EWS, Inc. / Environmental Water Systems

Product Information Booklet
Whole Facility Filtration & Conditioning Appliance
EWS-1665-2”

Booklet includes information on the EWS-1665-2”
Large Residential / Multi-Unit / Commercial System

Specify for 2” main service line or
multiple units installed in parallel on 3” or 4” service lines

- Tearsheet on Individual System with Technical Specifications
- Media Replacement specific to this unit
- Compliances
- Media/Filtration Removal and Capabilities

EWS, INC. and Environmental Water Systems
A Complete Line of Water Filtration Product from Sink to Whole-Home

Applicable Water Filtration Available Based on Water Conditions and Consumer Needs and/or Preferences:

Drinking Water Filtration Systems
Reverse Osmosis
UV Disinfection
CWL Series of Whole Home Filtration Appliances
EWS Series of Whole Home Filtration & Physical Conditioning
Softener Series
pH Balancing
Iron Removal
and more...

■Municipally-Treated ■Well Water Applications ■Residential ■Commercial ■Industrial

ALL FILTRATION PRODUCT MANUFACTURED AND ASSEMBLED IN THE USA

www.ewswater.com **office: 702-256-8182 (m-f; 8:30-4:30, pst)** **fax: 702-256-3744** customerservice@ewswater.com

Highlights of the EWS Series of Whole Home Water Filtration and Conditioning Appliances

EWS Filtration

- Clean, healthy, quality water from every faucet in your home, every day.
- Better tasting, chlorine free water in your home.
- Healthier for oral intake (drinking) and as importantly, absorption and inhalation (from all other daily uses - washing, bathing, showering, brushing teeth, etc...)
- Clean, healthy, quality water - great for drinking, luxury bathing, steam, sauna, shower systems, cooking, and all uses.
- Healthier skin, hair and body systems.
- Natural water balance.
- High grade Granular Activated Carbon (GAC) filtration media.
- Minimal system maintenance required, 7 to 10 years prior to change out of filtration (GAC) media and ICN conditioner(s).
- Proprietary Digital Valve Technology (12 day pin setup available on commercial units) with automatic backwash (not a brine) provides years of trouble-free operation. Our most efficient valve yet, uses the power draw of a doorbell and is easy to install and set.
- High flow rates to accommodate most any application.
- EWS units backwash and self clean. A great appliance for second homes, vacation homes or any residences. Leaving sink filtration units, in-line units and/or refrigerator filters for periods of time without usage can create problems and, unlike your EWS unit, these other units have no ability to self clean.

EWS Conditioning

- EWS conditioned water provides a nice clean feeling and not the slippery or slimy feeling *(it seems you just can't get the soap off)* as with softeners.
- Alternative to water softeners. EWS has none of the harsh effects of salts (sodium and/or potassium chloride). No salts or chemicals to add routinely.
- EWS inhibits scale formation in pipes and water heaters.
- Easier wipe off and clean up of water spotting than with untreated water.
- Use less soaps and detergents than with untreated water.
- EWS is environmentally safe with no brine discharge (as with a softener). Softeners have been actually outlawed or restricted in certain locals and need to avoid discharge into septic systems.
- EWS has no legal restrictions, warranty, or finish issues as with softeners.
- No loops or bypasses needed to avoid drinking or using softened water.

EWS, Inc. / Environmental Water Systems

Whole Facility Water Filtration and Conditioning Appliances

EWS-1665-2"

The EWS Series of whole home/facility water filtration and conditioning appliances is designed to provide quality, filtered and conditioned water to the entire home or facility, which creates a healthier water environment.

EWS Filtration:

The granular activated carbon (GAC) high grade filtration media removes chlorine and other volatile organic compounds (VOC's), improving the taste, clarity and odor of all the water. The water can be used for all purposes; drinking and cooking, bathing and showering, steam and sauna; for you and your family, pets and plants.

EWS Conditioning:

EWS physical conditioning helps solve those problems associated with hard water without the disadvantages of softening.In use Worlwide, our catalytic process is called Increased Calcite Nucleation (ICN). Once the water has been filtered, the water travels up through the riser and the manifold containing the ICN, where the conditioner breaks apart the calcium and magnesium minerals from the bonds of the water molecules. Once in suspension, the minerals become attracted to each other and form concentric patterns which no longer adhere to surfaces, actively inhibiting scale formation.

