30\$216\$296\$384Denver5/1-9/30\$216\$296\$384Denver5/1-9/30\$216\$296\$396Por Cover5/1-9/30\$216\$296\$396Por Cover5/1-9/30\$216\$296Por Cover5/1-9/30\$216\$296Por Cover5/1-9/30\$216\$296Por Cover5/1-9/30\$216\$296Por Cover5/1-9/30\$216\$296Por Cover5/1-9/30\$216Por Cov
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heated with an 80% efficient natural gas heater at $.80 per therm and uncovered for 8 hours per day. If you're replacing a gas pool heater, you can use the following formula to determine your annual cost savings with a higher efficiency gas pool heater model: Current Annual Cost x [1 - (Current Efficiency)] energy.gov Other Factors
Influencing Running Costs Different States naturally have different running costs as the cost of natural gas for instance and the climate varies. It also depends on high you like the temperature of your pool to be, and whether you leave a pool cover on
in between swimming times. One thing is clear though this is a highly efficient heater and you will wait less time for it to heat up large pools due to the 400 000 btu, and that goes without saying for hot tubs and smaller pools under 20,000 gallons. If your climate is a bit too northern for your liking you can certainly extend your swimming season for up
to 8 more weeks with a powerful gas heater. A single BTU (British Thermal Unit) can raise the temperature of 1lb of water by 1 degree which means that the more BTUs a pool heater can produce, the quicker the water will heat up in your swimming pool. Why Is The Pentair MasterTemp 400 Pool Heater So Efficient? It has a 400k BTU rating. That is
currently one of the most powerful residential heater ratings. The higher the rating the quicker your pool is heated up. With this 400 000 btu rated heater you can expect on average a 2 degrees F per hour rise in the temperature of your State just
above for average running costs. But before getting into that, high performance doesn't mean high running coasts. Pentair have just won the EPA Energy Star award for the third year running. They won this again for their range of high performance energy star rated products that make up the majority of their pool heater sales. If you care about the
environment these low emission heaters from Pentair are not only recognized but officially awarded by a government body. If you have a spa and want it to be boiling hot in as quick a time as possible the Mastertemp 400 will do the job better than anything else. For small pools you can expect to wait less for it to heat up. All in all it's a win-win. The
MasterTemp series uses a coiled heat exchanger with a combustion chamber as opposed to a traditional heat exchanger with burner. This is what makes it one of most efficient pool heaters as most of the heat actually gets transferred to your pool. If you want your pool to be heated up in less time and maintained at this temperature whilst using less
gas, then a more powerful heat exchanger like this works best. The heat exchanger on the HD and ASME models is made from cupro nickel is also proven to last longer than copper only exchangers as it withstands chemical and hard water corrosion in spas and
pool. Heat exchangers like this are more durable and this new metal combination will prolong its life. The standard model has a copper heat exchanger and costs less than the HD and ASME models. So you can make a saving if you are definitely sure you won't be using salt or hard water and can keep your pools chemistry under control. The HD and
ASME models have upgraded components to add extra durability and cope with high flow water pressure. How Long Will It Take To Heat Up A Pool? With a Pentair 400k you are probably going to get an approximate 2 degree per hour temperature rise in a medium sized pool. When starting your swimming season it will take about 2 days to heat a full
pool if it's cold. If you are starting with a water temperature of 80 degrees in a 30,000 gallon pool on a sunny day, you will get to 90 degrees in approximately 8 hours. - For smaller pools the time will be significantly faster. In a nutshell the MasterTemp will heat up any size pool. If you have a pool with a spa it will also heat up both. If your pool is
small it will heat up very quickly. Larger pools will naturally need more time. Gas heaters will heat up your pool up to 7 times faster than a heat pumps also need the outside temperature to be about 104°F to work. If not they rely on their electric elements (heating coils) which burn electric at a much higher cost than gas. In warmer states
gas heaters can cost more than heat pumps to work. Heat pumps like the Hayward HP21404T are initially more expensive. But if the temperature drops below 50°F they will not work, and will cost more than gas. It is definitely a nice luxury to have both, you can use the heat pump in the warmer months and switch to gas when it gets colder. Here is
the official heat up stats offered by Pentair for their ASME heater models; Will the Pentair 400 be good for a spa or small pool that needs heated this will warm it up quicker than anything else on the market. Once heated it will be easily maintained without
wasting exorbitant amounts or natural gas or propane. What Size of Heater Do I Really Need? If you want to wait longer and burn more gas in the process then a lower powered model may be more affordable up front, but it will cost more on the back end as you
will need to use more gas. For large pools it will simply be too inefficient. For small pools the Mastertemp is a dream because it gets the job done quicker and maintains the results without draining your gas supply. If your pool is on the large side- 40k gallons and up, then a 400 btu rated heater is an absolute must. Hayward also have the universal H-
