

GT1-3MK
Undersink Water Filter

FSA
FILTER SYSTEMS AUSTRALIA

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Technical Overview

I. Important Notes

For correct operation of this appliance, it is essential to observe the manufacturer's instructions. Installation must be carried out by a qualified plumber or authorised technician to comply with Australian Plumbing Codes. This RO system is certified to WaterMark Standards AS/NZS 3497 Under the Certificate number 23247. WaterMark certification is the level of certification required by law for a licensed plumber in Australia to install a water filter system.

You will find <u>most</u> answers to your queries can be found in this instruction manual – please thoroughly read through this manual from front to back including the troubleshooting page <u>before</u> contacting customer support.

II. Before You Purchase/Open

The system requires specific working conditions to be met before installation, some of which are listed below. If these conditions are not met, the system may not be suitable for the application and may not function as specified.

These systems are designed for use in home applications on Main Water or Tank Water. For applications where raw water supplies are used (E.g. Bore, Dam, Creek) please contact the manufacture for technical assistance to determine if your application is suitable for these systems.

Feed Water Conditions	**Min**	**Max**
Inlet Pressure	175 kPa	700 kPa
Temperature	4.5°C	38°C
pH Level	2	11
TDS	0 mg/L	2,000 mg/L
Iron	0 mg/L	0.3 mg/L
Manganese	0 mg/L	0.1 mg/L
Hardness	0 mg/L	200 mg/L

III. Space Requirements

System Dimensions (Approx)

Height: 35cm
Width: 13cm
Depth: 13cm

IV. Before You Begin Installation

All components that come pre-assembled will need to be thoroughly checked before installation. Due to transit, fittings and other components may be loosened or unseated – ensure fittings, tubing and filters are inspected before continuing.

V. What is Standard Filtration

Standard Filtration generally refers to systems designed to remove dirt/sediment & chemicals (such as chlorine) from drinking water. These systems are NOT designed to remove Fluoride or other dissolved salts or minerals from water. These units are generally simple to install and run and have a lower cost to maintain. They help improve the taste of the water whilst removing common impurities.

Installation Introduction

I. Working with Quick Connect Fittings





If you come across a push-fit fitting, you need to firmly push the tubing into the opening until you feel a “click” which signifies that the tubing has pushed through the internal O-ring and is seated correctly. If leaking occurs, it may be due to roughly cut tubing OR the tubing is not pushed in far enough. To remove tubing from push-fit fittings, depress the floating collet (shown to the right), then pull the tubing out.

II. Flushing

Laws and regulations prevent us from wet-testing these filtration systems prior to sending them out. Therefore, during assembly of these systems they are not pressure tested so it is possible to have a small leak in a connection (which is simply fixed by re-seating the tubing or tightening a fitting). As the filters are dry packed, the systems will require flushing before first use.

Installing Connections

I. Feed Water Connection



Using the supplied Dual Check Valve (Pictured right), Locate the connection between the kitchen tap & cold-water line (Usually a flex line). Shut off the incoming water and bleed pressure from the line by opening the kitchen tap. Disconnect the flex line from the cold-water inlet and install the Dual Check Valve in between. Install the ½” Female x 3/8” Tube Adaptor (GT10-30-DM) onto the Male Thread of the Dual Check Valve firmly. This will be referred to as the “Feed Water Adaptor” or ‘FWA’. If your Undersink does not have a tap/valve (for example copper lines coming straight from the wall) it is advised that you install an inline 3/8” ball valve (not supplied) after the FWA so you can isolate the system without shutting off the mains. DO NOT apply thread tape to these connections as they are designed to use the washers only.

