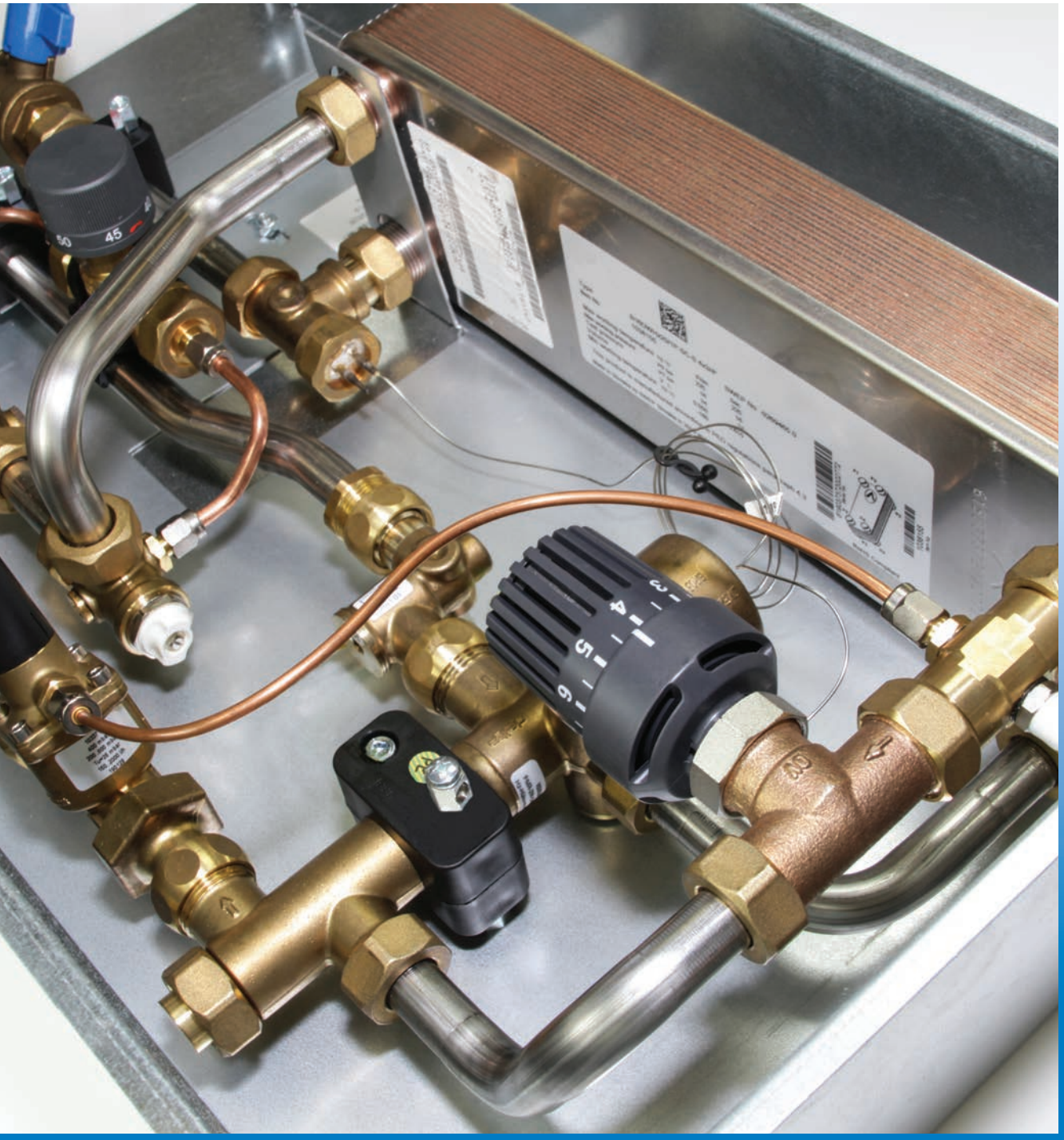
Uponor AquaPort™
Installation and Operation Manual

Maximize domestic hot water hygiene and hydronic heating efficiencies



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Foreword

Uponor is dedicated to partnering with professionals to create better human environments. As the leading North American manufacturer of Engel-method crosslinked polyethylene (PEX-a) piping, Uponor provides PEX and PP-RCT polymer solutions that feature quality products combined with expert technical support to design, install, and operate high-performing piping systems.

As part of this technical support, Uponor publishes the AquaPort Installation and Operation Manual for contractors, engineers, architects, building officials, building managers, and other individuals interested in domestic water and hydronic heating systems.

Uponor has made reasonable efforts to collect, prepare, and provide quality information and material in this manual. However, system enhancements may result in modification of features or specifications without notice.

Note that Uponor is not liable for installation practices that deviate from this manual or are not acceptable practices within the mechanical trades, codes, or standards of practices. If there are differences between Uponor recommendations and local code, always follow the more-restrictive criteria. For example, where Uponor's recommendations are more restrictive than the local code, follow the Uponor recommendations to ensure the product performs as expected and remains covered under warranty.

It is the installer's responsibility to ensure the product, design, and intended installation are acceptable to the local authority having jurisdiction (AHJ). Please direct any questions regarding the suitability of an application to Uponor Technical Services at **888.594.7726** or **support.UNA@uponor.com**.

Note: Throughout this document, the term "unit" refers to an Uponor AquaPort.

Important safety information

To reduce the risk of injury, it is very important to read and understand this manual before beginning any work. In addition, read all product safety warnings and operator manuals for the Milwaukee® ProPEX® expansion tools, PEX pipe cutters, and other installation tools to operate those tools safely and correctly. Additionally, it is important to always wear safety goggles or safety glasses with side shields when performing work.

Avoid risk of burns and scalds

The surfaces of individual components and the water escaping from the tap can become very hot. Do not touch hot surfaces, and carefully check the water temperature with a measuring device before touching it.

Qualified personnel

Only qualified personnel should install and operate the Uponor AquaPort system following all local, state, and national guidelines as well as manufacturer's design recommendations. Only qualified technicians should perform routine maintenance or service work. Additionally, only personnel with special knowledge and experience in hydraulics may work on hydraulic equipment.

Be sure to observe all instructions directly attached to the device.

Intended use

The Uponor AquaPort is intended for domestic water and hydronic heating applications only. Any other or additional use is improper. Uponor is not liable for any damage resulting from improper application or use. Intended use also includes observance of all applicable documents and compliance with inspection and maintenance conditions. To avoid risk of injury or damage to personal property, do not exceed maximum operating values of the unit, and never remove individual parts (or other installed components) while the system is still under pressure.

Replacement parts

Unauthorized components as well as replacement parts not tested with the system can damage the unit. Uponor is not liable for installation of non-approved components or spare and wear parts, as well as unauthorized modifications and conversions of the unit that can restrict the function, safety, and warranty.

Installation documentation

Use the label included on the inside of the access cover to record any changes to the installation settings. Settings can be easily transferred to a new AquaPort if a replacement is needed.

Avoid freeze damage

After filling the unit with water, ensure the fluids on both the domestic and hydronic (heating) side do not freeze.

Leaks

If leaks occur, close all shutoff valves immediately and have a professional make repairs.

Chapter 1

AquaPort overview

The Uponor AquaPort is a self-contained unit that converts a building's hydronic heating supply using a double-wall heat exchanger to provide the domestic hot-water (DHW) needs to the units or living space. The internal components will control to a set water temperature based on the DHW demand.

Uponor offers two AquaPort models for use in various commercial applications, such as multifamily complexes and hospitality buildings.

	XP0300100	XP0525180
Capacity	100,000 BTU/hr (29.3 kW)	180,000 Btu/hr (52.7 kW)
Maximum pressure	125 psi (8.6 bar)	
Maximum temperature	180°F (82°C)	
DHW temperature range	95°F-158°F (35°C-70°C)	
Width	14.5" (368 mm)	
Height	25.6" (650 mm)	
Depth	5.4" (137 mm)	
Weight	47 lbs. (21.3 kg)	57 lbs. (25.9 kg)
Connections	4 x ¾" FNPT	

Table 1-1: Product specifications (nominal values)

Figure 1-1: XP0300100

Figure 1-2: XP0525180

Features and benefits

Boiler energy efficiency

The design of the AquaPort, along with the heat exchanger selection, returns the lowest water temperature possible. This enables the equipment to reach its maximum-rated efficiency.

System energy efficiency

AquaPorts reduce the required amount of DHW and DHW recirculation lines, eliminating the standby losses of centralized domestic systems and reducing energy costs.

Repeatable, simple installation

Regardless of model, Uponor AquaPorts install the same way. This makes it is easy to create a repeatable, consistent installation to improve efficiencies and help meet project schedules.

