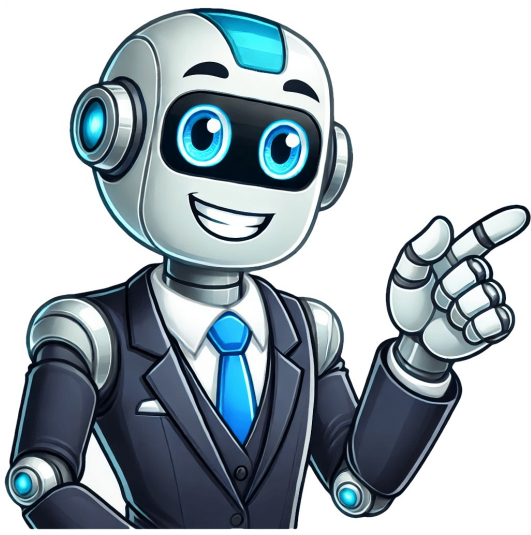


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Hogo clan surrender to Toyotomi Hideyoshi, and Japan is unified. 1591: Gazi Giray leads a huge Tatar expedition against Moscow. 1591: In Mali, Moroccan forces of the Sultan Ahmad al-Mansur defeat by Judar Pasha defeat the Songhai Empire at the Battle of Tondibi. 1592-1593: John Stow reports 10,675 plague deaths in London, a city of approximately 200,000 people. 1592-1598: Korea, with the help of Ming dynasty China, repels two Japanese invasions. 1593-1606: The Long War between the Habsburg monarchy and the Ottoman Turks. 1594: St. Paul's College, Macau, founded by Alessandro Valignano. 1595: First Dutch expedition to Indonesia sets sail for the East Indies with two hundred and forty-nine men and sixty-four cannons led by Cornelis de Houtman.[18] 1596: Birth of René Descartes. 1596: June, de Houtman's expedition reaches Banten the main pepper port of West Java where they clash with both the Portuguese and Indonesians. It then sails east along the north coast of Java losing twelve crew to a Javanese attack at Sidayu and killing a local ruler in Madura.[18] 1597: Romeo and Juliet is published. 1597: Cornelis de Houtman's expedition returns to the Netherlands with enough spices to make a considerable profit.[18] 1598: The Edict of Nantes ends the French Wars of Religion. 1598: Abbas I moves Safavids capital from Qazvin to Isfahan in 1598. 1598-1613: Russia descends into anarchy during the Time of Troubles. 1598: The Portuguese require an armada of 90 ships to put down a Solorese uprising.[12] (to 1599) 1598: More Dutch fleets leave for Indonesia and most are profitable.[18]Edo period screen depicting the Battle of Sekigahara 1598: The province of Santa Fe de Nuevo México is established in Northern New Spain. The region would later become a territory of Mexico, the New Mexico Territory in the United States, and the US State of New Mexico. 1598: Death of Toyotomi Hideyoshi, known as the unifier of Japan. 1599: The Mali Empire is defeated at the Battle of Jenné. 1599: The van Neck expedition returns to Europe. The expedition makes a 400 per cent profit.[18] (to 1600) 1599: March, Leaving Europe the previous year, a fleet of eight ships under Jacob van Neck was the first Dutch fleet to reach the ‘Spice Islands’ of Maluku.[18] 1600: Giordano Bruno is burned at the stake for heresy in Rome.Siege of Filakovo castle during the Long Turkish War 1600: Battle of Sekigahara in Japan. End of the Warring States period and beginning of the Edo period. 1600: The Portuguese win a major naval battle in the bay of Ambon.[19] Later in the year, the Dutch join forces with the local Hituese in an anti-Portuguese alliance, in return for which the Dutch would have the sole right to purchase spices from Hitu.[19] 1600: Elizabeth I grants a charter to the British East India Company beginning the English advance in Asia. 1600: Michael the Brave unifies the three principalities; Wallachia, Moldavia and Transylvania after the Battle of Selmăř from 1599. For later events, see Timeline of the 17th century. Polybius' The Histories translated into Italian, English, German and French. [20] Mississippian culture disappears. Medallion rug, variant Star Ushak style, Anatolia (modern Turkey), is made. It is now kept at the Saint Louis Art Museum. Hernan Cortes (1485-1547) Henry VIII. (1491-1547) King of England and Ireland Don Fernando Álvarez de Toledo (1507-1582) Suleiman the Magnificent, Sultan of the Ottoman Empire (1520-1566) Ivan IV the Terrible (1530-1584) Oda Nobunaga (1534-1582) Sir Francis Drake (c. 1540 - 1596) Alberico Gentili, (1552-1608) the Father of international law Philip II of Spain, King of Spain (1556-1598) Akbar the Great, Mughal emperor (1556-1605) Related article: List of 16th century inventions. The Columbian Exchange introduces many plants, animals and diseases to the Old and New Worlds. Introduction of the spinning wheel revolutionizes textile production in Europe. The letter J is introduced into the English alphabet. 1500: First portable watch is created by Peter Henlein of Germany.The Iberian Union in 1598, under Philip II, King of Spain and Portugal 1513: Juan Ponce de León sights Florida and Vasco Núñez de Balboa sights the eastern edge of the Pacific Ocean. 1519-1522: Ferdinand Magellan and Juan Sebastián Elcano lead the first circumnavigation of the world. 1519-1540: In America, Hernando de Soto expeditions map the Gulf of Mexico coastline and bays. 1525: Modern square root symbol (√) 1540: Francisco Vázquez de Coronado sights the Grand Canyon. 1541-42: Francisco de Orellana sails the length of the Amazon River. 1542-43: Firearms are introduced into Japan by the Portuguese. 1543: Copernicus publishes his theory that the Earth and the other planets revolve around the Sun 1545: Theory of complex numbers is first developed by Gerolamo Cardano of Italy. 1558: Camera obscura is first used in Europe by Giambattista della Porta of Italy. 