Series which boasts btu ratings of 500k at the top end ii)do you need it for a pool or Jacuzzi, or both? If you are powering both a pool and a Jacuzzi you will need a heater with a higher btu rating. iii) are you using saltwater or hard water? Cupro nickel (copper nickel plated heat exchanger) as you know prevents corrosion. If you use a pool heater
without cupro nickel in saltwater or hard water you will void it's warranty. Cupro Nickel (which the mastertemp has) is also proven to last longer than copper only exchangers and prevents chemical and hard water corrosion in spas and proven to last longer than copper only exchangers and prevents chemical and hard water corrosion in spas and proven to last longer than copper only exchangers and prevents chemical and hard water corrosion in spas and proven to last longer than copper only exchangers and prevents chemical and hard water corrosion in spas and proven to last longer than copper only exchangers and prevents chemical and hard water corrosion in spas and proven to last longer than copper only exchangers and prevents chemical and hard water corrosion in spas and proven to last longer than copper only exchangers and prevents chemical and hard water corrosion in spas and proven to last longer than copper only exchangers and prevents chemical and hard water corrosion in spas and proven to last longer than copper only exchange the proven to last longer than copper only exchange the proven to last longer than copper only exchange the proven to last longer than copper only exchange the proven to last longer than copper only exchange the proven to last longer than copper only exchange the proven to last longer than copper only exchange the proven the pro
designed for heating pools and spas that use chlorine, bromine or salt. Make no mistake, this is one of the most powerful residential heaters you can buy. If like me you live in a colder state, you will be able to start your swimming season sooner and stretch it out much further. Swimming early in the mornings and late in the evenings will no longer be
a problem. Calculating The Precise Size of Heater You Need Getting the right size of heater for your pool can be a complicated business. Heater manufactures calculate the btu rating based on the dimensions of your pool and the desired temperature rise. But there are other factors that can determine the heater size you may not have thought about
which include humidity levels (low), night time temperatures (cold), wind speeds and exposure. If any of these are a factor you are going to need a larger heater. If you want to get super technical about wind speed you can multiply the Pool Area X
Temperature Rise X 12. This equates to about a 1-1/4 of temp rise per hour with an average wind speed on the pool surface of approx 3.5 mile per hour. How is this formula worked out? Choose your optimum pool temperature Calculate the average temperature for the coldest month you will use the pool Subtract this from the desired pool
temperature – this determines how much you need to raise Measure the dimensions of your pools surface area in square feet The formula will calculate the size of heater btu rating (per hour) that you need to get the job done: Pool Area X Temperature Rise X 12. If you want a 1.5°F rise multiply by 1.5, for a 2°F multiply by 2 and so on. Will It
Withstand Bad Weather? This sure is one tough cookie. The exterior handles are rust proof, and the outer shell is a rust proof composite plastic, but it would be best to protect the gas orifices from dust and bugs. Anyone who's owned a heater
before knows that spider's webs can clog up the ignitors and stop gas flowing which can leave you scratching your head as to why the heater won't start. It's either call the professionals or break out the toolbox and start investigating. In the winter you should always drain water from the heater, your pool pump, filter and PVC pipes, to avoid ice from
setting in and destroying your equipment. Remember as water freezes in cold conditions it expands and can cause leaks and broken pipes. Generally this type of damage is not covered by warranty. Are Pentair Pool Heaters To Be Trusted? Pentair Aquatic systems are giants in the swimming pool, spa and aquatic equipment industry. You may have
heard or possibly even own the Pentair Intelliflo 011018 pool pump. It is legendary. They also own Sta-Rite products includes heaters, automated
vacuums, lighting, pumps and filters. You can even control a range of their products via an app on your Smartphone or compatible device. Pentair heaters, and almost every other big name brand come from bad installation and saltwater or chlorine
contamination due to excessive levels. Ensure you install a back flow valve - read the section "Ensuring your pool heaters longevity". Installation Installation is fairly straightforward but it is recommended you get a qualified engineer, so if anything does go wrong your warranty is protected. Connect the power, connect the gas, and then the water
(schedule 40 PVC) pipes. Everything is very compact and neatly laid out. There are two water headers to attach to your plumbing. The pipes are 2". But if you have older plumbing store if installing it yourself. For outdoor installation the
unit should not be stored close to windows, doors and air vents. See below diagram. Plumbing Diagram Here's where it starts to look a little more complicated: I definitely won't be plumbing this myself, but if you are an engineer it might be right up our street. Indoor Installation You CAN'T use this or any other pool heater indoors without a proper