Improved first costs

Installing Uponor AquaPorts reduces the number of service pipes necessary in conventional systems from five to three. This results in fewer supports, fire penetrations, insulation, and accessories, which save money on the overall project costs.

Refer to **Figures 1-3** and **1-4** for examples of a traditional building design and a design with Uponor AquaPorts to illustrate this concept.

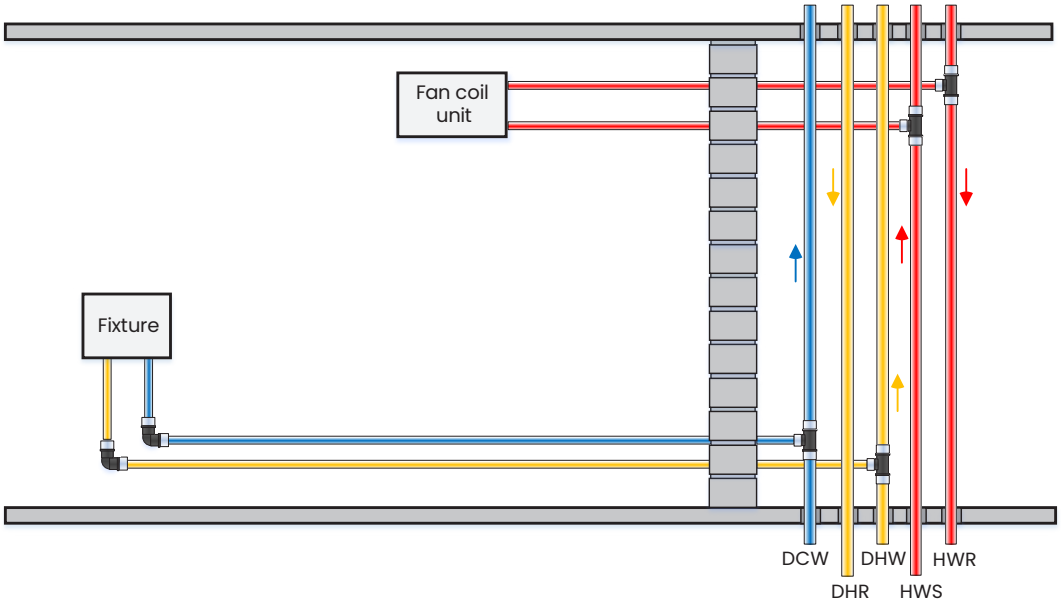


Figure 1-3: Traditional building design

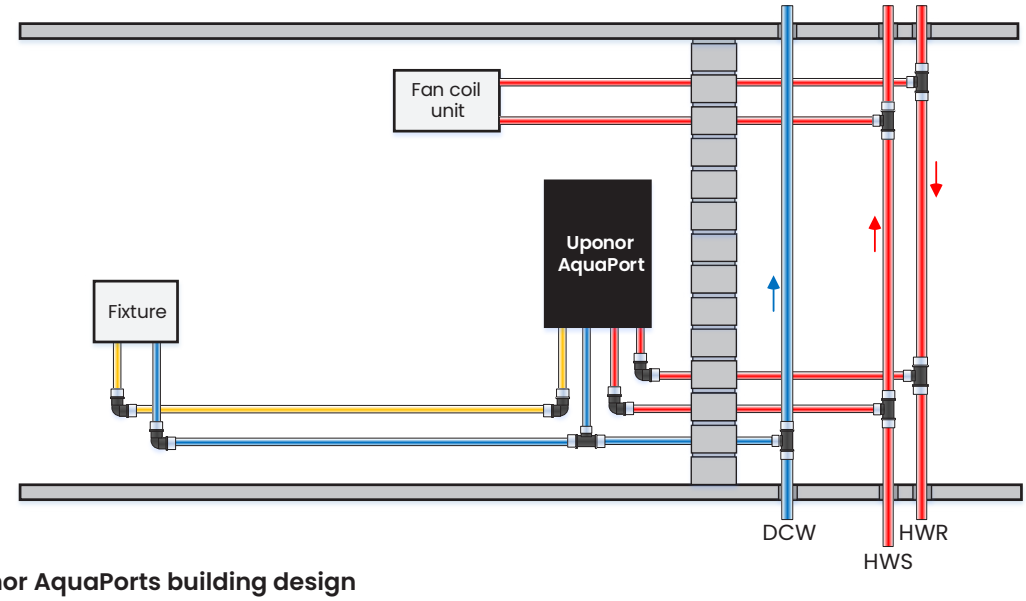


Figure 1-4: Uponor AquaPorts building design

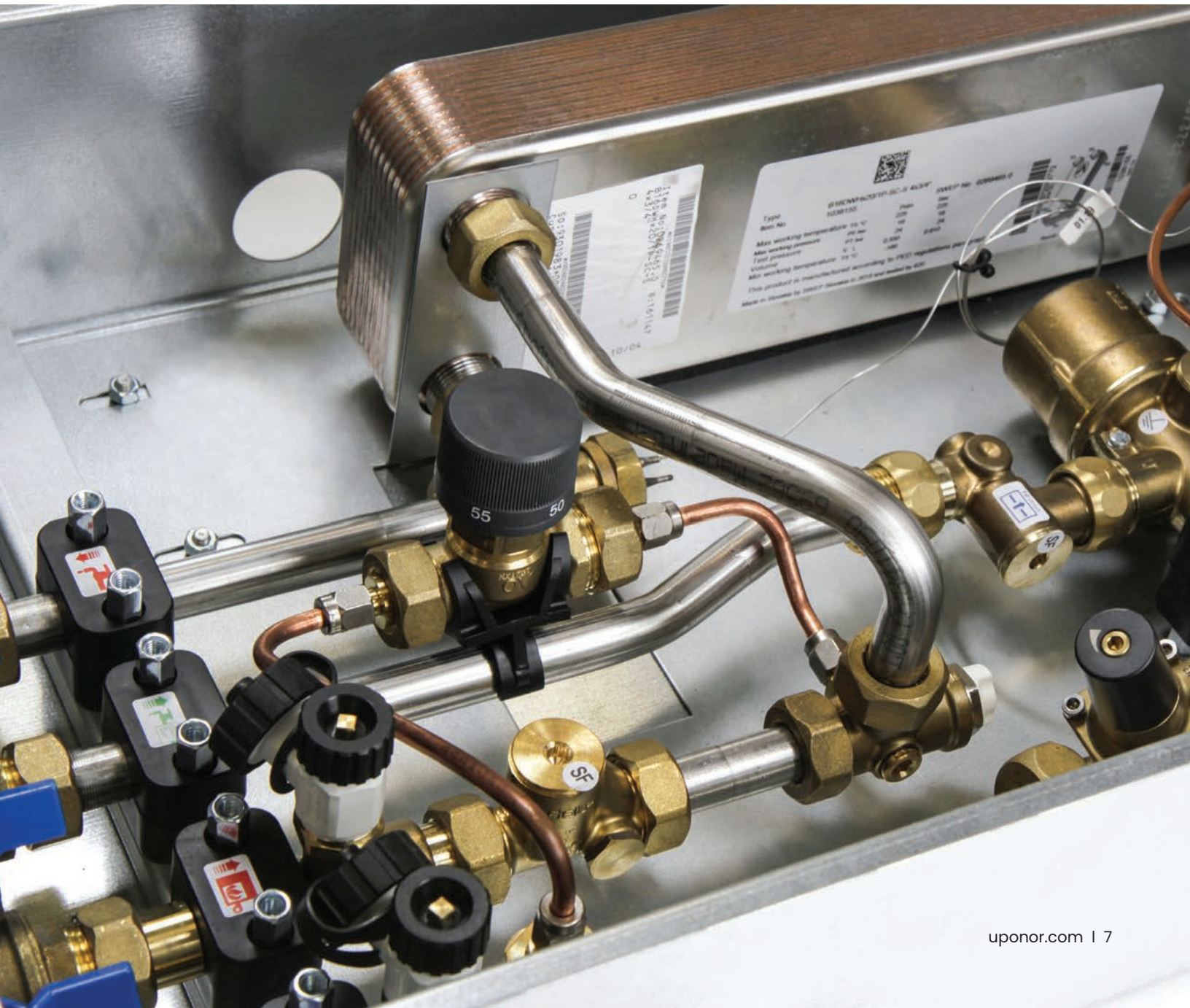
Performance

Uponor AquaPorts help improve building systems' performance in the areas of hot-water delivery times, low-flow conditions for DHW, heat exchanger performance, water consumption, anti-scalding, maintenance, and serviceability. Because AquaPorts feature a high level of controllability, they can be customized to the requirements of the building and its occupants.

