Hydronic supply near me

COVID-19 Update 6/1/20 Avco Supply will be implementing new measures to protect our staff and customers until further notice: Our hours are Monday – Friday 7:30am-4:30pm Saturday 8am-12pm The counter is OPEN *Face covering is required* Customers are not permitted in our office, warehouse or restrooms You can email, call or text your order (215) 949-1550 ahead of time so that we can have your order ready for pick up Deliveries will continue to operate to ensure uninterrupted service Thank you for your cooperation and patience during this time. Avco's Text Support Line Text us (215)949-1550 anytime to: Check stock • Place Orders • Check on Delivery • Get a quote • Check warranty coverage & more During business hours Avco counter/inside sales staff will answer requests in REAL time After business hours Requests will be processed the next business day Originally AVCO was an industrial supply and oil parts/heating supply house. Since that time AVCO has evolved into a heating and air conditioning supply house for both residential and commercial applications with an emphasis on design-build projects and energy management. Major product lines include: Ruud Heating and Cooling products Lochinvar Taco Grundfos Frigidaire Gibson Burnham Milwaukee Tools Westates Supply specializes in commercial and residential plumbing and hydronic heating supplies. We carry everything from drain pipe to high end kitchen faucets. Established in 1986, Westates is a locally owned and operated company. This independence allows us to offer a higher level of customer service and a larger inventory of the items you need.   This article does not cite any sources. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.Find sources: "Hydronics" – news · newspapers · books · scholar · JSTOR (January 2021) (Learn how and when to remove this template message) Hydronics (hydro- meaning "water") is the use of liquid water or gaseous water (steam) or a water solution (usually glycol with water) as heat-transfer medium in heating and cooling systems. The name differentiates such systems from oil and steam systems.[clarification needed] Historically, in large-scale commercial buildings such as high-rise and campus facilities, a hydronic system may include both a chilled and a heated water loop, to provide for both heating and air conditioning. Chillers and cooling towers are used either separately or together as means to provide water cooling, while boilers heat water. A recent innovation is the chiller boiler system, which provides an efficient form of HVAC for homes and smaller commercial spaces. A hydronic fan unit heater used for maintaining warmth within an industrial setting. The fan draws cool, ambient air through the heat exchanger around the perimeter of the housing with pipes carrying hot glycol, and expels it out the centre. District heating Main article: District heating Many larger cities have a district heating system that provides, through underground piping, publicly available high temperature hot water and chilled water. A building in the service district may be connected to these on payment of a service fee. Types of hydronic system Basic types Hydronic systems are of two basic types: Hot water Chilled water Classification Hydronic systems are classified in five ways: Flow generation (forced flow or gravity flow) Temperature (low, medium, and high) Pressurization (low, medium, and high) Piping arrangement Pumping arrangement Snow melting hydronics Piping arrangements Hydronic systems may be divided into several general piping arrangement categories: Single or one-pipe Two pipe steam (direct return or reverse return) Three pipe Four pipe Series loop Single-pipe steam Single-pipe steam radiator In the oldest modern hydronic heating technology, a single-pipe steam system delivers steam to the radiators where the steam gives up its heat and is condensed back to water. The radiators and steam supply pipes are pitched so that gravity eventually takes this condensate back down through the steam supply piping to the boiler where it can once again be turned into steam and returned to the radiators. Despite its name, a radiator does not primarily heat a room by radiation. If positioned correctly a radiator will create an air convection current in the room, which will provide the main heat transfer mechanism. It is generally agreed that for the best results a steam radiator should be no more than one to two inches from a wall. Single-pipe systems are limited in both their ability to deliver high volumes of steam (that is, heat)[citation needed] and the ability to control the flow of steam to individual radiators[citation needed] (because closing off the steam supply traps condensate in the radiators). Because of these limitations, single-pipe systems are no longer preferred. These systems depend on the proper operation of thermostatic air-venting valves located on radiators throughout the heated area. When the system is not in use, these valves are open to the atmosphere, and radiators and pipes contain air. When a heating cycle begins, the boiler produces steam, which expands and displaces the air in the system. The air exits the system through the air-venting valves on the radiators and on the steam pipes themselves. The thermostatic valves close when they become hot; in the most common kind, the vapor pressure of a small amount of alcohol in the valve exerts the force to actuate the valve and prevent steam from leaving the radiator. When the valve cools, air enters the system to replace the condensing steam. Some more modern valves can be adjusted to allow for more rapid or slower venting. In general, valves nearest to the boiler should vent the slowest, and valves furthest from the boiler should vent the fastest.[citation needed] Ideally, steam should reach each valve and close each and every valve at the same time, so that the system can work at maximal efficiency; this condition is known as a "balanced" system.[citation needed] Two-pipe steam systems In two-pipe steam systems, there is a return path for the condensate and it may involve pumps as well as gravity-induced flow. The flow of steam to individual radiators can be modulated using manual or automatic valves. Two-pipe direct return system The return piping, as the name suggests, takes the most direct path back to the boiler. Advantages Low cost of return piping in most (but not all) applications, and the supply and return piping are separated. Disadvantages This system can be difficult to balance due to the supply line being a different length than the return; the further the heat transfer device is from the boiler, the more pronounced the pressure difference. Because of this, it is always recommended to: minimize the distribution piping pressure drops; use a pump with a flat head characteristic[when defined as?], include balancing and flow-measuring devices at each terminal or branch circuit; and use control valves with a high head loss[when defined as?] at the terminals. Two-pipe reverse return system The two-pipe reverse return configuration which is sometimes called 'the three-pipe system' is different to the two-pipe system in the way that water returns to the boiler. In a two-pipe system, once the water has left the first radiator, it returns to the boiler to be reheated, and so with the second