The Result:

Easier wipe up of water spotting, better use of soaps, scale prevention within your pipes and water heater, and filtered water to the entire facility. None of the salt issues of slippery feeling water, brine discharge and other problems.
EWS will deliver water throughout the facility at the flow rate and pressure normally found.The automatic backwash does not allow the filtration media to pack, channel or pool, this prevents any bacterial build-up and provides continued and renewed surface area for filtration. Years before media (not a cartridge) and ICN replacement based on usage and conditions.

Benefits:

* Alternative to Sodium or Potassium Chloride Softening
* Easier Clean-Up of Water Spots, Better Use of Soaps
* Actively Inhibits Scale Formation in Pipes and Water Heaters without the Corrosivity of Salt Softening
* Improves Taste, Clarity and Odors to the Entire Facility
* Removes Chlorine and VOC's, Replaces Costly Bottled Water
* Healthier Water for Skin, Hair and Body Systems
* Healthier Environment for Absorption and Inhalation
*Upgrade Your Usage of Your Spa Tubs, Shower Systems, Steam and Sauna Units, and All Your Faucets
* Does Not Need Routine Maintenance and is Environmentally Correct

Applications:

* Installs Easily at the Main Water Supply Line that Supplies the Facility, Maintains Flow Rate and Pressure
* No Soft Water "Loops" or Bypass Needed to Avoid Softened Water to Drinking Taps, Pools and Plants
* Any Facility up to 2" Service Line
* Drain (backwash) Water is Safe, No Brine Discharge
* Safe for Pets, Plants, Pools, Spas and Less Harsh on Plumbing Fixtures, Accessories, Finishes and other Surfaces

EWS-1665-2"
Unit for 2" Main Service Line
or Multiple Units Installed in Parallel on 3" or 4" Lines

www.ewswater.com **office: 702-256-8182 (m-f; 8:30-4:30, pst)** **fax: 702-256-3744** customerservice@ewswater.com

EWS, Inc. / Environmental Water Systems

Technical Information: EWS-1665 Series: Whole Home Filtration and Conditioning Appliances

Model No.	Tank Size	Media Content cu. ft. / lbs	Line Size	Valve Head	Installed Unit Size	Water Flow (GPM)	Backwash (GPM)
EWS-1665-2"	16" x 65"	4.0/110	2"	2900	16" x 77"	100	10

EWS-1665 Series contains 3 ICN's in the Riser Manifold for added conditioning capacity

Larger commercial units do not come with stainless covers, have larger valving and must be assembled on site. Please specify electrical requirements and line service size for proper specif-

MEDIA SPECIFICATIONS:

Granular Activated Carbon (GAC) - Primary Filtration Media

•Large surface area results in an exceptionally high capacity and efficiency. Activated Carbon is very hard so losses due to attrition are kept to a minimum. GAC constitutes an excellent filtration media, having a density with a balanced pore structure for more efficient operation. GAC even with it's high capacity should be replaced when the filter loses the capacity for removal of taste and odor.

•GAC is the most effective media for the removal of contaminants from water. GAC has the unique ability to adsorb chlorine from water and is the most preferred method for the complete protection from trihalomethanes (THM's) and has been proven 99% effective.

•However, no one media, resin or cartridge is capable of all things. Please refer to the GAC reference chart for capacities.

•A high grade, dedusted GAC with an iodine rating of 1200 has been selected for all CWL and EWS Series with the added Filter Ag and Filter Sand for enhancements.

GAC PHYSICAL PROPERTIES:
Color: Black, Form: Granular, Mesh Size: 12 x 40
Density: 33lbs. / cu. ft.,
Water Soluble Ash: less than 0.5%
Iodine No.: 1200 Abrasion No.: 75 min.
Meets and complies with: American Water Works Association Standard -B604-74
Bed Depth: 26 - 30 in., Backwash Rate: 8-10 gpm
Backwash Bed Expansion: 30 - 40 % of bed depth

Filter Ag
Used to afford maximum removal of suspended matter throughout the filter bed and to allow the GAC media to work at maximum efficiency
* Acts as a Pre-Sediment (20 micron) media
* Less pressure loss, increased filter capacity
* Light weight, lower backwash rates.