Hygiene and water quality

Decentralized systems using Uponor AquaPorts offer several health and safety benefits over centralized systems, including:

- Eliminating more than 50% of the total DHW volume in the building for less piping and less chance of stagnation
- Eliminating DHW recirculation systems entirely
- Significantly reducing the amount of piping, potentially minimizing the requirements for a domestic system disinfectant strategy with temperature and/or chemicals
- Increasing water velocity, minimizing bacterial growth, minimizing water consumption, and improving hot-water delivery times due to smaller pipe sizes downstream of the AquaPorts



Chapter 2

Applications

Unit piping

Important! To assist with proper performance, install the AquaPort as the first connection off the domestic cold-water (DCW) supply line or riser that feeds the room or unit. This installation will provide the highest flow and pressure for hot water. Be sure to verify this piping configuration prior to the drywall installation.

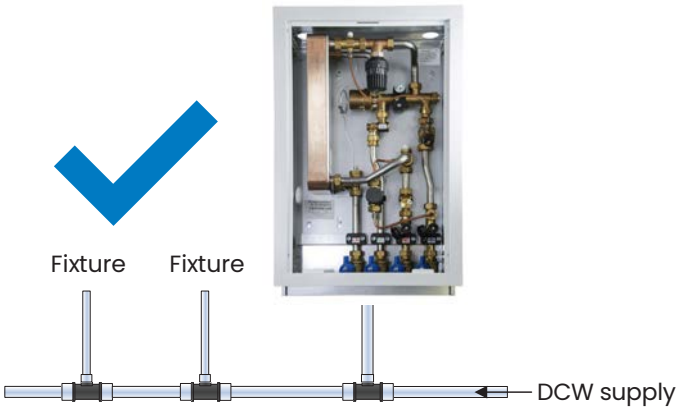


Figure 2-1: Correct installation

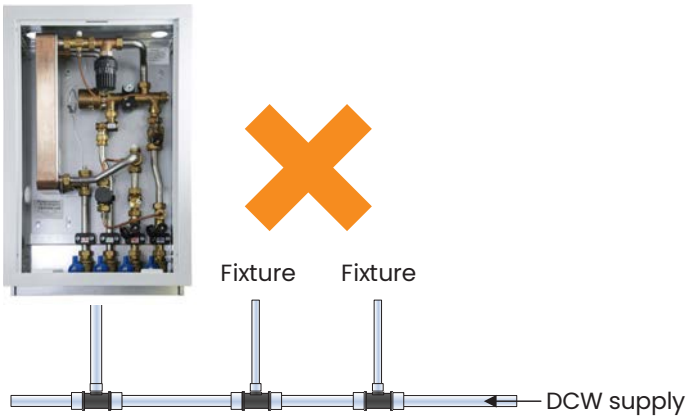


Figure 2-2: Incorrect installation

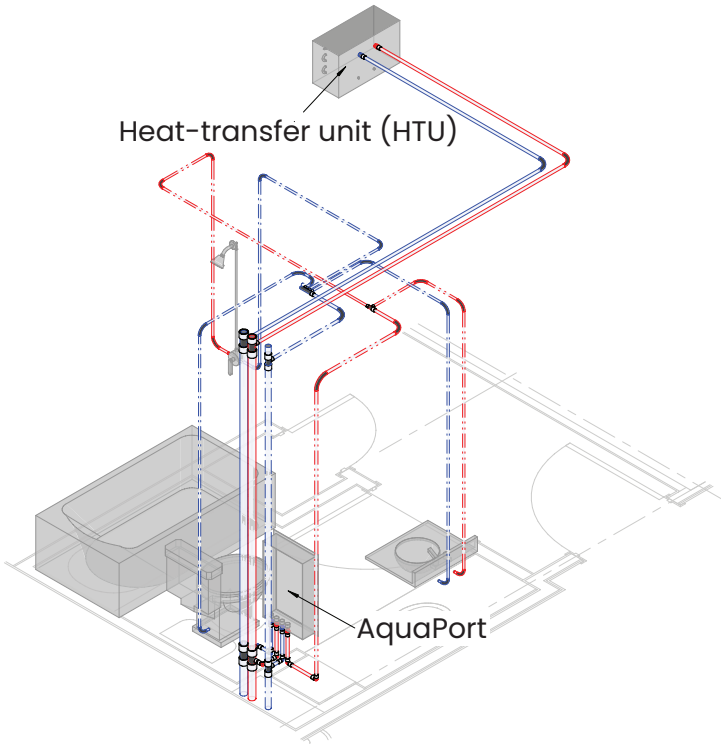


Figure 2-3: Typical bathroom configuration

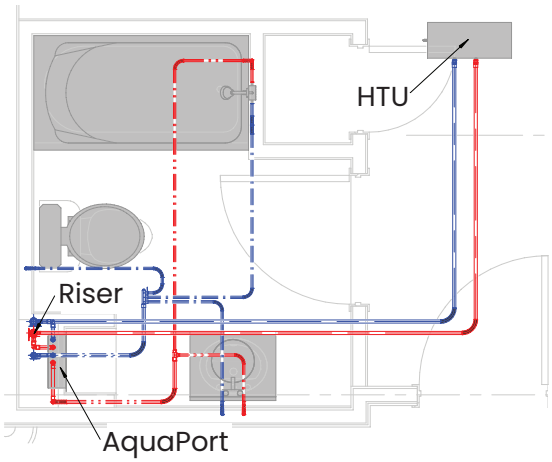


Figure 2-4: Typical bathroom configuration (overhead)

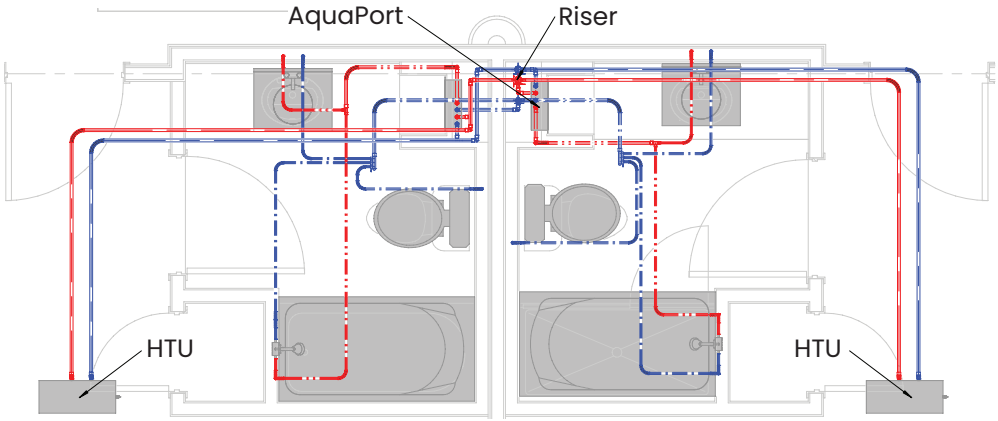


Figure 2-5: Typical back-to-back bathroom units

Chapter 3

Components

This section details and describes all the main components in the Uponor AquaPort.

