



PERMATECH

Sustainable Water Solutions

WATER FILTRATION SYSTEM (USF3)

OWNER'S MANUAL



INTRODUCTION

Congratulations on choosing Permotech to improve the quality of your water. You will immediately begin to notice the numerous benefits of having quality water in your home and the benefits of having Permotech water treatment system.

This system uses household water pressure. Water under pressure is forced through filtration steps where impurities are filtered out. Clean drinking water goes to the faucet, while the impurities remain on filter cartridges. These impurities are measured in water as Total Dissolved Solids (TDS).

The system includes innovative and patented replaceable cartridges. The cartridges remove sediment and chlorine from the water, improve taste and reduce odours depending on the type of the filters you've selected.

This Filtration System will provide you with a continuous supply of delicious water for drinking, cooking and other uses. Foods will look and taste better too. Having high quality water at hand eliminates the need to buy bottled water.

IMPORTANT SYMBOLS !



Symbol for places and activities, which should be paid special attention.



Symbol for the unconditional need to observe activities for security reasons or due to the occurrence of danger damage.



The reference to other places in the manual, which discussed the function is described in more detail.



These chapters are designed primarily for installation and service.

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1. BEFORE YOU INSTALL USF3 FILTRATION SYSTEM



CAUTION: A refrigerator icemaker may not operate properly when connected to a filter system that has been installed on a water system which operates outside of the specified pressures listed on page 5.



CHECK YOUR WATER SUPPLY: The COLD water supply to the filter system must be within certain quality limits. See the specifications on page 5. If the supply water is **not within** the limits defined, the filter system will produce water as it should and substantially reduced filter life will result.

2. SAFETY CONDITIONS



Read all steps and guides carefully before installing and using the filter. Follow all steps closely to install correctly. Reading this manual will also help you get all the benefits from your filter.



DO NOT attempt to use this product to make safe drinking water from non-potable water sources. Do not use the system on microbiologically unsafe water, or water of unknown quality without adequate disinfection before or after the system.



Check with your local public works department for plumbing and sanitation codes. You must follow their guides when you install the system. Follow your local codes if they differ with guides in this manual.



This filter system works on water pressure of 1,2 bar (17 psi) (minimum) to 6 bar (87 psi) (maximum). You must install a pressure reducing valve in the water supply pipe to the filter system if the water pressure exceeds 6 bar (87 psi).



DO NOT install this filter system outdoors or in extreme hot or cold environments. Temperature of the feed water supply to the system must be between 2° C and 38° C.
Do not install on hot water.

3. HOW YOUR FILTER SYSTEM WORKS?

Connection scheme and the list of parts of the filtration system are on page 11.

Sediment cartridge – STAGE 1

Sediment cartridge removes mechanical impurities such as: sand, rust, pollen and other sediments.

Activated carbon cartridge – STAGE 2

Activated carbon cartridge use the ability to absorb chemical pollutants in the activated carbon. Used for improving the quality of drinking water. Water flows through the entire filter bed for maximum absorption of pollutants. Activated carbon cartridge improve the taste and smell of water, reducing organic impurities, chlorine and its poisonous derivatives, eliminate lead and other toxic heavy metals.

Ultrafiltration Cartridge – STAGE 3

Structure ensures very effective removal of most mechanical impurities, colloids and any compounds which cause water colour and turbidity above 0,05 micrometers.

4. SYSTEM SPECIFICATION

Feed water pressure limits	2,2 – 4,0 bar
Feed water temperature limits	2 – 38 °C
Maximum total dissolved solids (TDS)	1500 ppm (*)
Feed water pH limits	2 - 11

(*) Maximum levels:

- water hardness < 17 mg CaCO₃
- turbidity < 1NTU
- SDI index <5
- Fe < 0,01 mg/l
- Mn < 0,05 mg/l
- Si < 25 mg/l

5. WHERE CAN FILTER SYSTEM BE INSTALLED?

This filter system is designed for installation under the sink, usually in the kitchen or bathroom. The filter system can be mounted on a wall surface or can lie on the cabinet floor. System faucet is installed on the sink, into the counter next to the sink or in the special bracket on the wall.

You can also install the system in any remote location from the faucet, observing the safety guides on page 4. You will need a nearby water supply point.

Water supply: To provide supply water to the filter system, use the included feed supply fittings as described on page 7.



NOTE: Tubing lengths supplied with the system allow for easy moving of the filter assembly for servicing. If tubing lengths are shortened for a neater appearance, it may be necessary to keep the filter assembly in its installed location for service. Please keep connecting tubes as long as possible for convenient usage.