ventilation system which requires a specified vent pipe. It's dangerous to use in enclosed areas like garages or basements without a vent system. Stick to the recommended ventilation clearings in the manual. Gas Installation Note the manual says only to be connected by qualified servicemen. Here is the gas pipe sizing for all Pentair heaters;
Installation has to be done right. If you don't understand this diagram, get a service engineer. Wrong installation can be fatal, and snagged or ill fitted pipes will cause gas leaks. You need to make sure your gas line capacity can handle the 400. If your gas meter cannot handle 400 btu then the heater will not run correctly. You need the right size of
line and meter or the heater may not start, or can fail after initial start up. If the heater detects it is not getting enough gas it can auto shut down. You may also find that you have enough high pressure (2psi) coming from the meter, but the line from your street to the meter might need to be upgraded (or the meter could need upgrading to handle the
extra gas flow pressure). If you don't understand this check with a gas service engineer/plumber. Check the diagram above 400,000 Btu needs at least a 1-2 inch pipe for low pressure. There is the option of using a 2 stage process (with 1" pipe and a regulator), you would need to check this with a gas supplier - In the words of Ice Cube, check yo'self
before you wreck yo'self. (Obviously replace yo'self with gas line "....a young person told me to say that....) Can You Do-It-Yourself? Now for you have-a-go heroes, plumbers or for someone who has done this before, it is not all that complicated. Run a gas line (3/4 inch if less than 10ft but you can go up to 2 inch if running it over 400ft) to the
installation site, which should be beside your pool filter. Then run the return line from the filter over to the input of your heater. Finally the output from the pool at the return fitting. Simples. The plumbing is on one side of the machine and the electrical and gas outlets are on the direct opposite side, just under the
fan. If you understand all the above, can work through the manual, and don't mind voiding the warranty should something go wrong due to poor installation, go ahead. No pressure. Meet the Digital Dial Pad The dial pad is simple up and down
thermostat buttons. It will even tell you when it needs a service as it has a multi function temperature controller which shows if the headers off or replace anything else. Just rotate the
top and that sorts out everything. Mastertemp 400 Safety Features Apart from the built in temperature controller, a built in water pressure switch combined with a stack flue sensor monitors the pump to prevent it overheating. The water supply will automatically be shut off if the water temperature exceeds factory set limits. The full range of
MasterTemp heaters are fitted with a direct ignition HSI (hot-surface ignition) device, which replaces the standing pilot light in standard burner systems. Pentair heaters are specifically designed for heating pools and spas that use chlorine, bromine or salt. Saltwater Tip- Make sure you install the salt cell after the installation of the heater, to prevent
strain and that can only lead to a reduced life span. Electrical Rating: 60 Hz120 / 240 Volts AC, single phase. Recommended Actions (probably by an engineer) If the heater will be placed below the surface of your pool or spa, ensure valves are used in the circulation piping system so the heater is isolated from the pool or spa. To prevent backsiphoning
it is recommended that you use check valves. One of the main reasons backsiphoning will happen is once the pump stops a pressure-suction differential can occur. You should not sanitize the pool with chlorine tablets or place sticks into the skimmer(s). If you do this when the pump is switched off, a high concentration of chlorine can enter the heater,
quality standards. A qualified pool heating technician is advised to install the unit, especially as gas leaks can be silent and deadly. Some states require technicians to be licensed. Make sure you install a carbon monoxide tester close to the machine and a temperature gauge is recommended to check the pool is not too hot. On hot days the pool can
heat up more than expected. Never use propane with a natural gas heater or vice versa. A licensed Pentair technician has to carry out a conversion if you want to switch fuel types. Because naturally if you blow yourself and the whole neighborhood up after tinkering with your warranty will of course be voided. Conversion is not that pricey
should you wish to switch from natural gas to propane or vice versa. Can cost as low as 40-60 bucks and generally requires a nozzle change with a few slight modifications. Hot Tub Health Risks Everyone likes to be in a boiling hot spa, and many people I'm sure like to exceed safety regulations and push the limits above 40 degrees. Manufactures
recommended no higher than 38 degrees for healthy adults in hot tubs and extreme caution is needed where children are considered. For pregnant mothers no higher than 38 degrees in the first 3 months of pregnancy is advised as this can lead to foetal damage. But to be on the safe side I wouldn't go anywhere near this during the first trimester, in
fact as far as I would go is dipping in up to the knees. Why take the risk? Time To Get Techie Who wants to know how this pool heater works? If not skip onto the mixer via a built in blower which directs it to the burner's flame
holder. The flame holder is surrounded by a sealed heat exchanger which discharges exhaust gases out through the flue. Water pipes which flows directly into the manifold/header at the side of the heat exchanger with the standard supplied 2" PVC slip unions. No heat sinks are needed as the outer manifold stays cool.