AquaPort

XP0300100 and XP0525180

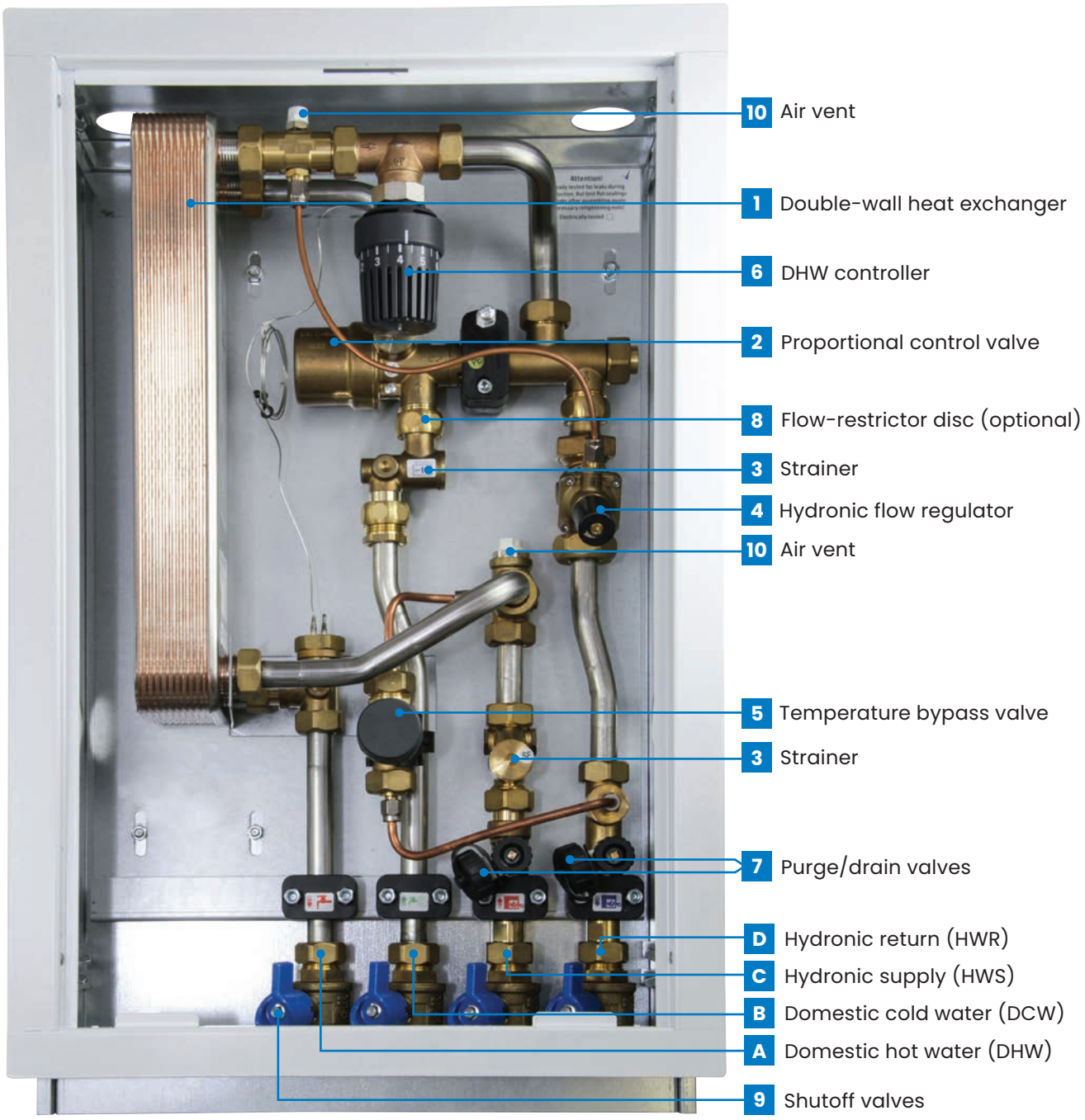


Figure 3-1: AquaPort components

1 Double-wall heat exchanger

The double-wall heat exchanger separates the DHW from the hydronic heating system to meet NSF requirements and provide high thermal efficiency and heat transfer using a counter-flow design (see **Figure 3-2**). The heat exchanger is sized specifically to provide the lowest-temperature return water possible to the heat source for greater system efficiency.

On the domestic side, the design of the heat exchanger ensures maximum delivery pressures to the fixture(s). The volume of water allowed to pass through the heat exchanger is proportional to the demand for DHW. The AquaPort includes a "syphon" feature that allows energy to drain from the heat exchanger. This lowers the temperature and effectively reduces scale build up. Refer to **Appendix A** for the heat exchanger specifications.

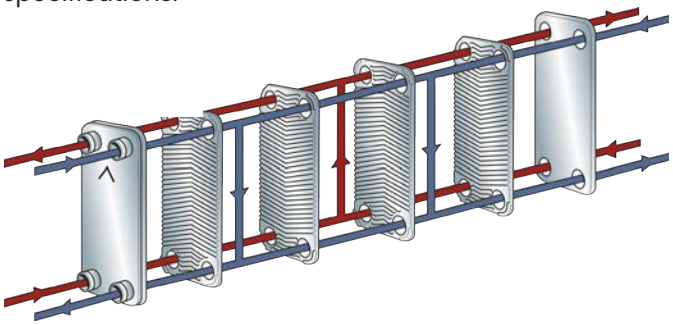


Figure 3-2: Counter-flow design of heat exchanger

2 Proportional control valve

The proportional control valve provides a flow of hydronic hot water in proportion to the required DHW demand. When a faucet is opened (or similar domestic-water demand), the proportional control valve opens, allowing hydronic heating water to flow through the heat exchanger and heat the domestic water to the desired setpoint. The proportional control valve regulates the flow based on fixture demand and ensures that the heat exchanger is only heated when there is a domestic-water demand. The valve is fully mechanical and factory set, requiring no additional controls, electronics, or adjustments. ASSE LEC 2010 governs cross-contamination mitigation between the domestic and hydronic water.

The device consists of the following components:

- A single DCW supply inlet and outlet
- A single hydronic supply inlet and outlet
- A means of dynamic flow control
- An atmospheric vent
- Two sets of three dynamic seals between the potable and hydronic flow parts

Proportional control valve	
Inlet and outlet connections	¾" ISO 228
Minimum flow rate – potable flow path	0.13 gpm (0.5 l/min)
Maximum flow rate – potable flow path	9.0 gpm (34 l/min)
Minimum flow rate – hydronic flow path	0.13 gpm (0.5 l/min)
Maximum flow rate – hydronic flow path	9.0 gpm (34 l/min)
Maximum operating temperature	195°F (90°C)
Maximum static pressure, potable and hydronic	180 psi (1,241 kPa)

Table 3-1: Proportional control valve specifications

3 Strainer

Both the domestic and hydronic loops feature a 0.5 mm stainless-steel mesh strainer to keep debris from entering the more sensitive components, such as the heat exchanger and proportional control valve. To clean or replace a strainer, first shut off and depressurize the AquaPort. Then, remove the cap with a 6 mm hex socket.

4 Hydronic flow regulator

The hydronic flow regulator adjusts the heat transfer for the DHW temperature. Use a 4 mm hex key to turn the adjustment cap clockwise to increase hydronic flow and increase the domestic-water temperature. Turn the adjustment cap counterclockwise to decrease hydronic flow and decrease the domestic-water temperature. Uponor recommends using single, full-turn adjustments for best results. If it is not possible to achieve the desired result after increasing or decreasing the adjustment, Uponor recommends resetting the hydronic flow regulator to the factory setting (10 turns from fully open or fully closed).

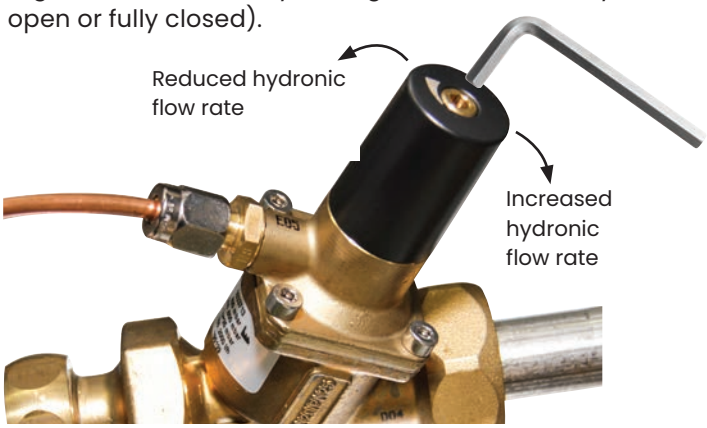


Figure 3-3: Adjustment cap

Hydronic flow regulator	
Adjustment range	0-20 turns
Factory setting	10 turns

Table 3-2: Hydronic flow regulator settings

5 Temperature bypass valve

This valve allows a small flow of hydronic water to circulate in the unit. This keeps the heating water at the device hot for faster hot-water delivery without wasting energy.

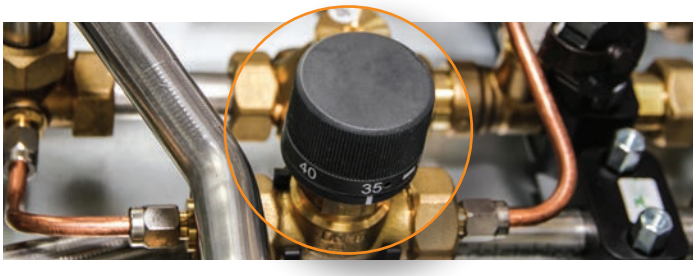


Figure 3-4: Temperature bypass valve

6 DHW controller

Installed on the hydronic loop, this valve sets the temperature of the DHW leaving the heat exchanger and controls the flow of the hydronic water loop in order to set a maximum temperature value.

DHW controller								
Setting	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Water temp. (°F)	95	104	113	122	131	140	149	158
Water temp. (°C)	35	40	45	50	55	60	65	70

Table 3-3: DHW controller settings

Figure 3-5: DHW controller

7 Purge/drain valves

Located on the inlet and outlet valves of the hydronic loop, these offer a convenient method for purging the hydronic loop.

Figure 3-6: Purge/drain valves

8 Flow-restrictor disc (optional)

Used on the domestic inlet loop, the flow-restrictor disc controls the flow of cold water to the heat exchanger to ensure the AquaPort does not over deliver the DHW. This disc does not come installed on the AquaPort but is included in the parts bag. It should be installed only if the DHW does not reach the proper setpoint (see **Chapter 4**).