5.1 CHECK LIST:

1. Filter UPS 3.1
2. One piece tubing – 6 meters
3. Installation manual
4. Drain saddle valve
5. Brass water feeder with valve
6. Faucet with accessories
7. Teflon tape

5.2 REQUIRED TOOLS AND MATERIALS:

1. Variable speed drill
2. Ø 4, Ø 6, Ø 10, Ø 13 drill bit
3. 17, 24, 32 open-end wrench, or adjustable wrench, pliers
4. Screwdriver
5. Utility knife or scisso

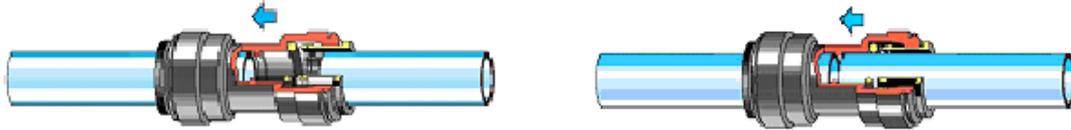


IMPORTANT NOTE: Before you proceed with installation please check general connection scheme for your model of water filter, on the last pages of this manual.

6. IMPORTANT INSTALLATION NOTES

Filter System uses Quick Connection type style fittings. These fittings only require you to simply push the tubing firmly into each fitting.

6.1 Connecting standard the QC push-in fittings

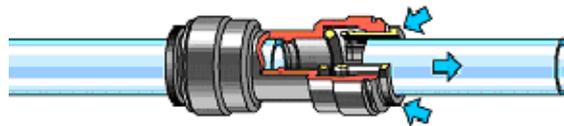


1. Remove yellow locking clip from the fitting.
2. Push the pipe into the fitting, until you feel resistance. The collet (gripper) has stainless steel teeth which hold the pipe firmly in position whilst the o-ring provides a permanent leak-proof seal. Pull on the pipe to check whether it is secured. It is a good practice to test the system prior to leaving the site and/or before use.
3. Place the yellow locking clip back to lock the pipe and prevent it from accidental slip-out.

6.2 Disconnecting standard the QC push-in fittings

Make sure that the system is depressurized before removing fittings.

1. If present, remove locking clip from the fitting.



2. Push in the collet against the face of the fitting. With the collet held in this position the pipe can be removed. The fitting can then be re-used.

7. SYSTEM INSTALLATION

7.1 STEP 1: INSTALLATION AT COLD WATER INLET

7.1.1 Water feeder 1/2" – installation at water inlet

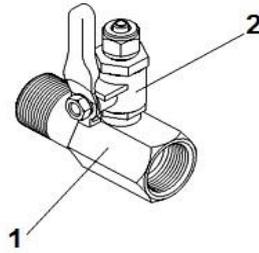


CAUTION: The water supply to your filter unit **MUST** be from a **COLD** water line.

Hot water will severely damage your filter system.

Water feeder connection set

(1 - connector element 1/2" , 2 – ball valve)



1. Locate cold water shut off valve under the sink (if the feeder is installed after this valve) or main shut off valve (if the feeder is installed before under sink shut off valve, as shown on scheme) and turn it off. Open cold water faucet to release the pressure, and make sure there is no water running.
2. Untighten compression nut or under sink shut off valve. Then put supplied gasket and install connector element. Tighten firmly.
3. Take the ball valve and use teflon tape for sealing while mounting it on the connector element.
4. Finally connect the supplied line or under sink shut off valve back to the Connector Element. Turn the ball valve handle to close position, open main or cold water shut off valve and check for any leakages.
5. Use teflon tape for sealing the threaded ends.
6. Connect ball valve with your filter system with 1/4" elastic tube.

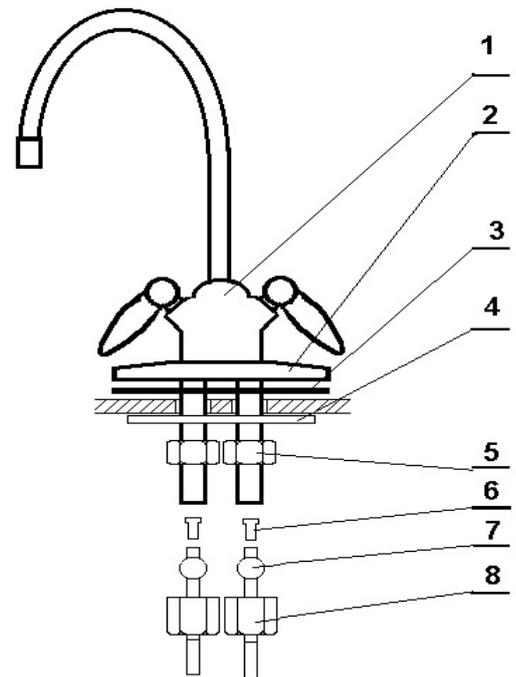
7.2 STEP 2: INSTALLING THE FAUCET

The faucet should be positioned with aesthetics, function and convenience in mind. A sample flat surface is required for the faucet base so that it can be installed firmly. Also, check the under sink area of the desired location to see if there is enough space to complete the faucet installation.