Under Bed Filter Sand
Keeps riser in place and promotes better flow and even water distribution through media bed and during backwash cycles to lift bed uniformally.

ICN Conditioner
The ICN's Field triggers a reaction (increased calcite nucleation) that changes the structure of the minerals as they relate to water molecules. Minerals become suspended and form concentric patterns into free floating disks which make the hardness minerals attach to each other and no longer adhere to hard surfaces.The ICN unit is a series of dissimilar metals which creates the field that triggers this reaction (This is not a magnet). This conditioning (not softening) process is used widely by EWS throughout the US and around the world.

CONDITIONS FOR OPERATION:
System Service Flow Rate - up to 100 gpm
Media Service Flow Rate - 5 gpm / sq. ft.
Min/Max Water Temperature: 40º / 80 ºF - 4.4 / 62.8C
Min/Max Water Pressure: 40 PSI / 85 PSI
Warning: Install Pressure Reducing Valve (PRV), by code in places, to prevent pressure surges and warranty issues

2900 Valve:
Controls automatic backwash cycles
Warranty: Valve - 3 years

Electrical: 110v
Please specify other requirements

Drain: 3/4" to any location

Freeboard:
1/3 space allows media space to lift during backwash

Filtration: GAC filtration media

Tank: Tough epoxy and fiberglass outer laminate, seamless, one-piece blow molded
Warranty: Tank - 10 years

No Stainless Steel Jacket with larger units

Lower Riser Screen and Under Bed:
Water distribution

EWS, Inc. / Environmental Water Systems

GRANULAR ACTIVATED CARBON (GAC) Reference List

Below is a simple reference chart to give some perspective as to GAC's capabilities with various substances. Some items are heavy metals and inorganics, while others are VOC's (volatile organic compounds), some of which are man-made pollutants. Still other items, such as hardness, are not even considered contaminants. In general, GAC is very economical and a great compliment to municipally-treated water without the disadvantages of more aggressive filtration. GAC is used in all filtration due to its removal capacities. Know your water to select the correct product for you, your family and your home.

■ Carbon (GAC) Filtration: For the general removal of chlorine, chloramines, gases, dyes, fuels, the man-made pollutant issues, the volatile organics contaminents; see those categories that have reference numbers of 3, 4 or 5. Filtration of these items compliment most municipal water for taste, odor, clarity and quality for oral intake, absorption and inhalation. See CWL or EWS whole home appliances for this filtration to the entire home or any sink filtration system for any point of use.

■ In general, items listed with 0, 1, or 2 are closely monitored and treated by the local municipality or utility that delivers your water. Issues such as lead occur due to aging delivery systems and other elements such as nitrates or arsenic may be present due to local environmental conditions. These elements are related to oral intake only. Specific filtration of lead and cysts are accomplished by Carbon Block found in the FUGAC250 or UU250 with the added safeguard of UV disinfection. Specific filtration for oral intake of other items referenced by 0, 1, or 2 can be accomplished by the use of a membrane, as found in the RU300C18 reverse osmosis system

Whole Home Filtration by EWS, Inc.

EWS, Inc. uses a proprietary raw, natural organic material for activation, which creates an incredible surface area of 800 square meters per gram of material, or over 3,000 football fields of surface area per 11/2 cubic feet (41-42 lbs.), which we use in our standard CWL or EWS units (21/2 cu.ft./65 lbs. in all 1354 Series). This high grade, dedusted, Granular Activated Carbon has a minimum Iodine rating of 1200 and has been selected for use in all CWL Series (whole home filtration appliances) and the Environmental Water Systems Series of whole home water filtration and conditioning appliances for optimum use and filtra-