Figure 3-7: Flow-restrictor disc

9 Shutoff valves

Located on both the hydronic and domestic loops, these inlet and outlet valves allow for convenient servicing or isolation of the AquaPort.

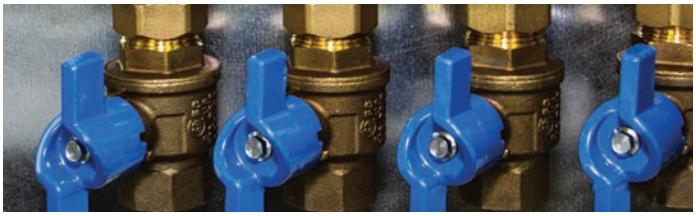


Figure 3-8: Shutoff valves

10 Air vents

The AquaPort features two manual air vents that can be opened during system fill, vent, and purge to assist with eliminating trapped air.

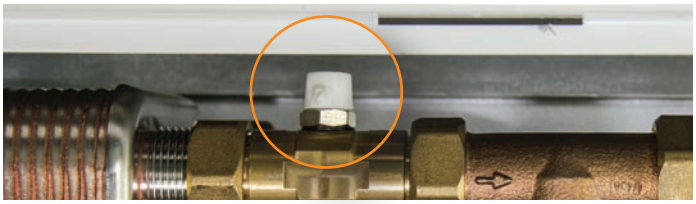


Figure 3-9: Air vent

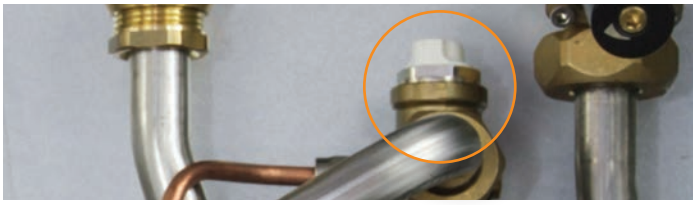


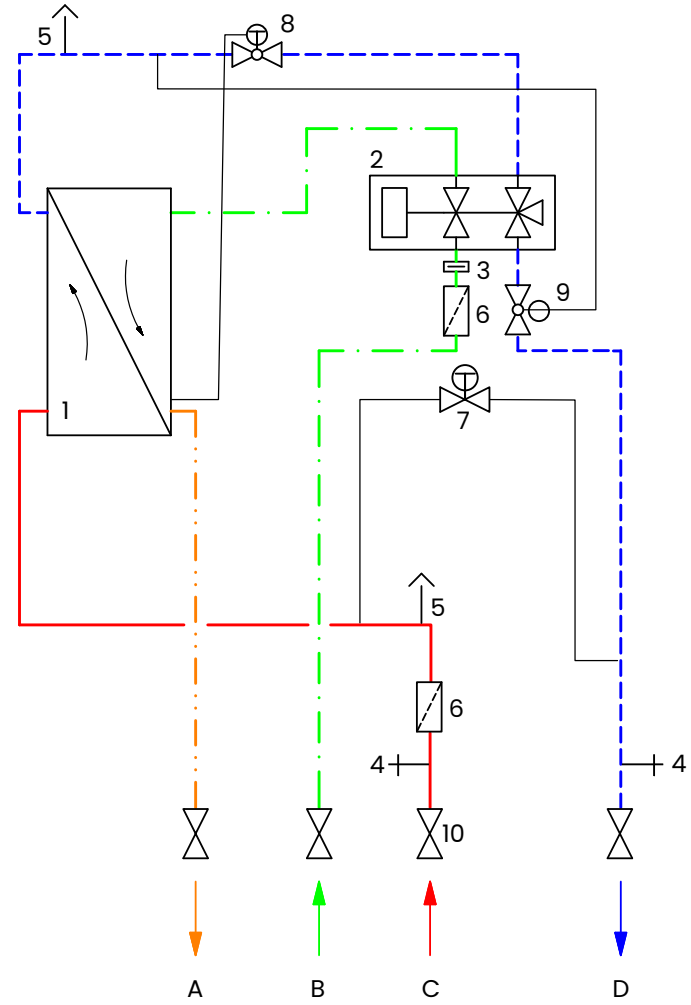
Figure 3-10: Air vent

Chapter 4

Installation and setup

Refer to the following instructions for the proper installation and setup of an Uponor AquaPort. Always follow local code or Uponor recommendations, whichever is more stringent.

Below is a schematic of the Uponor AquaPort. Be sure to reference this drawing when performing the installation.



Legend:

- A. Domestic hot water (DHW)
- B. Domestic cold water (DCW)
- C. Hydronic supply (HWS)
- D. Hydronic return (HWR)
- E. Capillary line

1. Double-wall heat exchanger
2. Proportional control valve
3. Flow-restrictor disc
4. Purge/drain valve
5. Air vent
6. Strainer
7. Temperature bypass valve
8. DHW controller
9. Hydronic flow regulator
10. Shutoff/isolation valve

Figure 4-1: Uponor AquaPort schematic

Required installation tools and hardware

- 10 mm socket
- 4" (100 mm) socket extension
- T20 Torx® Bit
- (2) adjustable channel locks and/or adjustable wrenches
- ¼" drill bit (if not using self-tapping screws)

Service

- 4 mm hex key (for the hydronic flow regulator)

Figure 4-2: AquaPort components

Installation preparation

Refer to the following instructions to prepare the AquaPort for installation.

1. Remove the AquaPort from its packaging.
2. Ensure you have all of the following parts required for installation. If you are missing any parts, or if any parts are damaged or broken, do not attempt to install the product. Contact Uponor Customer Service at **888.594.7726**, and submit an Uponor RMA.
   - AquaPort
   - Trim/finish ring
   - Cover panel
   - Flow-restrictor disc package
   - Connection gaskets
   - (4) self-tapping screws, T20
   - (2) strainer screens, 0.5 mm

Remove AquaPort from cabinet

Refer to **Figure 4-3** and the following instructions to remove the AquaPort from the cabinet.

1. Remove the door.
2. Remove the trim ring by loosening the (4) wing nuts on the side panel of the cabinet.
3. Remove the (4) 10 mm nuts that secure the back plate to the cabinet.
4. Store parts for later assembly.

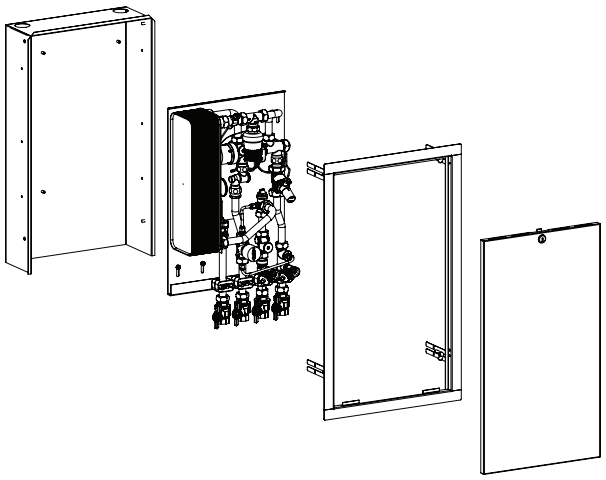


Figure 4-3: Separate the back plate from the cabinet

Mount the in-wall cabinet

Refer to **Figure 4-4** and the steps below to mount the in-wall cabinet.

1. Prior to mounting the in-wall cabinet, check the fitting connections, and tighten any nuts that may have loosened during shipping.
2. Mount the in-wall cabinet between the studs and fasten on each side with the enclosed screws.

Note: Do not close the ventilation openings on the top of the AquaPort cabinet. These must remain open to ensure sufficient airflow through the cabinet.

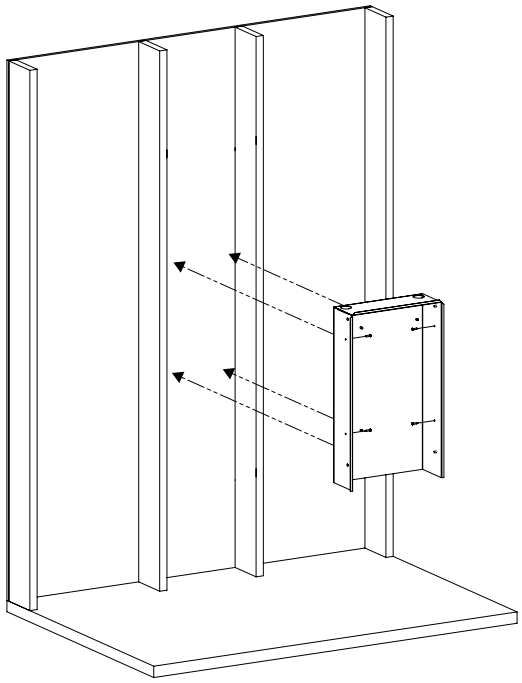


Figure 4-4: Mount the in-wall cabinet

Mount the AquaPort

Refer to **Figure 4-5** and the steps below to mount the AquaPort.