1559-1562: Spanish settlements in Alabama/Florida and Georgia confirm dangers of hurricanes and local native warring tribes. 1565: Spanish settlers outside New Spain (Mexico) colonize Florida's coastline at St. Augustine. 1565: Invention of the graphite pencil (in a wooden holder) by Conrad Gesner. Modernized in 1812. 1568: Gerardus Mercator creates the first Mercator projection map. 1572: Supernova SN 1572 is observed by Tycho Brahe in the Milky Way. 1582: Gregorian calendar is introduced in Europe by Pope Gregory XIII and adopted by Catholic countries. c. 1583: Galileo Galilei of Pisa, Italy identifies the constant swing of a pendulum, leading to development of reliable timekeepers. 1585: earliest known reference to the 'sailing carriage' in China. 1589: William Lee invents the stocking frame. 1591: First flush toilet is introduced by Sir John Harrington of England, the design published under the title 'The Metamorphosis of Ajax'. 1593: Galileo Galilei invents a thermometer. 1596: William Barents discovers Spitsbergen. 1597: Opera in Florence by Jacopo Peri. Entertainment in the 16th century ^ a b Modern reference works on the period tend to follow the introduction of the Gregorian calendar for the sake of clarity; thus NASA's lunar eclipse catalogue states "The Gregorian calendar is used for all dates from 1582 Oct 15 onwards. Before that date, the Julian calendar is used." For dates after 15 October 1582, care must be taken to avoid confusion of the two styles. ^ de Vries, Jan (14 September 2009). "The limits of globalization in the early modern world". The Economic History Review. 63 (3): 710-733. CiteSeerX 10.1.1.186.2862. doi:10.1111/j.1468-0289.2009.00497.x. JSTOR 40929823. S2CID 219969360. SSRN 1635517. ^ Singh, Sarina; Lindsay Brown; Paul Clammer; Rodney Cocks; John Mock (2008). Pakistan & the Karakoram Highway. Vol. 7, illustrated. Lonely Planet. p. 137. ISBN 978-1-74104-542-0. Retrieved 23 August 2010. ^ Babur (2006). Babur Nama. Penguin Books. p. vii. 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An Encyclopedia of World History (5th ed. 1973); highly detailed outline of events online free Media related to 16th century at Wikimedia Commons Timelines of 16th century events, science, culture and persons Retrieved from " 4 The following pages link to 16th century External tools (link count transclusion count sorted list) - See help page for transcluding these entries Showing 50 items. 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Hoping someone can check the advise I got from the pool company. We have an inground pool with a pool heater. The heater was making a squealing sound so I called out the pool maintenance company. They showed me that the pump was very hot to the touch and they opened up the heat exchanger which had a bunch of flakes of rust / delamination / scale, whatever. His comment was the exchanger needs to be replaced as it is deteriorating and this flaking is reducing the water flow, and the squealing is from the water boiling because of the reduced water flow, and the hot pump is likely due to the extra resistance from the flaking ... He cleaned it out with a vacuum and blower, fired it up and no squealing. That all makes sense, but I'd like you to help me verify if I should be thinking about anything else. A few facts: We bought the house with the pool in Oct 2020. Pool has a heater that was installed in 2016. We have well water, with some iron in the water and I've had a heck of a time dealing with the iron (much easier this year than the past two). We added a SWG, backflow valve, new plumbing two years ago. Prior owner had an inline chorine puck system (with no backflow valve). Prior owner did a Darn job taking care of the pool (and pretty much anything else in the house). I've noticed some flakes entering the pool from the return jets near the steps since we moved here. Sometimes worse than others. I could not figure out what that was, but suspected the heater. My water chemistry has been from decent, to very good since I have owned it except for dealing with Iron. I use metalic magic to keep the iron maintained, and I have used ascorbic acid treatment this spring before adding chlorine. Prior owner was using some pool store chemical to deal with iron that I have no idea what it was. Also ... we do NOT have a bypass system setup to bypass the heater, but that will be installed when we do the exchanger. I run the pump 24/7 but I'm considering putting in a timer to shut it down a few hours at night. I'm not sure what else you might need to know. Does this all sound right? Any thoughts or comments or things I should be doing or looking into while replacing the exchanger? What model heater do you have? Post pics of your heater and the burner area. At 7 years old you should replace the heater and start fresh with a new heater and warranty. The cost of replacing the heat exchanger will probably be 50% of the cost of a new