The water flow through the heat exchanger is regulated by a thermal regular and internal bypass which ensures the correct outlet temperature. The water temperature is set on the main control board, and operated via the dial pad. Happy now? No? Here's some more juicy engineering specs to wet your appetite. The heater is controlled by an
A PS (pressure switch) monitors if the pump is running or not. A HLS (high limit switch) opens once the temperature climbs beyond 60 degrees
(1400F). A SFS (stack flue sensor) auto shuts down the heater if the flue gas temperature is detected to be above 249 degrees (4800F). Once there is sufficient air flow the AFS closes the circuit to the HSI are energized. In 20 seconds time the
running water is circulated through the pump and passes through a pool filter and that water is fed back into the heat exchanger (inside the energy efficient combustion chamber) heats up the water and that water is fed back into the pump and passes through the pump and passes throu
heater auto shuts down and once the water sensor detects a dip in the temperature it kicks back in again. This makes it extremely efficient. Who Needs This Heater? Anyone who lives in a colder state or just plain likes the water to be hot all the time. This pool heater is top of the range and as such might be overkill for a small pool, but bear in mind
once it gets going and the temperature is reached the gas flow will be minimal and the heat exchanger will only kick in once the water temperature drops. If you want the option of using your pool for a few hours per day, or only at the weekends a gas heater is the way to go. If you aren't using the pool constantly it is more effective than any other
heating source. For constant use, 7 days a week heating a pool with a gas heater will be more expensive. The good thing about gas heaters is that they work well in any type of climate. They are not limited by air temperature and will work on cold days. They also work fast and are great for unplanned off the cusp hot tub dips and pool swims. Noise
Levels The 400 is touted by Pentair to be a very quiet machine so if you have sunbathers chillaxing by the pool you won't encroach on their serenity. Or will you? Official stats from Pentair says it runs at 60db. Depending on how quiet you like your "quiet" time then this may be an issue. If you have it a good distance from your pool you may not notice
it as much, but to totally minimize the noise you'd need to put it inside a brick enclosure. How Long Will It Last? Most of the equipment. If yours is installed properly you can expect it to last for 10-15 years and more. If you don't maintain or regularly
check your water chemistry or drain the system in the winter months, you can be looking at a 3-5 year life span. Not a lot for a product priced around $2k. Explanation Of The Different Pentair Mastertemp 400k has a rating of 400,000 BTUs. This is the same basically as 3-4 furnaces in a standard sized home which
are generally kitted out with furnaces rated at between 100,000-150,000 BTUs. The HD (Heavy Duty) and ASME models ratings have upgraded components to prevent corrosion. The HD (Heavy Duty) model has a CU (cupro-nickel) heat exchanger to specifically cope with saltwater and is more capable of withstanding hard and high flow water.
Cupro-nickel is used extensively in marine environments, where corrosion is simply just not an option. The ASME model exceeds the recommendations advised by the American Society Of Mechanical Engineers. It is similar to the AHRI (Air Condition Heating & Refrigeration Institute) accreditation other manufactures use. Natural Gas Or Propane?
These models take Natural Gas: 460734 - 300k BTU/HR (HD) - cupro-nickel heat exchanger for low PH water, heavy use, saltwater, high flow 460775 - 400K BTU/HR (ASME) - beefed up components, such as: thicker CU heat exchanger and
metal headers. 461021 - 400K BTU/HR (HD ASME) - bronze headers and cupro nickel heat exchanger Two of the 400K BTU/HR STD (Standard Model) 460776 - 400K BTU/HR (ASME) Size & Weight Most of the 400 series weigh 120-130 pounds and the unit measures
approx. 30 X 25 X 36 inches. Due to its small size and rotating top panel installation is pretty straightforward and it can be neatly tucked away without being a major eyesore. Ensuring Your Pool Heaters Longevity Many people have vented anger against even the premier pool heater brands like Pentair & Hayward when their heat exchangers have
failed. They have cited adamantly that their PH levels were ok and checked weekly. But as most pool industry installation engineers will testify rarely will this in it - if you have a chlorinator beside your heater it should only be parked on the
outlet side of the heater and you should have a back flow prevention device or you will risk trapped highly concentrated chlorine (very low PH levels) feeding back into your heater. Water levels need to be kept under control. If your PH levels are very low your water has the corrosive properties of acid. This will eat through your heat exchanger and
that part alone can cost $500 if you can source it. Not to mention the damage cause to individuals and your pool, the plaster, vinyl or lighting systems... How do you keep your PH levels under control? It's worth noting that lower PH will do more damage to a heater than higher PH will. Lower PH effectively creates an acid bath and not only can this
cause serious damage to your skin, eyes, organs and general health, but it will also strip plaster, tiles and damage pool lighting. And it will eat up the insides of your Pentair Mastertemp 400 and any other heater on the market if left too long. After rainfall your pools PH levels can swiftly bounce up or down. Though generally depending on what type of
pool surface you have * if alkalinity is within the ranges of 90-120, PH should not dramatically bounce. It is essential that your water levels are constantly kept in balance and you keep your pool hygenic. Stabilizer and alkalinity has to be placed inline and PH has to be checked daily until levels stay set. PH must be kept within 7.4-7.6 and chlorine has to be placed inline and PH has to be placed inline and PH has to be checked daily until levels are constantly kept in balance and you keep your pool hygenic. Stabilizer and alkalinity has to be placed inline and PH has to be checked daily until levels are constantly kept in balance and you keep your pool hygenic.
