

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

Models OF1354-30TM, OF1465-50TM and OF1665-75TM OneFlow® Anti-Scale System

Connection Sizes: 2"

Flow Rates: From 30 gpm to 75 gpm (114 lpm to 284 lpm)

The OneFlow® Anti-Scale System provides protection from scale formation on internal plumbing surfaces. The OneFlow® system may be installed at the point-of-entry to a building to treat both hot** and cold water, or it can be located directly before a water heater, boiler, or other hot water-using device that requires protection from the ill effects of hard water.

OneFlow® prevents scale by transforming dissolved hardness minerals into harmless, inactive microscopic crystal particles, as water travels up through the media. These crystals stay suspended in the water and have a greatly reduced ability to react and attach to surfaces like dissolved hardness does. The system requires very little maintenance, no backwashing, no salt, and no electricity. Typical hardness problems, especially build-up of scale in pipes, water heaters, boilers and on fixtures are no longer a concern.

OneFlow® is not a water softener or a chemical additive (like anti-scalants or sequestrants). It is a scale prevention device with proven third party laboratory test data and years of successful residential and commercial installations. OneFlow® is the one water treatment device that effectively provides scale protection and is a great salt-free alternative to water softening (ion exchange) or scale sequestering chemicals.

Features


- Chemical-free scale prevention and protection – converts hardness minerals to harmless, inactive microscopic crystals making OneFlow® an effective alternative technology to a water softener for the prevention of scale due to water hardness
- Virtually maintenance free – no control valve
- Uses environmentally friendly technology by using no salt or other chemicals to constantly add, no electricity and no wastewater
- Improves efficiency of all water using appliances – both hot** and cold
- Simple sizing & installation – all you need to know is pipe size and the peak flow rate

** For hot water applications where feed water temperature is 100°F – 140°F (38° – 60°C), please consult ES-OneFlow-HotWater



OF1665-75TM

Tank base may vary from image shown



Systems are tested and certified by WQA against NSF/ANSI/CAN Standard 61 and NSF/ANSI/CAN 372 for Lead Free compliance.

C **US**

- Perfect system for towns or communities where water softeners are banned or restricted
- For high-flow applications, install multiple tanks in parallel
- OneFlow® does not remove minerals or add sodium to the water supply
- OneFlow can be installed as pre-treatment to commercial reverse osmosis systems (contact your Watts® Representative for further details)

⚠ WARNING

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



Models

Model	Ordering Codes	Maximum Flow Rate
OF1354-30TM	EDP #0002221	30 gpm (114 lpm)
OF1465-50TM	EDP #7100661	50 gpm (189 lpm)
OF1665-75TM	EDP #7100662	75 gpm (284 lpm)

Connections

Model	Inlet/Outlet Connection
OF1354-30TM	2" PVC FNPT
OF1465-50TM*	2" PVC FNPT
OF1665-75TM*	2" PVC FNPT

NOTICE

*For models OF1465-50TM and OF1665-75TM, Two 2" MNPT Flex Connectors are included and required for each tank installation

Replacement Media

OF1354RM	Media should be replaced every 3 years
OF1465RM	Media should be replaced every 3 years
OF1665RM	Media should be replaced every 3 years

Specifications

A OneFlow® scale prevention system shall be installed on the main water service pipe just after it enters the building, but after other whole building water safety devices (backflow preventers or pressure reducing valves), to effectively address water hardness concerns. A system may also be installed further downstream to protect specific equipment or areas within a plumbing system. The system shall be plumbed with a bypass valve to allow isolation of tank(s) and to allow the bypass of untreated water in the event that service or media replacement be necessary. The installation area should be suitable in size for the tank(s) to be serviced without encumbrance and sit upright on a flat level surface.

The system must operate in an upflow manner and does not require additional water to backwash, flush, or regenerate once put into service. The system does not require any chemical additives and does not require electricity for operation.

Multi-tank systems shall be installed in parallel with PVC/CPVC manifold to meet peak flow rate requirements – see image below.



Standards

Independent scientific testing has confirmed media-assisted crystallization (MAC) technology provides scale reduction of over 95+%. Testing was conducted under protocol based on DVGW W512 test to access control of scale formation.