Acetaldehyde	4	Emulsions	2	Lead	3	Precipitated Sulfur	2
Acetic Acid	3	Ethyl Acetate	5	Lime	0	Propioic Acid	4
Acetone	4	Ethyl Acrylate	5	Mercaptans	4	Propionaldehyde	3
Alcohols	4	Ethyl Alcohol	4	Metal Salts	1	Propyl Acetate	4
Alkalinity	1	Ethyl Amine	4	Methyl Acetate	4	Propyl Alcohol	4
Amines	3	Ethyl Chloride	4	Methyl Alcohol	4	Propyl Chloride	4
Ammonia	1	Ethyl Ether	4	Methyl Bromide	5	Radon	4
Amyl Acetate	5	Fertilizers	1	Methyl Chloride	4	Rubber Hose Taste	5
Amyl Alcohol	5	Fluorides	2	Methyl Ethyl Ketone	5	Seawater	1
Antifreeze	4	Formaldehyde	2	Naphtha	5	Sediment	2
Arsenic	1	Gasoline	5	Nitrates	0	Soap	3
Benzene	5	Glycols	5	Nitric Acid	3	Sodium Hypochlorite	5
Bleach	5	Hardness	0	Nitrobenzene	5	Soluble Iron	2
Boron	1	Heavy Metals	3	Nitrotoluene	5	Solvents	4
Bytly Alcohol	5	Herbicides	5	Odors (General)	5	Sulfuric Acid	1
Butly Acetate	5	Hydrogen Bromide	2	Oil - Dissolved	5	Sulphonated Oils	4
Calcium Hypochlorite	5	Hydrogen Chloride	1	Oil - Suspended	2	Suspended Matter	2
Carbon Dioxide	0	Hydrogen Fluoride	1	Organic Acids	4	Tannins	4
Chloral	5	Hydrogen Iodide	2	Organic Esters	5	Tar Emulsion	4
Chloramine	4	Hydrogen Peroxide	5	Organic Salts	4	Tartaric Acid	4
Chloroform	5	Hydrogen Selenide	3	Oxalic Acid	5	Taste (DI Water)	4
Chlorine	5	Hydrogen Sulfide	3	Oxygen	5	Taste (From Organics)	4
Clorobenzene	5	Hydroclorous Acid	5	Ozone	4	THM's	5
Chlorophenol	5	Inorganic Acids	1	PCB's	5	Toluene	5
Chlorophyll	4	Inorganic Chemicals	1	Pesticides	5	Toluidine	5
Citric Acid	4	Insecticides	5	Phenol	5	Trichlorethylene	5
Cresol	5	Iodine	5	Phosphates	0	Turpentine	5
Defoliants	5	Isopropyl Acetate	5	Plastic Taste	5	Urine	2
Detergents	3	Isopropyl Alcohol	5	Plating Wastes	3	Vinegar	3
Diesel Fuel	5	Ketones	5	Potassium Permanganate	4	Xanthophyll	4
Dyes	5	Lactic Acid	4	Precipitated Iron	2	Xylene	5

KEY TO THE ABOVE LIST:

5- EXCELLENT - A proven application 4- VERY GOOD - A proven application 3- GOOD - very acceptable result

2- FAIR - limited application 1- POOR - not a recommended application 0- Not an application for GAC

www.ewswater.com **office: 702-256-8182 (m-f; 8:30-4:30, pst)** **fax: 702-256-3744** customerservice@ewswater.com

EWS-1665-2”

www.ewswater.com office: 702-256-8182 (m-f; 8:30-4:30, pst) fax: 702-256-3744 customerservice@ewswater.com

EWS-1665-2”

Service Line Size: 2”

Drain Line Size: minimum 3/4”

Tank Size: 16” x 65”

Installed Dimensions:
Height: 83” (top of valve)