to be over 1.5 as the stabilizer and alkaline is being set. This can take 1 or 2 weeks of testing and tweaking, and after the ALK is set, PH should generally stay in place during WEEKLY TESTS. *For salt pools with plaster/peb-tec you ought to test PH TWICE a week, and you may find you have to lower it with acid). *Fiberglass pools that don't have a
salt system usually need PH to be raised up weekly, and having some soda ash handy will help. What Water Flow Rate Do I Need To Have For the MasterTemp 400? You need at least 40 GPM. If you don't have the required flow the heater may not start and can sit idle if the flow circulation can keep up. If your water rate is higher than 120 GPM a
manual bypass valve should be installed and adjusted to an acceptable flow rate. Can It Be Installed Above Or Below Pool Level? Yes but the water pressure switch may have to be adjusted. Only recommended to be done by a licensed pool engineer or someone who really knows what they are doing. What Pentair Could Improve Upon Seems to be
some confusion as whether the more expensive ASME models are needed by pool owners. They are made with a thicker Cupro-nickel heat exchanger and metal headers. But in reality if you keep your pool chemistry at acceptable levels you won't need the ASME model. But if you live close to the Ocean you may want to play on the safe side. It also
begs the question for the price why are not all their models given the ASME gold standard treatment? It does get a bit complicated that there is also a HD (Heavy Duty) model and one that withstands corrosion to a better level. But why not make all the
models ASME standard and possibly Pentair could introduce a HD model thus streamlining the whole process and making life a lot simpler for buyers. There are enough choice options already from heater size (btu) to natural gas and propane. It's a big investment, your area has to be cold or you really have to like warm water or stretching your
swimming season to buy this. Make sure you will make use of it before purchasing. Recurring gas costs are an issue as is electricity with a heat pump, although this one is out of consumers hands. Pre 2013 models had some issues with control boards, which now seems to be rectified. Just make sure to register your warranty. Buying Options +
Warranty Pentair don't sell direct to the public and prices can fluctuate wildly at retailers. We've seen as much as a $500 difference on the same model at competing stores. A 2 year extended warranty is offered on all MasterTemp heaters once you register the product. For larger pools the Pentair Mastertemp 400 heater will get the job done better
than just about anything else. If you like to spontaneously jump into the hot tub during the day or night without waiting around for hours these 400k heaters are just the trick. Gas heaters are ideal for quickly heating up pool or spa water and maintaining the desired temperature no matter what the weather is like outside. Fancy a dip in the tub on a
freezing cold night in winter? Fire up the Pentair and off you go. You won't do this with a solar pool heater or a heat pump. Used it in conjunction with a pool cover your gas bills will be SIGNIFICANTLY even ASTRONOMICALLY lower. For pools we would recommended it's at least 30K gallon before ordering one of these. Unless you have very little
patience or believe big is better when it comes to pool temperature. Because this is as close to a commercial pool setting as you are going to get. If you are going to pick between one of the MasterTemp models, it makes more sense to go with one of the HD (Heavy Duty) or ASME models. It costs a few hundred more, but heaters aren't cheap anyway
and you'll get more from it in the long run. If this heater doesn't quite float your boat check out this article on the complete Hayward H Series. By entering your pool's volume, current water temperature, and heater specifications, this calculator provides an accurate heating time in hours. Heating a pool can be a time-consuming
and energy-intensive process. Knowing exactly how long it will take to heat your pool is essential for efficient planning, managing energy costs, and ensuring your pool is ready for use. Our Pool Heating Time Calculator simplifies this process, giving you an accurate estimate based on key parameters like your pool's size, heater power, and desired
temperature. Why Use a Pool Heating Time Calculator? Manually calculator? Manually calculator efficiency. The Pool Heating Time Calculator automates this process, ensuring accurate and reliable results. With this tool, you
can:Determine how long it will take to heat your pool.Optimize energy usage and reduce costs.Plan pool activities based on heating time.How Does the Pool Heating Time Calculator Work?The calculator works by determining the energy required to raise the pool's water temperature and dividing it by the heater's power. It factors in heater efficiency
to give a realistic estimate. Formula to Calculate Energy Required (BTUs)] = \text{Pool Volume (gallons)} \times 8.33 \times (\text{Desired Temp} - \text{Current Temp)\text{Current Temp}} \text{Current Temp} \text{Current Temp} \text{Energy Required (BTUs)} = \text{Pool Volume (gallons)} \text{Energy Required Temp} \text{Desired Temp} \text{Current Temp} \text{Energy Required (BTUs)} = \text{Energy Required (BTUs)} \text{E
Temp}) Energy Required (BTUs)=Pool Volume (gallons) × 8.33 × (Desired Temp—Current Temp) Pool Volume: The total amount of water in the pool, measured in gallons. 8.33: The weight of 1 gallon of water in pounds. Temperature Difference: The difference between the desired and current temperatures in °F. Formula to Calculate Heating TimeOnce
the energy required is determined, the heating time (bours) = \frac{\text{Heating Time (hours)}} {\text{Heater Power (BTUs/hour)}} \times \text{Heater Efficiency\text{Heater Efficiency}}.