Feed Water Chemistry Requirements

pH	6.5-8.5
Hardness (maximum)	30 grains (513 ppm CaCO ₃) *
Water Pressure	15psi to 100psi (1.03 bar to 6.9 bar)
Temperature	40°F to 100°F (5°C to 38°C)
Free Chlorine	<2 ppm
Iron (maximum)	0.3 ppm **
Manganese (maximum)	0.05 ppm **
Copper (maximum)	1.3 ppm***
Oil & H ₂ S	Must be Removed Prior to OneFlow
Total Phosphates	<3.0 ppm
Silica (maximum)	20 ppm †
TDS	<1500 mg/L ††

NOTICE

* Systems using OneFlow® technology are effective at controlling lime-scale formation inside the plumbing system at influent hardness levels up to 75 grains per gallon (1282 mg/L) as calcium carbonate. Due to variances in water chemistry, 30 grains per gallon is a recommended hardness maximum due to potential aesthetic issues related to soft scale residue formation outside of the plumbing system. Testing should be performed to determine proper application where hardness levels exceed 30 grains per gallon.

** Just as with conventional water softening media, OneFlow® media needs to be protected from excess levels of certain metals that can easily coat the active surface, reducing its effectiveness over time. Public water supplies rarely, if ever, present a problem, but if the water supply is from a private well, confirm that the levels of iron (Fe) and manganese (Mn) are less than 0.3 mg/L and 0.05 mg/L, respectively.

WARNING

***Pursuant to the EPA drinking water standards, the copper concentration permitted is up to 1.3 ppm. Typically originating from new copper plumbing, high levels of copper can foul OneFlow media. New Copper lines need to be passivated for a minimum of 4 weeks before placing unit into service. For applications with copper concentration greater than 1.3 ppm, please consult Watts Water Quality Technical Service. To further minimize any problem with excess copper, avoid applying excessive flux on the inner surfaces of the pipe and use a low-corrosivity water soluble flux listed under the ASTM B813 standard.

NOTICE

† OneFlow® media does not reduce silica scaling. While silica tends to have a less significant effect on scale formation than other minerals, it can act as a binder that makes water spots and scale residue outside the plumbing system difficult to remove. This 20 ppm limitation is for aesthetic purposes.

†† All other contaminants must meet the requirements of the USEPA Safe Drinking Water Act. Specific Mineral and Metal MCL's, identified in Watts published Feed Water Chemistry Requirements, supersedes the USEPA SDWA.

Water known to have heavy loads of dirt and debris may require pre-filtration prior to OneFlow®.

NOTICE

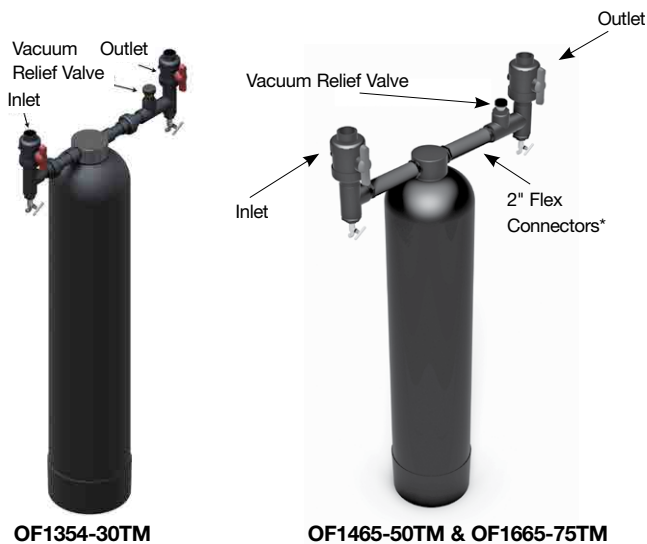
Models OF1465-50TM and OF1665-75TM Only

*It is very important to use **flexible connections** on the inlet and outlet plumbing in the horizontal orientation as shown in the images on this page. The tanks expand and contract with water pressure fluctuations. Flexible connectors will prevent plumbing and tank leaks. The EDP code for the suggested Watts 2" Flexible Connectors is C515285 (Two are included and required for installation).

Models OF1354-30TM, OF1465-50TM and OF1665-75TM

Anytime OneFlow® systems are installed above the ground floor of a building it is recommended that a **vacuum relief valve** also be installed to protect against tank collapse in the event the plumbing system is drained. If a vacuum relief valve is not used then the system should be placed in bypass anytime the plumbing system is drained. The EDP code for the suggested vacuum relief valve is 0556031 (not included). The vacuum relief valve should be installed on the outlet of the system.