1. After securely installing the cabinet, mount the AquaPort onto the back of the cabinet.
2. Align the openings in the AquaPort back plate with the threaded studs on the back of the cabinet.
3. Thread the 10 mm nuts (removed previously) onto the threads and tighten.
4. Remove all protective plugs from fitting connections.

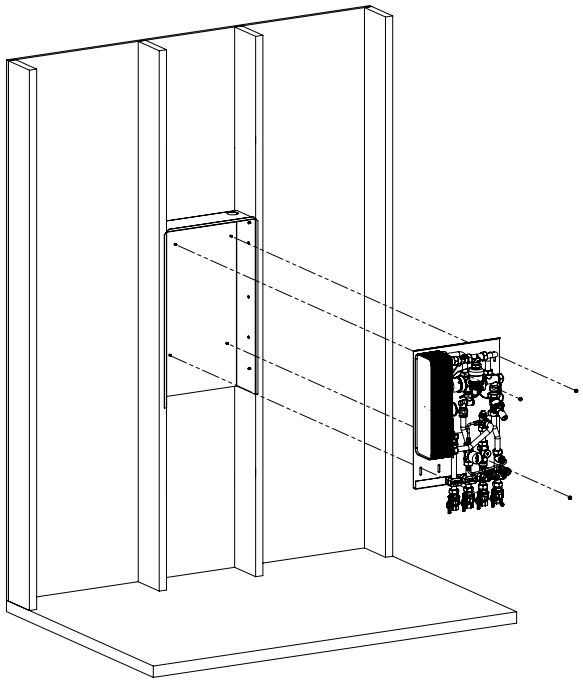


Figure 4-5: Mount the Uponor AquaPort inside the cabinet

Make pipe and fitting connections

Refer to the following steps for making the pipe and fitting connections.

1. Apply Teflon® tape or thread sealant on the fitting threads.
2. Install the fitting(s) into the appropriate ball valve connections and tighten. Use an adjustable wrench on the valve body when tightening the fitting(s).
3. Connect the Uponor PEX pipes to the fittings using a Milwaukee® M12™ ProPEX Expander Tool.
4. Connect the DHW **A**, DCW **B**, hydronic supply **C**, and hydronic return **D** lines using the appropriate ¾" male threaded adapters.
5. After making all connections, perform a pressure test according to local code.
6. Insulate the piping with the proper thermal insulation according to local, state, and national regulations.

Cover with drywall

After completing the rough-in installation, cover with drywall.

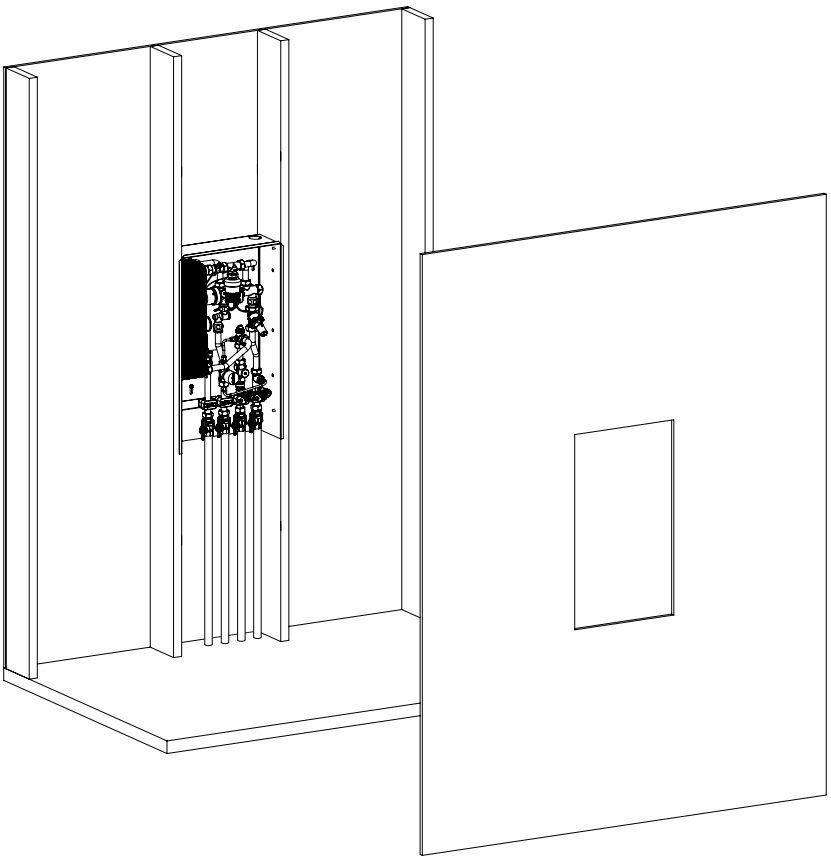


Figure 4-6: Cover with drywall

Install trim and door

Refer to **Figure 4-7** and the steps below to install the trim and door.

1. Insert the tabs on the trim inside the cabinet.
2. Align the tabs with the threaded studs on the sides of the AquaPort cabinet.
3. Gently apply pressure until the trim frame is tight to the finished surface.
4. Tighten the wing nuts.
5. Install the door.

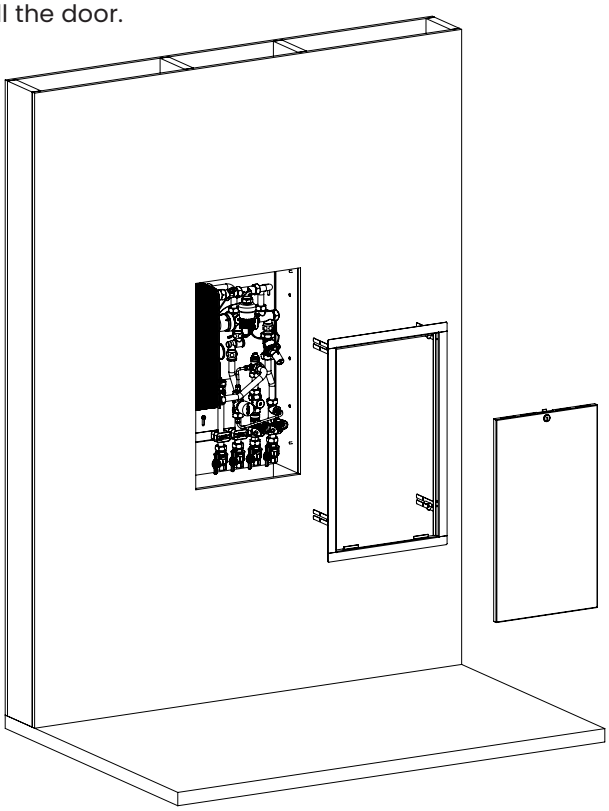


Figure 4-7: Mount frame and door

Adding a flow-restrictor disc

The AquaPort comes standard from the factory without the flow-restrictor disc installed. If it becomes necessary to reduce the DCW flow to the heat exchanger to ensure the DHW does not exceed the heat exchanger limits, a flow-restrictor disc can be installed.

The disc is located in the "S-connection" between the cold-water connection of the proportional control valve and the cold-water strainer (refer to callout **8** in **Figure 3-1**). Note that using this disc is optional and will increase the pressure drop and lower the flow of DHW when used.

Refer to **Figures 4-8** and **4-9** along with the steps below to install the flow-restrictor disc.

Important! The AquaPort comes with the correct flow-restrictor disc for the model.
- **Blue** disc is for the XP0300100.
- **Black** disc is for the XP0525185.

Figure 4-8: Black and blue flow-restrictor discs

Refer to **Figure 4-9** and the steps below to install the flow-restrictor disc.

1. Remove the "S" bend section below the proportional control valve.
2. Remove the flow-restrictor gasket.
3. Snap the flow-restrictor disc into the flow-restrictor holder (note the direction of the flow-restrictor disc).
4. Install the flow-restrictor holder with the flow-restrictor disc below the proportional control valve.
5. Reinstall the "S" bend section below the proportional control valve.
6. Record the installation of the flow-restrictor disc into the Installation Record for the device (see **Figure 4-10** on following page).