Efficiency}} Heating Time (hours)=Heater Power (BTUs/hour)×Heater Efficiency of the heater, typically 80%-90% (0.8-0.9). Example CalculationLet's calculate how long it will take to heat a pool under the
following conditions: Pool Volume: 15,000 gallons. Current Temperature: 60^{\circ}F. Desired Temperature: 80^{\circ}F. Heater Power: 400,000 BTUs/hour. Heater Fificiency: 90\% (0.9). Step 1: Calculate Energy Required (BTUs) = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 60) \text{Energy Required (BTUs)} = 15,000 × 8.33 × (80 – 
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Calculate Heating Time (hours) = 2,499,000400,000 \times 0.9 [Heating Time (hours) = 2,499,00040,000 \times 0.9 [H
Higher BTUs/hour result in faster heating. Heater Efficiency: A more efficient heater reduces heating time and energy costs. FAQWhat is the typical BTU/hour output range for residential pool heater power (BTUs/hour) varies depending on the type and size of the pool heater reduces heating. Here are the general ranges for different types of pool heater power (BTUs/hour) varies depending on the type and size of the pool heater. Here are the general ranges for different types of pool heater power (BTUs/hour) varies depending on the type and size of the pool heater.
heaters:Gas Pool HeatersResidential Pools: Typically range between 150,000 BTUs/hour. Electric Heat Pumps usually have a power rating of 50,000-140,000 BTUs/hour. They are more
energy-efficient than gas heaters but heat slower, especially in colder. How long does it take to heat a pool? This post will explain the factors that influence heating time, how long it takes to heat an average-sized pool by 10 degrees, and guide you on achieving that perfect swimming temperature more efficiently. Factors such as the initial state of the
water, type of heating system used, local climate, pool surroundings, pool covers, and size and depth of the pool can affect heating time. Heat pumps typically take between 24 and 72 hours to raise the temperature of your pool by approximately
2.5° to 5.5° C per day, making your pool up to 8-12 degrees warmer than unheated pools on average. Several factors can impact the time it takes to heat a pool, including the initial state of the water, the type of heating system used, the local climate, pool surroundings, pool covers, and the size and depth of the pool. The initial state of your pool water
plays a significant role in determining how long it will take to heat. If you're starting with cooler water, say after winter or during the colder months, you'll need more energy and time to reach the desired temperature. For instance, heating an average-sized pool by 10 degrees usually takes approximately six hours using a standard 300 BTU heater.
On a similar note, refilling your pool may require additional heating time due to the cold tap water used for refill. Hence, many pool owners prefer maintaining their pools at a comfortable temperature even when not in regular use. This strategy helps minimize heating times for those spontaneous dip moments and unplanned pool parties. The heating
system is an essential aspect when planning to heat a pool. This can be based on heat pumps, solar, or gas. Heating SystemDescriptionProsConsHeat PumpA heat pump uses electricity to transferred to the water. It can take approximately 24
to 72 hours to heat a pool by 20°F. Heat pumps are cost-effective and eco-friendly. Some users leave them on continuously for consistent heating. Regardless of the outside temperature, gas heaters can quickly heat the pool water. The number of panels required depends on the pool's size and eco-friendly.