Typical Installation for Single and Multi-tank Systems



Install Piping

Connect the inlet and outlet plumbing according to your preferences and any applicable local codes. Include sample/drain ports with hose-bibb connections on the inlet and outlet piping to facilitate startup and service.

⚠ WARNING

Support the Piping

2 inch Flex Connectors must be installed horizontally not vertically in the water pipe line. The full weight of the piping and valves must be supported by uni-strut, pipe hangers or other means. The tank connections cannot support the weight of the piping. The image below for a multi-tank system installation shows properly supported piping.

NOTICE

Not for use on closed loop systems.

⚠ WARNING

Using OneFlow® with Other Water Treatment Equipment

Due to the unique properties of OneFlow®, there are some unique requirements for using OneFlow® in conjunction with filtration or other forms of water treatment.

1. OneFlow® must be the last stage in the treatment chain. Do not install any filters after OneFlow® or before any devices for which scale prevention is required. POU filters, e.g. carbon, RO or Ultraviolet (UV) are exempt from this requirement.
2. Do not apply any other antiscalant before or after OneFlow®.
3. The addition of soaps, chemicals, or cleaners, before or after OneFlow treatment, may reverse its anti-scale treatment effects and/or create water with a heavy residue or spotting potential. Any adverse conditions caused by the addition of soaps, chemicals, or cleaners are the sole responsibility of the end user.
4. OneFlow is not a water softener and does not soften the water - Water treatment chemistry (e.g. antiscalants, sequestrants, soaps, chemicals or cleaners etc...) will most likely have to be changed to be compatible with OneFlow treated water. Laundry and ware-washing chemistry will likewise require adjustments.

NOTICE

Spotting May Occur on External Plumbing Surfaces

OneFlow media systems perform best in single pass potable water applications with NO additional chemical additives. Depending on hardness, soft scale spotting may occur. Soft scale spots in most cases can be easily wiped down with a damp cloth and will not form hard scale deposits. Point Of Use (POU) Water Softener should be used on mandatory spot-free applications (e.g. glass stemware, dishware).

Weights

	OF1354-30TM		OF1465-50TM		OF1665-75TM	
Dry Weight	75 lbs.	34 kgs.	98 lbs.	44 kgs.	120 lbs.	54 kgs.
Service Weight	397 lbs.	180 kgs.	442 lbs.	201 kgs.	521 lbs.	236 kgs.

Maximum Service Flow (gpm) vs. Water Temperature

Continuous Duty Systems:

System	40°F	45°F	50°F	55°F	60°F	65°F	70°F
OF1354-30TM	20	24	28	30	30	30	30
OF1465-50TM	40	44	48	50	50	50	50
OF1665-75TM	45	51	56	59	63	69	75

Intermittent Duty Systems:

OF1354-30TM	30 GPM at all temperatures
OF1465-50TM	50 GPM at all temperatures
OF1665-75TM	75 GPM at all temperatures

Intermittent duty is defined as less than 2 hours of Maximum Flow per 24 hour period. Higher Flow rates can be achieved by combining systems in an array.

Maximum Flow Rate***

MODELS	GPM	LPM
OF1354-30TM	30	114
OF1465-50TM	50	189
OF1665-75TM	75	284

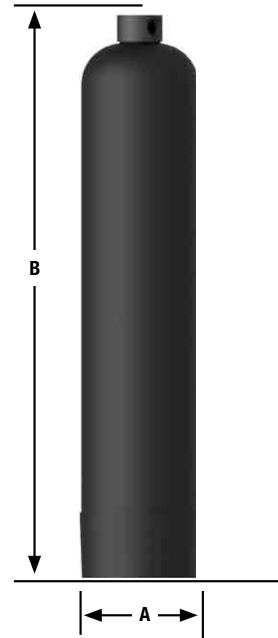
*** Exceeding maximum flow can reduce effectiveness and void warranty.

Pressure drop at peak flow rate is less than 22psi using 80°F feed water.

Dimensions

Model	Dimensions	
	A in.	B in.
OF1354-30TM	13	57.7
OF1465-50TM	14	68.8
OF1665-75TM	16	68.8

The overall height and the height of the inlet fitting varies due to material variations and assembly tolerances. Please allow additional clearance above the tank for making connections.



NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.



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