II. Assembling the System (Photos Below)



1. Unscrew the vertical filter housings and unwrap the internal cartridges – maintain minimal contact with the surface of the carbon filter, handle by the end caps only to avoid contamination.
   The filters should go in order of Pleated → Spun → Carbon from the highest micron rating (E.g. 20uM) to lowest (E.g. 0.5uM). The default flow rate is from Left to Right – Please check housings for flow direction markings usually labelled or printed on the head caps.
   (Photos Shown are for visual only – your system may slightly differ)



2. Screw up the housings while they are in a vertical position to ensure the cartridges remain cantered until you begin to feel resistance. (if you gently shake the housing you should not be able to feel/hear the cartridge rattle inside. Hand tightening these housings is generally enough to seal them due to the dual tapered o-ring seal of the housings. Only use the opening spanner if the housings need to be tightened further to avoid leaks. DO NOT over tighten the housings – doing so causes stress on the caps and may cause a split or crack causing potential flooding.
   NOTE: The rim of the housing and the cap should not be touching – this is too tight. The gap should be approx. 3 mm – 4 mm between the cap and the rim of the housing.

You are now ready to connect the system.

Connecting the System

I. Tubing

Measure a length of white tubing (Inlet Tubing) to be installed between the FWA and the 'Inlet' port on the filter system. Cut using a sharp Box Cutter knife or tube cutters. When connecting to the system refer to the 'Quick Connect Fitting' Instructions.
Measure a length of white tubing to go between the final stage filter & the flex line for the kitchen faucet.

II. Fitting

Most installations involve a flex line that will connect the kitchen tap to the system. An adaptor fitting ½" Male x 3/8" Tube (GT10-79LS) is supplied with this kit & is installed on the end of the flex line. This will adapt the flex line to the filtration tubing.

System Start Up & Operation

I. Plumber Commissioning Steps

When you are confident that the system is correctly installed, do the following steps to start up the system and commence the flushing procedure.

1. Open the faucet tap – This helps bleed air from the system when you introduce the feed water.
2. Smoothly turn the water back on at the FWV allowing water to enter the system, it is common to hear and see sputtering as the water makes its way through the system forcing out the air.
   NOTE: Check for any leaks, if there are leaks, shut off the water, fix them and continue.
3. When the water first comes out of the tap, it will be grey and discoloured – this is normal as the carbon fines are flushed out of the dry filters.
   NOTE: Air bubbles are also common in the water – it gives the water a 'milky' appearance. This will eventually dissipate as the air is flushed from the system – this can sometimes take a few days to stop completely. The water is still safe to drink.
4. Continue flushing the filter for 5 to 10 minutes or until the water runs clear. The main aim is to ensure there are no particulate in the water (air bubbles are ok). To test if the cloudiness is only air, pour into a clear glass and let it sit for 60 seconds – the water should turn clear without any debris.
5. While the filter is new, there may be some slight taste issues with the water (such as a metallic or 'chemical like' taste. This is normal and is the reaction that activated carbon has with water when the filters are new. Flushing the filters will help reduce the time until the water is back to normal taste. The metallic taste is usually due to the high pH that is created due to this reaction, it is only temporary and is usually gone within 1 week from installation if not sooner.

II. Turning the System On/Off

If for any reason the system needs to be turned off – for example if leaking occurs or you are going away for over 48 hrs, follow the below steps to shut down the system.

1. Turn off the water under the sink using the cold water shut off valve or the inline valve.
2. Briefly open the kitchen tap to bleed out excess line pressure and then close it again.

To start the system, open the Feed Water Valve. If the system has not been used for over 48 hrs – discard the first 30 seconds of water. If the system has been shut down for over 1 week – flush the system for 1 minute.

Maintenance

I. Replacement Parts

Filtration tubing should be replaced periodically (about every 3 – 5 years). There is no specific time. Fittings should be replaced every 3 – 5 years due to wear & tear.

We suggest replacing the Pressure Limiting Valve every 2 years.

II. Replacement Cartridges

Cartridges have a varying life span but generally can be replaced under the following guidelines under normal working conditions; For clean water supplies (commonly found in Metro locations on the E & SE

coast of Australia the filters should generally last up to 12 months. For harsher water conditions commonly found in rural areas or the North, West and South parts of Australia, filters should be changed every 6 months. NOTE: Usage will also be a factor for filter changes – if your pressure begins to slow down through the filters it can be an indication that the filters are blocking and may be due for a replacement.