location. Solar heaters use a renewable energy source and can significantly reduce heating costs over time. They depend on sunshine for operational efficiency. In regions with less sunlight, they may not be as effective. GasGas heaters use propane or natural gas to heat the pool water. Gas heaters can quickly heat the pool water, regardless of the
outside temperature. They are not as energy-efficient as heat pumps or solar heaters and can lead to higher utility bills. They also require a steady supply of propane or natural gas. Choosing the best heating system depends on your budget, local climate, and the desired pool temperature. Your local climate plays a significant role in determining how
long it takes to heat your pool. The task isn't too daunting in warmer regions as the sun contributes significantly to heating the water. However, you're looking at increased heat loss for cooler climates with lower temperatures and high wind speeds. This means your pool heater needs to work harder and longer, increasing energy use and,
consequently, your energy bill. This is where having an efficient heating system comes into play; solar systems or gas heaters might be best if you live in such areas. It's essential to consider average air temperature and weather conditions when planning for pool heating time! The surroundings of your pool can have a significant impact on its heating
time. If your pool is surrounded by trees or buildings that block out the sun, it may take longer to heat up. On the other hand, if your pool is in an open area with direct sunlight, it will warm up more quickly. Wind exposure can also affect how long your pool is in an open area with direct sunlight, it will warm up more quickly. Wind exposure can also affect how long your pool is in an open area with direct sunlight, it will warm up more quickly. Wind exposure can also affect how long your pool is in an open area with direct sunlight, it will warm up more quickly.
system to maintain the desired temperature. So when choosing the location for your pool, consider factors like sunlight exposure and protection from wind to optimize its heating efficiency. A pool cover is one of the best ways to speed up pool heating and retain heat. An uncovered pool can lose heat at around 0.06°C or more per hour
through evaporation alone, which can significantly lengthen the heating time. Using a solar cover, you can extend the pool heating season by three months or more, as it helps trap heat from the sun during the day and prevents heat loss overnight. On average, a solar pool cover can increase the water temperature by up to 5 degrees within 12 hours.
This simple addition saves on energy costs and ensures that your swimming season lasts longer, allowing for more enjoyable days spent in warm water. The size and depth of your pool are important factors to consider regarding heating time. A larger pool will naturally take longer to heat than a smaller one. The surface area and volume of the pool
play a role in determining the heating requirements. Additionally, the depth of the pool also affects how long it takes for the water to reach your desired temperature. So, if you have a large or deep pool, it takes longer to heat up than a smaller or shallower pool. This calculator from Pool Warehouse will give you a rough idea of how long it takes.
Water temperature plays a crucial role in the comfort and enjoyment of your swimming pool. Not only does it affect the overall experience, but it also has significant implications for energy consumption and heating costs. The ideal water temperature for most pool owners falls between 78°F to 82°F, providing a comfortable environment for swimming pool.
and relaxation. However, weather conditions, heater efficiency, and insulation can impact how quickly your pool, requiring more energy from your heating system to maintain the desired warmth. On the other hand, if you
live in a warmer climate or have ample direct sunlight on your pool surface throughout the day, you may be able to rely on natural solar heating to warm up the water faster. Pool owners need to consider these variables when determining how long their specific pools will take to reach their desired temperature. By understanding these factors and
making informed decisions about appropriate heating systems and techniques (such as using pool covers or optimizing circulation), you can maximize energy efficiency while ensuring that your pool is consistently at its optimal temperature for year-round enjoyment. Heat pump: A heat pump can take between 12-24 hours to raise the pool water
temperature by around 1-2 degrees. Want to know the recommended heating times for other types of pool heaters? Keep reading! Using a heat pump to he
degrees Fahrenheit (11 degrees Celsius). The actual time depends on factors like the pump's BTU output, the water's initial state, and the pool's size. It's important to note that while heat pumps may take longer than other heating methods, they tend to last longer and result in long-term cost savings. So if you're looking for an effective way to warm
up your pool, a heat pump could be a great option. Solar heating is a sustainable and cost-effective way to heat your pool by approximately 2.5° to 5.5° C per day, making your pool up to 8-12 degrees warmer than unheated pools on average. The best part is that solar pool
heating systems can work for around 20 years with minimal maintenance. By harnessing the sun's power, you can extend your swimming season by up to four months a year and enjoy warm water even during colder months. So if you're looking for an eco-friendly and efficient way to heat your pool, consider investing in solar heating. Gas heating is a
popular option for quickly and efficiently heating your pool. Gas pool heaters can provide fast heat, allowing you to enjoy your pool in minutes or hours. These heater is based on its BTU per hour, which determines how much
heat it can produce. Remember that gas heaters consume fuel, with propane heaters typically burning around 1 gallons of propane per hour. The cost of natural gas varies depending on location and market fluctuations. Gas heating
convenient way to heat up your pool quickly so you can enjoy the water more. To speed up pool heating, use a pool cover is one of the most effective ways to heat your pool faster and save on energy costs. Pool covers not only prevent evaporation, but they also act as a barrier between
the water and installing loss. Installing loss. Installing a swimming pool cover can increase the temperature of your pool by up to 5 degrees in just 12 hours on average. Keeping your pool covered as much as possible'll maximize the time and energy required to warm up the water. Plus, with reduced evaporation, you won't have to constantly
refill your pool, saving you even more money in the long run. Overall, using a pool cover is an easy yet effective way to speed up pool heating system settings for your pool, there are a few key things to keep in mind. First, consider adjusting the temperature settings based on
your usage patterns. Lowering the temperature slightly during periods when the pool is not in use can help save energy and reduce heating costs. Additionally, ensure your pool's circulation system runs efficiently by regularly cleaning and maintaining it. This will unevenly distributed evenly throughout the and minimize any heat loss.