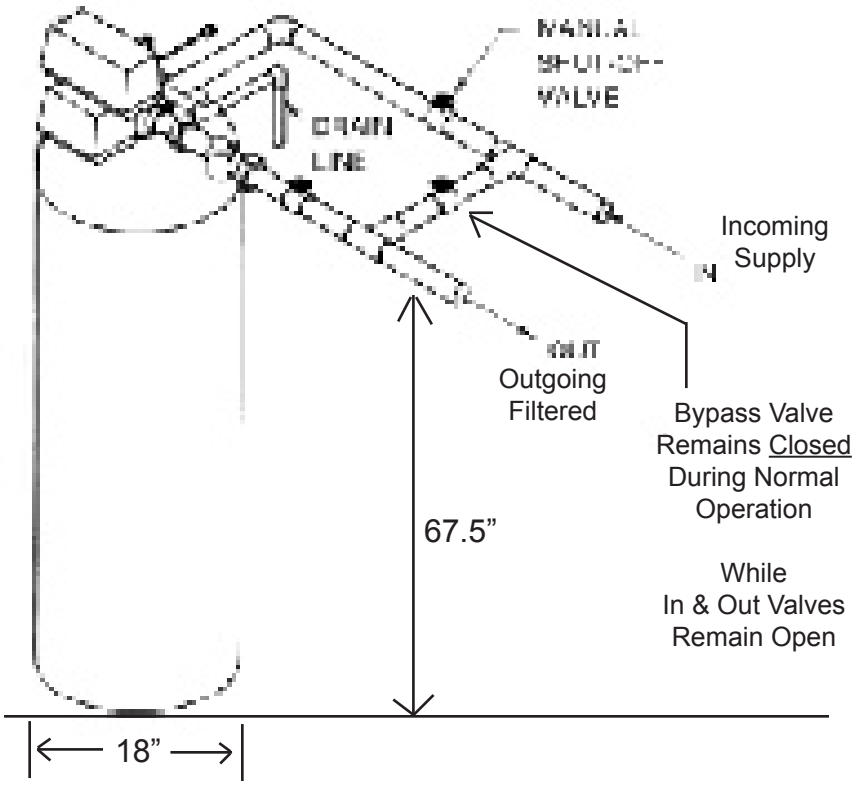
Dry Weight: 225 lbs.

Width: 18”