If the space is not available on the upper sink area, the faucet could be positioned on the counter top at the edge of the sink. Be sure to watch for obstructions below, i.e., drawers, cabinet walls, support braces, etc. If the counter top is made of ceramic tile, the method for drilling the holes should be the same as for porcelain sink.



NOTE: The sink drilling process, although not complicated, requires a certain amount of caution and forethought. A porcelain sink can crack if care is not exercised.



- 1 - faucet
- 2 - chrome cover plate
- 3 - rubber gasket
- 4 - plastic washer
- 5 - metal washer
- 6 - nut
- 7 - collet
- 8 - tube fastening nut

7.2.1 DRILLING HOLE IN A PORCELAIN ENAMEL/ STAINLESS STEEL/ALUMINIUM SINK

Porcelain enamel sink / stainless steel sink / aluminium sink

A Ø 13mm hole is required for the faucet. It is recommended that you obtain a special ceramic drill bit for a porcelain and/or tile sink/counter. When drilling the faucet hole for the sink/counter, you should wear eye protection and exercise caution by following the below steps carefully.

1. Place a piece of masking tape or duct tape on the determined location where the hole is to be drilled.
2. Use a variable speed drill at slow speed with Ø 6mm drill bit, and drill a centering hole in the center of the desired faucet location. Use lubricating oil to keep the drill bit cool while drilling.
3. Enlarge the hole using a Ø 10mm drill bit.
4. Enlarge the hole using Ø 13mm drill bit. Keep bit well oiled and cool, then drill slowly.
5. File or clean the surrounding area and then remove the masking or duct tape. (**NOTE:** the metal chips on porcelain will stain very fast).
6. Pass the chrome cover plate and rubber washer according to the picture through the threaded mounting tube at the base of the faucet.
7. Under the sink, install the white plastic locating washer, small metal washer and screw on the nut until it is tight against the underside of the sink/ counter.
8. With all fittings in place, thread the Tube Fastening Nut and Collet, insert the tubing into the faucet inlet and tighten the nut.
9. Connect the other free ends of the 1/4" tubing according to schemes on page 11.

7.3 STEP 3: PRESSURE TESTING AND PURGING

1. Check all tubing to be sure there are no kinked.
2. Turn the Storage Tank Valve to OFF position.
3. Turn RO faucet lever to continuous flow ON position (handle pointed up).
4. Turn the cold water supply main valve on slowly. When the system is pressurized, check for leaks.
5. You will hear the air purging from the system and within 5 minutes, the water should start dripping from RO faucet. Once the water starts to drip, allow 20 more minutes for the water to flow through the system and purge all the air trapped inside the system.
6. After 10 minutes, turn the Storage Tank Valve to the ON position (handel is parallel to the tubing).
7. Turn the RO faucet handle to the OFF position. Now the purified water will start going into the storage tank.



CAUTION: You must purge the first two tanks of water from the system prior to consumption of the product water. **Do not drink the first 2 tanks** of water produced by the system!

8. Allow the storage tank to fill for 2 hours. Then open the faucet until the tank is empty and the flow just drips from the faucet.
9. Close the faucet and allow the storage tank to fill again for 2 hours. Then open the RO faucet and empty the tank again. After discharging the contents of the Storage Tank twice, you can start enjoying the pure water.



NOTE: Check for leaks daily for the first week after installaion.

8. SYSTEM CARE AND MAINTENANCE

8.1 FILTER CARTRIDGES CHANGE

To change the prefilter cartridge, follow these instructions:

 **CAUTION:** Any Replacement filters not recommended by the producer can cause severe damage to the system and void all warranties.

1. Shut off the feed water supply to the system by turning the saddle valve or cold water faucet valve on the water supply clockwise until it stops.
2. Press down on the faucet handle to release pressure and put faucet into OPEN position.
3. Allow few seconds for pressure in the system to drop.
4. Turn the cartridge counterclockwise to loosen it and remove the cartridge from the head (cap). Be careful as the cartridges are filled with water.
5. Unpack new cartridges from protection foil and line up the new cartridge with the center of the head.
6. Turn the cartridge clockwise to tighten it.