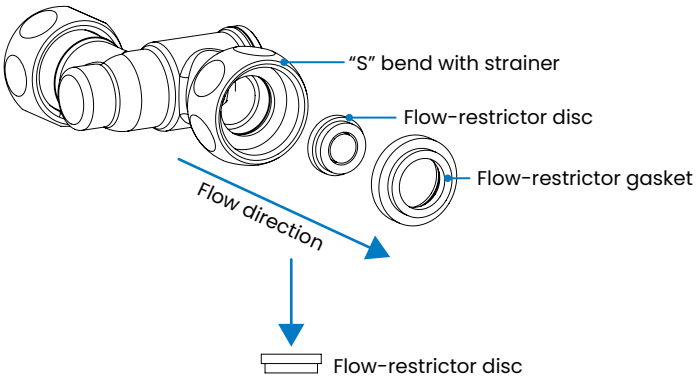


Figure 4-9: Installing the flow-restrictor disc

Filling the AquaPort

Filling the hydronic loop

Caution: Take care when opening service valves as the water temperature may cause injury.

Before filling the unit, thoroughly flush the entire heating system and the domestic heating system. Also, to properly purge the hydronic side of the heat exchanger, open the hot-water fixture(s) and ensure water is flowing (temperature independent).

1. Connect a suitable fill device to the inlet valve drain/fill connections on the hot-water supply line. **Note:** The heating system pressure and fill can be used for purging, if available.
2. Connect a suitable drain device to the outlet drain/fill connection on the hot-water return line.
3. Fill the device. Let the hydronic water run (or purge) out of the device and into a suitable container or available drain.
4. Close the hydronic return valve, and open the other fill and drain valve.
5. While water is flowing through the device, open the vent located at the top of the hydronic loop.
6. Continue to run water through the device until the vent stops releasing air and a solid stream of water flows from the vent.
7. Open the hot-water side of the fixtures that the AquaPort supplies.
   Important! The proportional control valve will NOT allow hydronic heating water to flow through the heat exchanger without DHW flow.
8. Once all air is eliminated and there is a solid stream of fluid with no air bubbles, close all vents and drain valves and pressurize to system operating pressure.

Filling the domestic loop

Open the hot and cold fixtures and devices and allow water to flow to vent off any trapped air. Close all fixtures once the air is vented and a clear, solid stream of water is present.

Important! Uponor recommends removing and cleaning the strainers after cleaning and flushing the heating system and prior to starting normal operation.

Installation record

Uponor recommends documenting installation details and any adjustments needed to deliver the performance required. Refer to **Figure 4-10** to record the AquaPort installation data and settings.

Note: This table is included as a label on the inside cover of the AquaPort for recording installation settings.

AquaPort installation data and settings

Date:

Model: Ⓐ XP0300100 Ⓐ XP0525180 | Serial number:

Component settings									Setting range	Factory default	Installed setting
Temperature bypass valve – see **Figure 3-1** 5									95 - 140°F 35 - 60°C	113°F 45°C	
Hydronic flow regulator – see **Figure 3-1** 4									0 - 20 turns	10 turns	
DHW controller – see **Figure 3-1** 6									Dial settings 1 - 8 95 - 158°F 35 - 70°C	Dial setting 6 140°F 60°C	
Dial setting	1	2	3	4	5	6	7	8			
Water temp.	95°F 35°C	104°F 40°C	113°F 45°C	122°F 50°C	131°F 55°C	140°F 60°C	149°F 65°C	158°F 70°C			
Flow-restrictor disc – see **Figure 3-1** 8									Blue disc (XP0300100)	Not installed	
									Black disc (XP0525180)		

Installer's signature | Printed name | Company name

Figure 4-10: AquaPort installation data and settings

Chapter 5

Environmental operating conditions

Water analysis and water quality

Uponor recommends a water analysis because corrosion is a very complex process influenced by many different components.

Corrosion

The soldered-plate heat exchanger features embossed stainless-steel plates, and the heat exchangers in the heat-interface units feature copper-brazed stainless-steel plates. Before using this product, the building services engineer or the installation contractor must address corrosion protection and scale formation according to local, state, and national regulations, in addition to considerations from the current drinking-water analysis.

This includes:

- Material selection
- Consideration of corrosion-related change in drinking-water quality
- Implementation of the installation
- Consideration of the expected operating conditions
- Refer to **Table 5-1** for the maximum limit requirements for water constituents and characteristic values.

Notes

- Sulfates and nitrates are inhibitors for pitting corrosion caused by chlorides in pH-neutral environments.
- In general, a low-pH value (below 6) increases corrosion risk; a high-pH value (above 7.5) decreases the corrosion risk.
- Ferric ion (FE_3^+) and manganese (IV) ion (Mn_4^+) are strong oxidants and may increase the risk for localized corrosion on stainless steel.
- Silicon dioxide (SiO_2) above 150 ppm increases the risk of scaling.
- Electrical conductivity of more than 500 µS/cm might cause corrosion on copper materials, possibly damaging the copper solder in the heat exchangers.

Disinfection strategies

Any disinfection strategies for the AquaPorts should stay within the values in **Table 5-1** and not exceed the maximum temperature ratings of the unit.

When performing disinfection strategies on the building's piping network, it is important to follow the manufacturer's recommendations for each material in the domestic water and hydronic heating system. It remains the responsibility of the facility manager, water-management contractor, and end user to maintain system health and to ensure compatibility and effectiveness of the disinfection treatment with the entirety of the materials in the system. For questions, contact Uponor Technical Services prior to initiating any disinfection procedures.

Acceptable operational water quality values			
Ingredient	**Value**	**Unit**	**Exposure time limit**
Alkalinity bicarbonate (HCO_3)	70-300	mg/l or ppm	-
Sulfate (SO_4^{2-})	< 70	mg/l or ppm	-
Bicarbonate (HCO_3–)/sulfate (SO_4^{2-})	> 1	mg/l or ppm	-
Electrical conductivity	10-500	µS/cm	-
pH	7.5 - 9.0	mg/l or ppm	-
Ammonium (NH_4^+)	< 2	mg/l or ppm	< 24 h
Chlorides (Cl^-)	< 100	mg/l or ppm	-
Free chlorine (Cl_2)	< 1	mg/l or ppm	Within 5 hrs.
Hydrogen sulfide (H_2S)	< 0.05	mg/l or ppm	-
Free (aggressive) carbon dioxide (CO_2)	< 5	mg/l or ppm	-
Degree of general hardness (°dH)	4.0-8.5	°dH	-
1°dh = 21.8 mg/l HCO_3 (hydrogen carbonate)	87.2-185.3	mg/l	-
Nitrate (NO_3^-)	< 100	mg/l or ppm	-
Iron (Fe)	< 0.2	mg/l or ppm	-
Aluminum (Al)	< 0.2	mg/l or ppm	-
Manganese (Mn)	< 0.1	mg/l or ppm	-

Table 5-1: Acceptable operational water quality values

Chapter 6

Troubleshooting

Refer to the table below for troubleshooting guidelines.

Issue	Cause	Solution
	Boiler	
DHW delivery	Buffer tank temperature too low	Buffer tank temperature must be 10-20°F (5-10°C) above hot-water setpoint.
	Hydronic loop pump setting not correct	Adjust hydronic loop pump to deliver constant pressure
	Pump capacity too low	Check pump capacity
	Hydronic loop control (e.g., modulating valve, etc.) function incorrect	Adjust hydronic loop control settings or logic
	Adjustment hydronic loop control defective	Check hydronic loop control settings or logic
	Air in the buffer tank	Vent or purge the buffer tank
	Cold-water pressure too high or low	Ensure cold-water pressure at AquaPort min. 29 psi (2 bar); max. 59 psi (4 bar)
	Uponor AquaPort	
Warm water temperature too low or alternating	Dirt trap in primary flow pipe dirty	• Clean dirt trap in primary flow pipe • Clean dirt trap in cold-water inlet
	Hydronic flow too low	Use the hydronic flow regulator to increase hydronic flow
	Air in the system	Vent the system while fixture(s) are open and flowing
	Too little heating flow rate flows through the heat exchanger	Check flow rate using a heat flow meter with all hot-water fixtures open and flowing
	Heat exchanger is dirty or plugged	Replace AquaPort
	DHW controller setting too low or not functioning properly	• Check DHW controller setting and adjust • Replace AquaPort if adjustment does not remedy the issue
	Proportional control valve not functioning properly	Replace AquaPort
Wait time for hot water too long	Temperature setting on temperature bypass valve too low	Increase setting on temperature bypass valve
	Capillary pipe on temperature bypass valve plugged	Replace AquaPort
	Noise	
Noise in AquaPort	Pipe clamps are over tightened	Loosen pipe clamps
Whistling while DCW running	Cold-water strainer clogged	Clean strainer
	Flow-restrictor disc obstructed	Clean flow-restrictor disc
Noise from proportional control valve	Noise from proportional control valve	Replace AquaPort

Table 6-1: Troubleshooting guidelines

Chapter 7

Maintenance

Uponor recommends the following minimum maintenance schedule to ensure high performance and efficiency.