Clearance:
Allow 2’ for plumbing

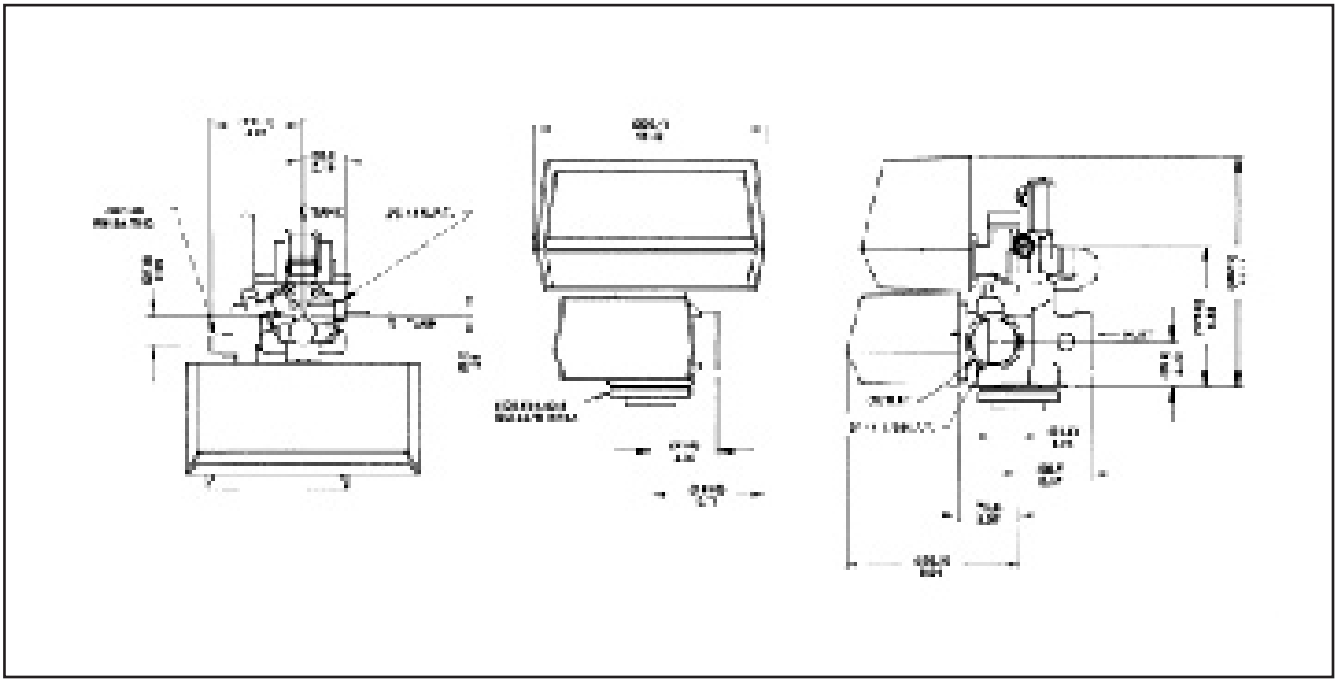
Must be assembled on site

Bypass required with 3 valves and unions for quick disconnect for media replacement, maintenance and warranty



Multiple Units should be installed in parallel (not series) for 3” or 4” service lines

2900 2”- Valve



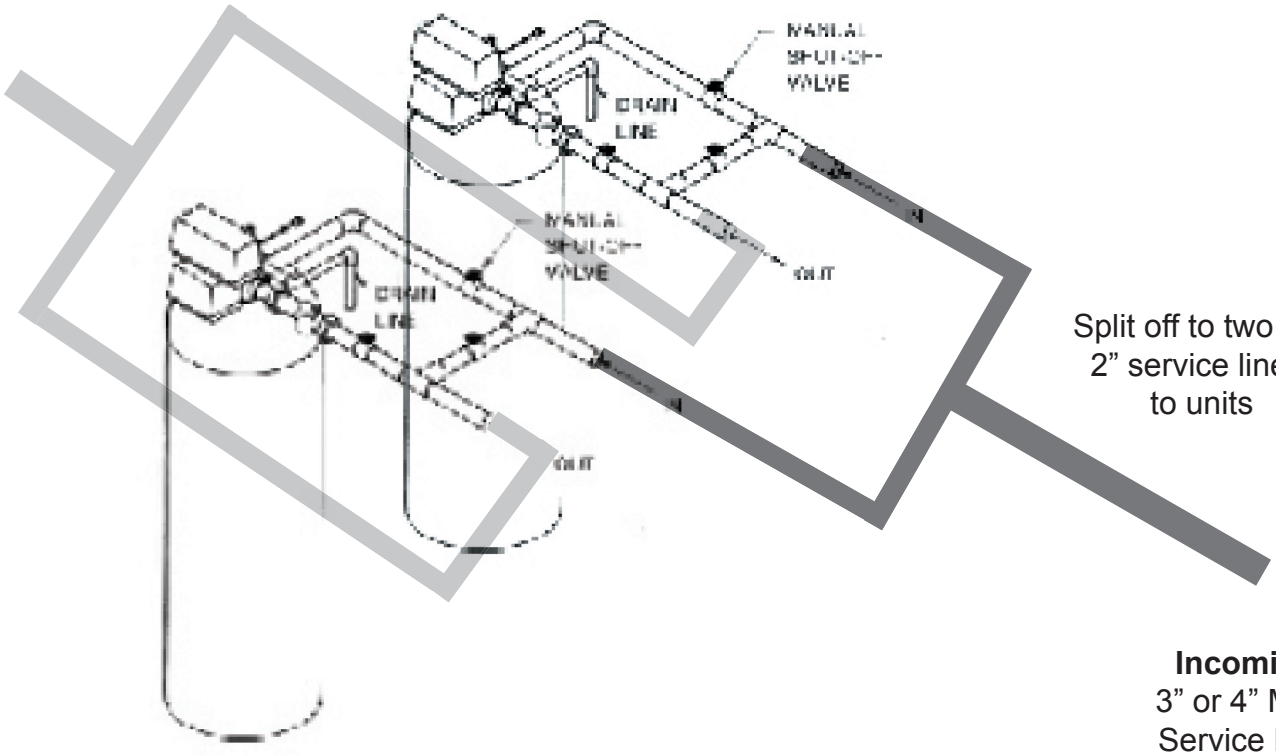
Rough Schematic
Running Two (2) EWS-1665-2” Units in Parallel