 **CAUTION:** Rinse the new cartridge for about 5 minutes before usage.

 **CAUTION:** A higher frequency of filter changes may be necessary, depending on your feed water quality. You should inspect the filters periodically and maintain a service record to establish a maintenance schedule that is tailored to your water conditions.

Filter cartridges exchange: every 3 to 6 months.

9. TROUBLE SHOOTING



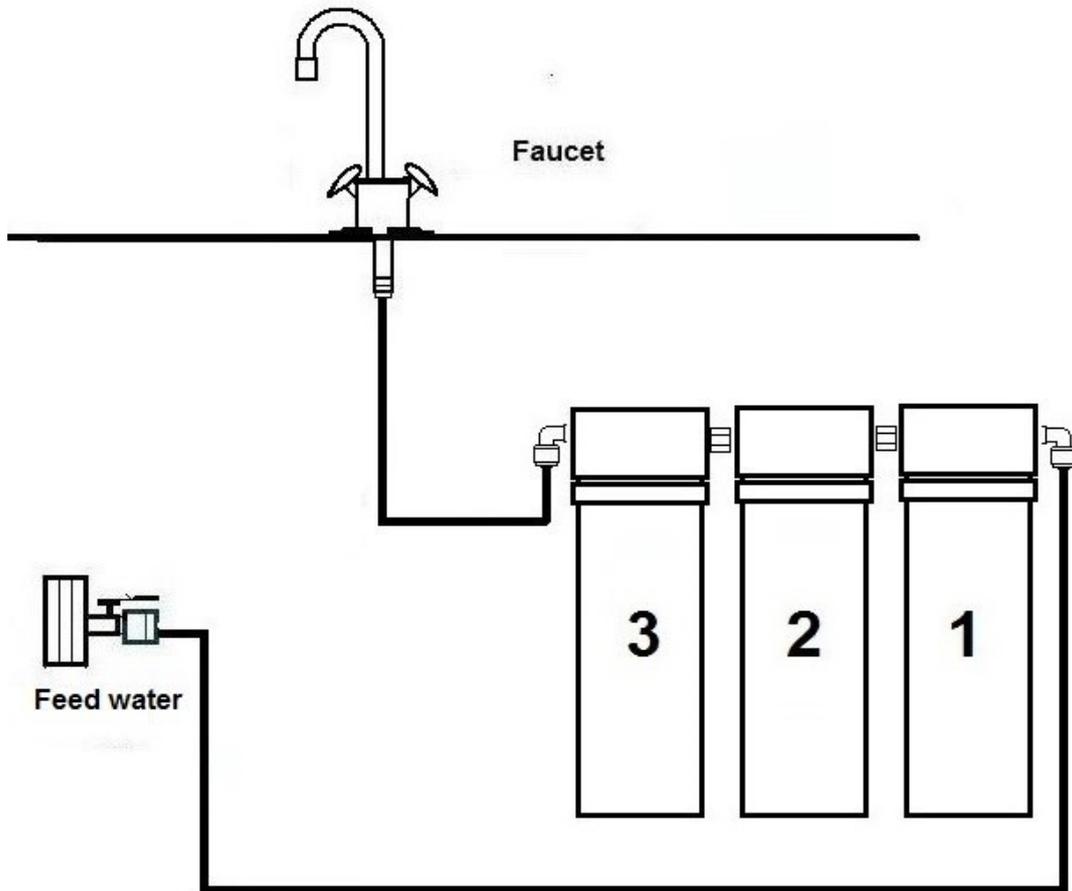
CAUTION: Regularly (eg. Once per month) check your TDS* level of feed water and purified water. Results will keep you updated about the filtration efficiency and the filters condition.

*TDS (Total Dissolved Solids) – total content of substances dissolved in water measured in ppm (parts per milion =mg/l)

Please check selected cases for general solution ideas:

PROBLEM	CAUSE	SOLUTION
Taste and/or smell of chlorine in clean water	Filter does not work – does not remove chlorine from feed water.	Exchange the carbon filter and/or all filters.
Changed smell and taste of clean water	Used filters.	Exchange the carbon filter and/or all filters.
Low system capacity	Filters clogged with sediments. Feed water does not comply with the standard requirements.	Exchange sediment filters and/or all filters. If the capacity does not improve increase water pressure.

10. CONNECTION SCHEME



1. Sediment cartridge
2. Activated carbon cartridge
3. Ultrafiltration cartridge