III. Testing Filters

Simple Free Chlorine testing can be done after the filters to determine if the filters are still removing chlorine adequately from your drinking water. These types of tests are generally inexpensive however for best results, lab tests are recommended. The filters we use for our Undersink Systems are generally high in volume capacity so you will usually either end up with a blocked filter (from sediment) or at the 12-month mark. You will not normally get to a point that the filter will no longer remove chlorine*

Troubleshooting

Problem	Possible Cause(s)	Solution
Leaking between fitting & tubing	Unseated Tube	Check all tubing connections by firmly pushing them into the fitting. Check that there are no kinks or any obvious issues. If the problem persists, remove the tubing and check for a clean cut with no burs. Push the tubing back in and try again. If this does not work please contact customer support.
Leaking from Feed Water Valve	1. Damaged or Missing Washer 2.Thread is too Short	1. Check the valve to see if the washer is inside, if it is damaged it may need replacing – this is a common size washer and can be purchased from most hardware/plumbing stores. 2. If you screw the valve on and the collar 'bottom's out' on the tap, you may need to add another washer (to bulk up the space).
The unit is not producing any water?	1. Water Supply is off or disconnected 2. Filter has a blockage 3. Insufficient Water Pressure 4. Water Quality	1. Turn on the water supply and ensure there are no obstructions to the water flow. 2. Individually remove each filter 1 at a time to determine at which point the water is unable to pass. Check to ensure that the filters are installed correctly in a vertical position and that they are unwrapped. 3. Filtration requires water pressure; we suggest a minimum working pressure of 50psi+ for filters less than 5uM 4. Ensure that the water quality is suitable for the selected cartridges. These filters are generally not for filtering harsh water such as dam or river water due to organic loading, clay and silt. Low micron filters also are prone to blocking on water supplies that contain high sediment so ensure the filter has adequate pre-filtration.
High pH Reading	1. Carbon Filter 2. Insufficient Testing Equipment	1. If you have a GAC or Block filter (Carbon), this will naturally increase the pH of the water. pH is the measure of Hydrogen in the water and this hydrogen will vent off the water if you leave it to stand and the pH will then drop back down to the normal level. 2. pH testing equipment can range from a cheap test pen right up to lab grade equipment. Before coming to a conclusion on pH issues, it is best to ensure the equipment used to measure the pH of the filtered water is of high standards and suitable for reading pH levels in lower EC water (i.e. The guy at the pool shop is not going to cut it). We have access to high quality testing equipment and frequently test our units and conduct research. If you feel that there is an issue with your pH, please contact us.
Strange taste to the water (New System)	1. Residue 2. pH Alteration	1. The filters are dry packed, the carbons, alkaline filters will have 'fines' on them. 2. As previously stated, Activated Coconut carbon will react with the water when new and will increase the pH. People who are not accustomed to higher pH water may notice a strange

	3. Contamination	taste/sensation due to the large variance of pH. Flushing the system will help stabilise the pH from the system and also allowing the water to stand before drinking can also help allowing the water to 'vent' the pH 3. Bacterial contamination is highly unlikely, but not impossible. If there is a strong 'foul smell' or organic taste to the water, it is possible that there is some form of contamination. Contact us straight away so we can rectify (or diagnose) the problem if there is one present.
The TDS Is Higher than the inlet water (or the same).	1. New Filter 2. No Effect on Dissolved salts	1. While filters are new, it is normal for the TDS to be elevated while the system is flushing. Continue flushing the system & contact support if the high TDS persists longer than 1 week. 2. Standard filtration has little to no affect at reducing the salts in the water. In some cased the TDS can reduce however it is not uncommon for the TDS to stay the same or slightly rise (as the system in new) due to the fines from the filter.
Flow has suddenly slowed down to a trickle	1. Blocked filters	1. Check the feed water conditions & cartridges and replace the filters if they are passed the recommended change times.