Maintenance	Schedule
Cycle shutoff valves (close/open) **Figure 3-1** 9	Biannually
Clean strainers – **Figure 3-1** 3	Annually
Inspect proportional control valve for leakage at inspection ports **Figure 3-1** 2	Annually

Table 7-1: Maintenance schedule

Service parts

Uponor recommends stocking or storing a number of units for quick replacement, if an issue arises. To replace, simply close the internal valves, loosen the swivel connections on the valve, and remove the four 10 mm nuts that attach the main components to the cabinet.

Note that if an AquaPort needs replacement within the warranty period, return the damaged or faulty unit (without the cabinet, cover, and frame) to Uponor for repair or replacement through the **Return Materials Authorization (RMA)** process.

Warranty information

Subject to the terms and conditions of this **Limited Warranty ("Warranty")**, Uponor, Inc. ("Uponor") warrants to the owner of the applicable real property in the United States that the Uponor AquaPort ("Product") shall be free from defects in material and workmanship, under normal conditions of use and normal operating conditions.

Term

The Uponor AquaPort warranty shall commence on the date the product was delivered to the end user for installation. The term for the products listed in the product category column below will be in effect for the number of years shown in the warranty term column below.

Product category	Affected products	Warranty term
Stationary parts	Heat exchanger, pipe, and compression fitting connections	10 years
Moving parts	Air vents, DHW controller, proportional control valve, hydronic flow regulator, temperature bypass valve, isolation valves, and purge drain	2 years

Table 7-2: Warranty terms

Appendix A

Technical specifications

Domestic-water fitting material	CW 724 R, C69300
Hydronic fitting material	CW 617 N, C37700
Double-wall heat exchanger	Plates stainless steel ANSI 316, brazed seam copper 99.9%
Piping	Stainless steel 1.4101/ANSI 316
Shutoff valves	CW 511 L, C27453
Proportional control valve	ASSE LEC 2010, NSF 61

XP0300100 performance (nominal)

Temperature at entry hydronic	140°F/60°C
Temperature at entry domestic	50°F/10°C
Temperature at outlet hydronic	77°F/25°C
Temperature at outlet domestic	120°F/49°C
Flow hydronic	3.4 gpm/12.9 l/min
Flow domestic	3.0 gpm/11.4 l/min

XP0525180 performance (nominal)

Temperature at entry hydronic	140°F/60°C
Temperature at entry domestic	50°F/10°C
Temperature at outlet hydronic	75°F/24°C
Temperature at outlet domestic	122°F/50°C
Flow hydronic	5.95 gpm/ 22.5 l/min
Flow domestic	5.25 gpm/19.9 l/min

Maximum operational pressure

Tap water side	125 psi/8.6 bar
Hydronic side	125 psi/8.6 bar
Maximum operation temperature	180°F/82°C
Connection	(4) ¾" FNPT
XP0300100 weight including in-wall cabinet	47 lbs./21.3 kg
XP0525180 weight including in-wall cabinet	61.5 lbs./27.9 kg

Table A-1: Specifications

Lime precipitation in the water

Lime precipitation									
Temp. °F	50	68	86	104	122	140	158	176	194
Temp. °C	10	20	30	40	50	60	70	80	90
Limescale deposition %	0	0.59	1.18	2.94	11.76	29.41	47.06	76.47	100

Figure A-1: Lime precipitation in the water, depending on the temperature

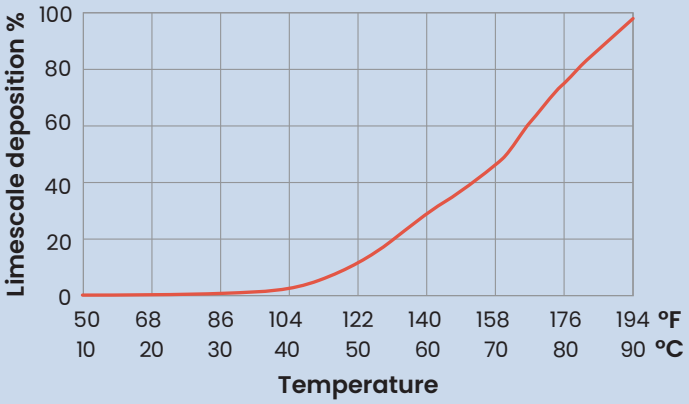
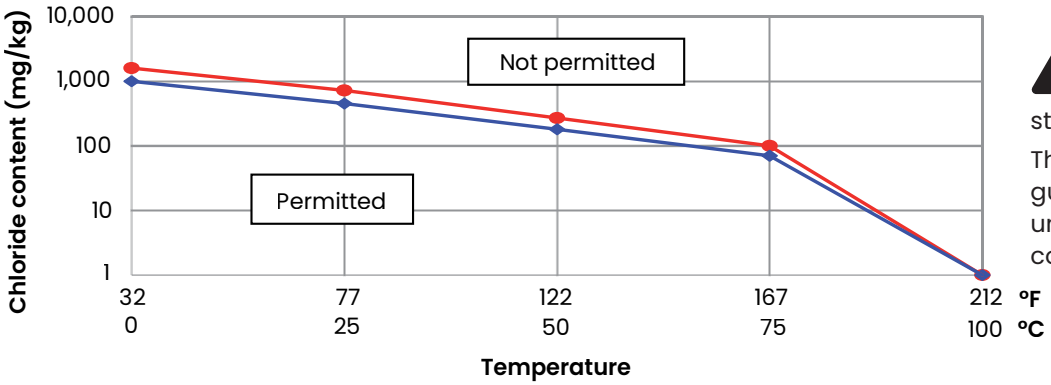


Figure A-2: Limescale deposition as water heats up

Limit values in chlorine content with stainless steel



Caution These also apply to pipelines in the units and other stainless-steel components.

The stated values are guidelines that may differ under certain operating conditions.

Figure A-3: Permissible chlorine content, depending on the temperature (1.4404/SA240 316L)

Hydronic flow regulator settings

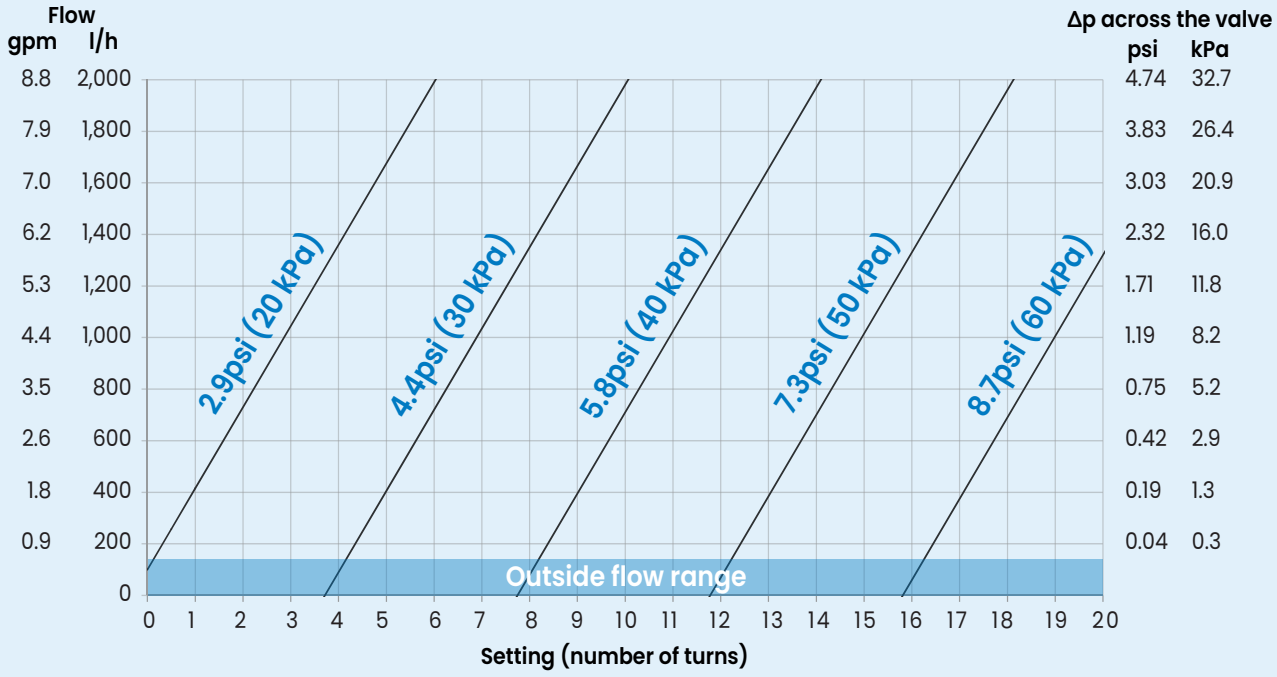


Figure A-4: Hydronic flow regulator settings chart

Moving
> Water

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