Lastly, if you have a programmable thermostat or timer for your heating system, use these features only to heat your pool water warm for longer.
Solar covers can increase the temperature of your pool by up to 5 degrees in just 12 hours on average! Not only that, but they also play a crucial role in reducing heat loss and maintain warmth in your pool, investing in solar blankets or heating mats is
worth considering. Proper water circulation is crucial for efficient pool heating system is evenly distributed throughout the entire pool. This helps to eliminate any cold spots and promotes faster heating. In addition, proper circulation prevents heat
loss by continuously pushing warmer water toward cooler areas of the pool. To maintain proper water circulation, ensure your pool somfortable and ready for swimming whenever you need it! - The ideal pool temperature for
most people is between 86°F and 90°F (30°C and 32°C). - People with arthritis may prefer even higher pool temperatures are
especially beneficial for muscle recovery after exercise or physical activity. - Remember that higher water temperatures may also increase evaporation, which can affect the overall chlorine balance in your pool. In conclusion, the time it takes to heat a pool depends on several factors, including the initial state of the water, heating systems used, local
climate, pool surroundings, and pool covers. Gas heaters are generally the fastest option for heating a pool, while heat pumps and solar systems may take longer. However, with proper planning and maintenance strategies, such as using a pool cover and optimizing heating system settings, pool owners can effectively speed up the heating process.
Understanding these factors will help potential pool owners make informed decisions about how long it will take to heat a pool? The duration to heat a pool varies depending on various elements like the size of the pool, the difference in temperature
the heater. The gas in the combustion chamber burns, and the heat exchanger transfers the heat to the water. It's a great way to heat your pool heaters? Solar pool heaters are an eco-friendly option and are perfect for sunny days. They harness the sun's rays
and convert them into heat energy, raising the pool's temperature. While they may have a higher initial cost, solar heating pools? Solar blankets or solar pool covers are an excellent choice for heating your pool. They
function by minimizing evaporation and trapping the sun's rays, warming the water. Solar blankets can be especially effective for smaller pool heaters and heat pumps speed up pool heaters and heaters and heaters and heaters and heate
are energy-efficient and work by transferring warm air from the environment into your pool. Electric heaters, while faster, consume more energy. Choosing the best option depends on factors like pool size, ambient air, and the time of year. 6. How can I maintain a constant temperature in my pool? To maintain your pool's temperature, consider using
solar pool covers or liquid solar covers, which help to prevent heat loss and reduce evaporation. Regular checks for leaks in your heating system and adjusting the settings for optimal efficiency are also essential. 7. What role does the size pool heater play in heating a pool? The size of the pool heater can significantly impact the time taken to heat the
pool. A heater's capacity is measured in British Thermal Units (BTUs), and the right BTU rating depends on factors like the volume of water in the pool and the temperature rise needed. For instance, larger pools might require a heater with higher BTUs. 8. What is the fastest way to heat a pool? The fastest way to heat a pool typically involves using a
gas or electric heater due to its higher BTU output. However, the specific 'best way' depends on factors like your pool size, available budget, desired temperature, and environmental factors. 9. Does the time of year affect pool heating? Yes, the time of year affect pool heating? Yes, the time of year affect pool heating? The specific 'best way' depends on factors like your pool size, available budget, desired temperature, and environmental factors.
environment, meaning more energy may be required to maintain a comfortable swimming temperature. Conversely, in warmer months, especially sunny days, the pool may naturally stay warmer and require less additional heating. 10. How does the ambient temperature influence pool heating? Ambient temperature plays a significant role in pool
heating. Higher ambient temperatures can help your pool heat up faster and retain the heat longer, while lower temperatures can result in slower heating and faster heat loss, 11. Can solar rings or solar domes help in heating and faster heat loss, 11. Can solar rings or domes are useful additions to heat your pool. They float on the pool's surface, attracting and
capturing the sun's heat, then transferring it to the water. They are easy to install and a good choice for smaller pools or during sunny weather. Thermal radiation is similar to feeling the heat of a campfire on your face from a distance.
Thermal radiation losses are responsible for 20%-30% of heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction losses account for the heat energy loss in the swimming pool. Solar Sun RingsOrder From AmazonConduction loss in the swimming pool solar Sun RingsOrder From AmazonConduction loss in the swimming pool solar Sun RingsOrder From Am
that doesn't occur on the pool surface and only accounts for about 5% of total heat energy loss.
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