Additional Extras

I. Water Hammer Arrester



Sioux Chief shock arresters are designed for use in hydraulic hammer arresting applications. They are built to reduce or eliminate hydraulic shock, otherwise known as water hammer. They do this by absorbing pressure surges within water or other fluids that are suddenly stopped or forced in other directions by fast closing valves. Sioux Chief shock arresters are best used at the point of shock and should be installed as close to the valve or piping where the shock originates from. Sioux Chief shock arresters are designed with the latest diaphragm technology. A high-grade diaphragm is sealed inside the vessel creating a barrier between fluid and air chambers. The air chamber acts as a cushion which compresses when system pressure suddenly increases or surges as a result of hydraulic shock.

The water hammer arrestor is installed either at your washing machine or your dishwasher inlet.

II. Leak Shut Off Kit

Highly absorbent capsule sits in place under the shut off lever (like a reverse mouse trap).
It quickly absorbs water causing the capsule to expand in an upward direction putting pressure on the shut off valve. When sufficient water has been absorbed, the lever will snap shut, stopping the inlet water flow and saving any possible water damage. (Plastic outer cover needs to be REMOVED).

The Shut off valve should be connected between the FWV and the Filter System inlet.



III. Replacement Parts

Housings

GT8-0S1/2	10” x 2.5” Housing ½” Ports

Replacement Cartridges

GT4-6CTO	10” x 2.5” 1uM Coconut Carbon Block
GT4-4CTOP	10” x 2.5” 0.5uM Premium Coconut Carbon Block

Housing Kits

GT1-3W	10” x 2.5” Twin Undersink System with White Bracket ½” Ports

Pressure Limiting Valve (PLV) – 2 Years or Sooner if Required

GT18-133/8	480 kPa (70 psi) PLV (3/8” Tube)
GT18-133/8-350	350 kPa (50 psi) PLV (3/8” Tube)

O-Rings – Replace Every 2 Years or Sooner if Required

GT23-16	Suit GT8-0S, GT8-0S1/2

Common Fittings – Replace When Required

GT10-79LS	3/8” Tube to ½” Male Straight Fitting
GT10-30LS	3/8” Tube to ½” Female Straight Adaptor
GT10-78LS	3/8” Tube to ½” Male Elbow

Tubing – Replace Every 3-5 Years or as Required

GT20-14GW	3/8” White Water Filtration Tubing

Consumables/Misc

GT44-0	25g Silicone Lubricant
GT21-0	12mm x 0.76mm Thread Tape (10m Roll)
GT26-0	1L HydroSil-ULTRA Water Sanitiser
GT17-0	Opening Spanner Suit Undersink Filter 10” x 2.5”
GT20-0	Tube Cutter Suit ¼” to 12mm Tubing

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WaterMark

Rev. 25/09/2020

FILTER SYSTEMS AUSTRALIA

Standard Undersink Kits

Twin O-Ring Housings

General Warranty

Water Filter Systems[1] (Excluding consumables) Manufactured or Assembled[2] by Filter Systems Australia (FSA) are covered under a 12-month Warranty Against Defects (Manufacturer's Warranty). This warrants the water filter system to be free from defects in material and workmanship for a period of 12 months from date of sale.

If applicable, FSA may cover the return freight in the form of a re-imbursement after the system has been inspected and confirmed it is a valid warranty claim.

FSA will not cover any labour charge incurred by the consumer for the replacement or repair of a product. The warranty is strictly parts only for the parts supplied by FSA. This warranty only applies to the original consumer of the product and is non-transferable. If you have purchased the system through a re-seller, please contact them to facilitate the warranty on your behalf. All replaced or exchanged parts become the property of FSA.

FSA does not cover the workmanship of the plumber who originally installed the system. Responsibility for damages that occur during installation fall with the plumber.

Qualification for Warranty

As per Australian Plumbing Codes, all filter systems must be installed by a qualified plumber. The consumer is responsible for keeping record and proof of installation in the form of an invoice and/or receipt.