and third etc. With the two-pipe reverse return, the return pipe travels to the last radiator in the system before returning to the boiler to be reheated. Advantages The advantage with the two-pipe reverse return system is that the pipe run to each radiator is about the same, this ensures that the frictional resistance to the flow of water in each radiator is the same. This allows easy balancing of the system. Disadvantages The installer or repair person cannot trust that every system is self-balancing without properly testing it. Water loops Modern systems almost always use heated water rather than steam. This opens the system to the possibility of also using chilled water to provide air conditioning. In homes, the water loop may be as simple as a single pipe that "loops" the flow through every radiator in a zone. In such a system, flow to the individual radiators cannot be modulated as all of the water is flowing through every radiator in the zone. Slightly more complicated systems use a "main" pipe that flows uninterrupted around the zone; the individual radiators tap off a small portion of the flow in the main pipe. In these systems, individual radiators can be modulated. Alternatively, a number of loops with several radiators can be installed, the flow in each loop or zone controlled by a zone valve connected to a thermostat. In most water systems, the water is circulated by means of one or more circulator pumps. This is in marked contrast to steam systems where the inherent pressure of the steam is sufficient to distribute the steam to remote points in the system. A system may be broken up into individual heating zones using either multiple circulator pumps or a single pump and electrically operated zone valves. Improved efficiency and operating costs There have been considerable improvements in the efficiency and therefore the operating costs of a hydronic heating system with the introduction of insulating products. Radiator Panel system pipes are covered with a fire rated, flexible and lightweight elastomeric rubber material designed for thermal insulation. Slab Heating efficiency is improved with the installation of a thermal barrier made of foam. There are now many product offerings on the market with different energy ratings and installation methods. Balancing Most hydronic systems require balancing. This involves measuring and setting the flow to achieve an optimal distribution of energy in the system. In a balanced system every radiator gets just enough hot water to allow it to heat up fully. Boiler water treatment Residential systems may use ordinary tap water, but sophisticated commercial systems often add various chemicals to the system water. For example, these added chemicals may: Inhibit corrosion Prevent freezing of the water in the system Increase the boiling point of the water in the system Inhibit the growth of mold and bacteria Allow improved leak detection (for example, dyes that fluoresce under ultraviolet light) Air elimination All hydronic systems must have a means to eliminate air from the system. A properly designed, air-free system should continue to function normally for many years. Air causes irritating system noises, as well as interrupting proper heat transfer to and from the circulating fluids. In addition, unless reduced below an acceptable level, the oxygen dissolved in water causes corrosion. This corrosion can cause rust and scale to build up on the piping. Over time these particles can become loose and travel around the pipes, reducing or even blocking the flow as well as damaging pump seals and other components. Water-loop system Water-loop systems can also experience air problems. Air found within hydronic water-loop systems may be classified into three forms: Free air Various devices such as manual and automatic air vents are used to address free air which floats up to the high points throughout the system. Automatic air vents contain a valve that is operated by a float. When air is present, the float drops, allowing the valve to open and bleed air out. When water reaches (fills) the valve, the float lifts, blocking the water from escaping. Small (domestic) versions of these valves in older systems are sometimes fitted with a Schrader-type air valve fitting, and any trapped, now-compressed air can be bled from the valve by manually depressing the valve stem until water rather than air begins to emerge. Entrained air Entrained air is air bubbles that travel around in the piping at the same velocity as the water. Air "scoops" are one example of products which attempt to remove this type of air. Dissolved air Dissolved air is also present in the system water and the amount is determined principally by the temperature and pressure (see Henry's Law) of the incoming water. On average, tap water contains between 8-10% dissolved air by volume. Removal of dissolved, free and entrained air can only be achieved with a high-efficiency air elimination device that includes a coalescing medium that continually scrubs the air out of the system. Tangential or centrifugal style air separator devices are limited to removal of free and entrained air only. Accommodating thermal expansion Water expands as it heats and contracts as it cools. A water-loop hydronic system must have one or more expansion tanks in the system to accommodate this varying volume of the working fluid. These tanks often use a rubber diaphragm pressurised with compressed air. The expansion tank accommodates the expanded water by further air compression and helps maintain a roughly constant pressure in the system across the expected change in fluid volume. Simple cisterns open to atmospheric pressure are also used. Automatic fill mechanisms Hydronic systems are usually connected to a water supply (such as the public water supply). An automatic valve regulates the amount of water in the system and also prevents backflow of system water (and any water treatment chemicals) into the water supply. Safety mechanisms Excessive heat or pressure may cause the system to fail. At least one combination over-temperature and over-pressure relief valve is always fitted to the system to allow the steam or water to vent to the atmosphere in case of the failure of some mechanism (such as the boiler temperature control) rather than allowing the catastrophic bursting of the piping, radiators, or boiler. The relief valve usually has a manual operating handle to allow testing and the flushing of contaminants (such as grit) that may cause the valve to leak under otherwise-normal operating conditions. Typical schematic with control devices shown Symbols See also Aquastat Central heating Hydronic balancing Radiant cooling Radiant heating Uniform Mechanical Code References External links Fluid Handling Representatives Association - Hydronics association website. Hydronic and Boiler Water Loops for HVAC - Hydronic and Boiler Water Loops for HVAC Problems to look out for when installing a Hydronic Heating system Melbourne Hydronic Heating - Cambro Hydronic Heating. Uniform Mechanical Code Website Uniform Solar, Hydronics & Geothermal Code Website Retrieved from " Kitchen | Bath | Age-in-Place View Showroom With over 45,000 SKUs in stock, Famous Supply specialized in HVAC, plumbing, industrial, building products, and training. 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