heater. According to the receipts the prior owner left me, its a Rheem 266 w/Cupro Nickel Exchanger. \$2500 installed in 2016. I didn't get a picture of it opened up. EDIT: although the pool guy said it was copper, so I don't really know about the exchanger. That could have been an invoice / estimate and the prior owner switch to copper at install. Update: Estimate to replace heat exchanger: \$1650 plus \$392 labor. \$2180 total with a bypass valve install. Versus \$3554 for a completely new heater. OR... \$1200 for the exchanger online and I'd have to figure out how to install it myself? Update: Estimate to replace heat exchanger: \$1650 plus \$392 labor. \$2180 total with a bypass valve install. Versus \$3554 for a completely new heater. OR... \$1200 for the exchanger online and I'd have to figure out how to install it myself? My personal rule is if repair costs over 50% of new then buy new ane dart over with a warranty. My personal rule is if repair costs over 50% of new then buy new ane dart over with a warranty. If I were going to do a replacement, is getting the same unit the right idea? Or is there a better solution for a home, in ground 18x36 pool with a SWG and well water? Do you have any automation or pool controls? Gas heaters are a commodity. They are all basically the same. Look at the Raypak/Rheem Avia heater. I have heard good things about it and it has remote features if you don't have automation. Do you have any automation or pool controls? Gas heaters are a commodity. They are all basically the same. Look at the Raypak/Rheem Avia heater. I have heard good things about it and it has remote features if you don't have automation. Thanks. We don't have any automation whatsoever. I don't even have a timer (but I'm working on that). I'm not sure I need to be able to change the temp on my phone though. I can just walk five feet and do it. What happens when a heat exchanger fails? Does it burst and water goes everywhere? Does it run a risk of fire since the gas is going? Since they clean it, it's working fine. But eventually (maybe soonish) it will get clogged again. I'm wondering if I can wait until next spring to replace it? I don't think you really understand the condition of your heat exchanger and I think your pool guy was blowing some smoke up your you know what. A heat exchanger can fail for three reasons: It can get leaks due to low pH for an extended amount of time. These are pinhole leaks that can put out the fire or cause water to boil in the heater. It can get erosion from too high water flow which can also cause pin hole leaks Or the heat exchanger tubes can scale up due to bad water chemistry. Scale can be removed from a heat exchanger. See the video below. If your heat exchanger is not leaking then it should be good. I am not sure exactly what model heater you have and what style heat exchanger you have. Some pics would help. I don't think you really understand the condition of your heat exchanger and I think your pool guy was blowing some smoke up your you know what. A heat exchanger can fail for three reasons: It can get leaks due to low pH for an extended amount of time. These are pinhole leaks that can put out the fire or cause water to boil in the heater. It can get erosion from too high water flow which can also cause pin hole leaks Or the heat exchanger tubes can scale up due to bad water chemistry. Scale can be removed from a heat exchanger. See the video below. If your heat exchanger is not leaking then it should be good. I am not sure exactly what model heater you have and what style heat exchanger you have. Some pics would help. Thanks for that. I'll dig into it tomorrow and take pictures. However, this thread has similar pics, except the flaking on my (which was the same tubes being what I believe are the outflow tubes) were dark brown / metallic looking. Not even slightly white. They feel like flakes of rust, and look like flakes of rust. But, they had the same issues this thread had. BTW, I don't think these guys are blowing smoke up my rear, but I would not be surprised if they just didn't know what they are talking about. Most of these kids work there a few years and leave. That thread shows a typical scaled heat exchanger. There should be nothing in the water flow of a heater that will rust. I'll have to wait to open it up until tomorrow. It's high of 40 with rain/snow today. I don't want to break something and risk freezing. So, when an exchanger goes bad it just starts leaking? No big blow outs or risks of anything worse? So, when an exchanger goes bad it just starts leaking? No big blow outs or risks of anything worse? Nope. No pressure in the heat exchanger to blow anything out. A heat exchanger leak can often go on for a while undetected. The heater boils the leaking water away and you never see the leaks. Eventually the leaks get big enough where it drown the fire and the heater shuts down. Or the heater starts making strange noises. Reactions: RookWDW