Filter systems must be maintained as per FSA recommendations[3] including the use of replacement filters, fittings and components supplied by FSA. Failure to maintain the filtration systems using FSA supplied/approved products may void warranty.

The warranty only applies if the product was used and/or installed in accordance with the user guide and/or installation instructions. This warranty is given in lieu of all other express or implied warranties and manufacturer shall in no circumstance be held liable for damages consequential or otherwise or delays caused or faulty manufacturing except as excluded by law.

Warranties need to be approved by FSA to ensure the product was not incorrectly used, installed or claimed. False and incorrect claims will be pursued at FSA's discretion including chargeable inspection and transit costs incurred.

FSA does not take responsibility for retaining customer records, it is the consumer's responsibility to retain all invoices or proof of purchase from the original sale and ongoing maintenance records as proof of upkeep.

Warranty Exclusions

FSA Standard Warranty shall be void if the product sustains damage or failure resulting from any of the following:

- If your system(s) fails to be maintained in accordance with recommended servicing and as per the manufacturers operating instructions.
- Unauthorised or abnormal use or operation.
- Exposure to unsuitable environmental conditions*.

FSA does not cover the work of the plumber who originally installed the system.

Warranty – Australia

This warranty is given by Filter Systems Australia (Jacknel Pty Ltd ATF The J & N Family Trust). ABN 64 855 305 562 Located at 1/38 Jade Drive, Molendinar QLD 4214. Ph 07 5597 4585 & email info@filtersystemsaustralia.com.au

This warranty is provided in addition to other rights and remedies you have under law. Our products come with guarantees which cannot be excluded under the Consumer Guarantees Act.

Definitions

[1] Water Filter Systems are defined as systems designed for drinking water under our Water filter Systems, Reverse Osmosis Systems & Ultraviolet Sanitation Categories – Excluding Cartridges and Shower Filters.

[2] Other products not manufactured or assembled by FSA are covered under the applicable manufacturer's warranty.

[3] FSA specifies recommended or required filter maintenance – see product information for further details. If a maintenance schedule is not specified, filter maintenance is required at least once per 12 month period.

* Unsuitable environmental conditions include but are not limited to; Excessive hot or cold, Weather extremes.

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Extended Warranty

Filter Systems Australia Undersink Systems are eligible for an extended 4-year warranty (commencing no later than 12 months from sale date), to provide a total warranty of 5 years. This extended warranty is subject to terms and conditions outlined below. This extended warranty covers the below parts of the system.

- GT8-0S Twin O-Ring Housings (1/4" Ports)
- GT8-0S1/2 Twin O-Ring Housings (1/2" Ports)
- GT35-12 ¼" NPT Stainless Steel Centre Joiner OR;
- GT19-8SC ¼" NPT PE Joiner with O-rings
- GT14-14-DM Inlet Feed Water Adaptor

The following components are also eligible for an extended 12-month warranty (commencing no later than 12 months from sale date), to provide a total warranty of 2 years. This extended warranty covers the below parts of the system.

- Faucet Tap Supplied by FSA
- GT18-13 70PSI Pressure Limiting Valve (1/4")
- GT18-133/8 70 PSI Pressure Limiting Valve (3/8")

Extended Warranty Qualification

Extended Warranty is valid only if the following conditions are met:

- The System was installed by a licenced plumber – proof of installation required in the form of a receipt or invoice for works.
- The system was maintained in accordance with our recommendations in Maintenance – Section II. Replacement Cartridges.
    - Cartridges must be purchased through FSA or participating supplier/reseller of FSA products
    - Proof of purchase for replacement filters required.

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[2] Other products not manufactured or assembled by FSA are covered under the applicable manufacturer's warranty.

[3] FSA specifies recommended or required filter maintenance – see product information for further details. If a maintenance schedule is not specified, filter maintenance is required at least once per 12 month period.

* Unsuitable environmental conditions include but are not limited to; Excessive hot or cold, Weather extremes.