Split off incoming main supply line into two (2) 2” lines and run toward EWS units

Assemble and install units

Filtered water then supplies whole facility either back to one large line
or to other lines based on plumbing configuration

Outgoing
3” or 4” Filtered Supply
(or other configuration
per your plans)
Service Supply to
Facility after Units

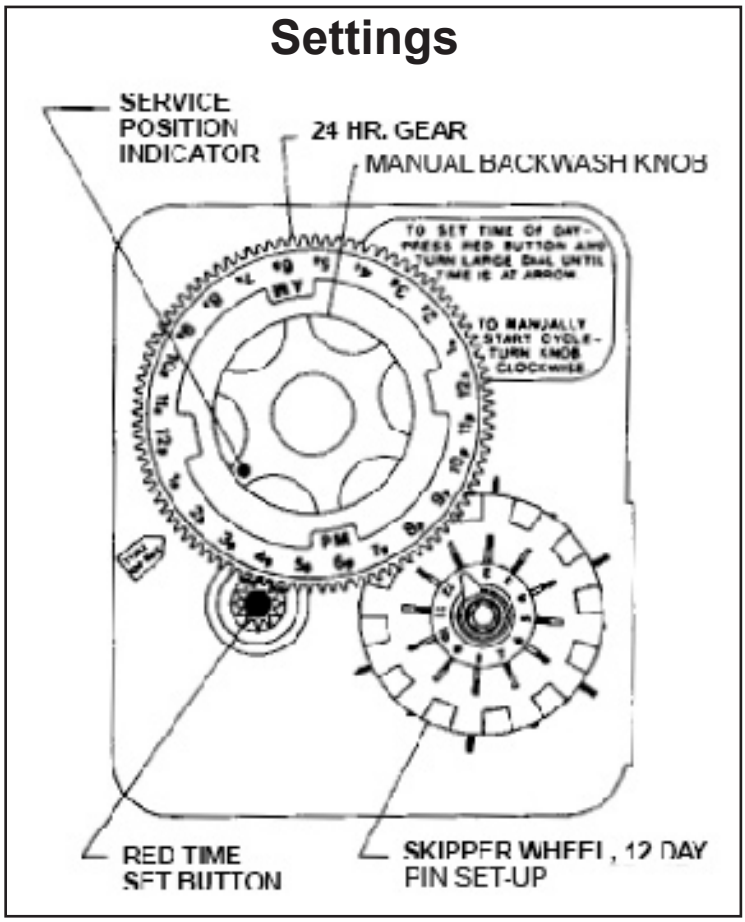


Split off to two (2)
2” service lines
to units

Incoming
3” or 4” Main
Service Line

Allows for greater flows over more even, consistent and constant filtration and conditioning. Easier to maintain and service. Alternating backwash cycles prevents any filtration downtime. Two units provide advantages of one larger unit at less cost.

EWS-1665-2”
2900 2” Valve
Settings



To set the days in which system will backwash:
Set the days that backwash is to occur by sliding tabs on the skipper wheel outward to expose trip fingers. Each tab is one day. Finger at red pointer is tonight. Normal Factory Setting is every three (3) days - tabs 1, 4, 7, & 10 should be out. Adjust as needed. Caution: minimum of at least one tab should out to backwash at least every 12 days (this considered the vacation setting and is not advisable for normal usage). Never shut off water to the unit for prolonged periods of time.

To set the time of day:
Press and hold the red button in to disengage the drive gear. Turn the large gear until the actual time of day is opposite the time of day pointer. Release the red button to again engage the drive gear between the cogs. Caution: make sure the connection is not jammed and the cogs are back in place properly.

To manually backwash the system:
Turn the manual knob clockwise slowly until the gear activates and the system begins to backwash. Larger valves due to flow characteristics may make a loud mechanical noise and flush. Allow the system to automatically process or manually turn the knob clockwise until the the service indicator is back in the standby position located near or across from the time of day pointer.

Please see the start-up procedures to flush filtration media prior to putting unit into service.

ON-SITE ASSEMBLY PROCEDURES

Due to the shipping weight of these units, these units must be assembled on site.

Unpack the Shipped Boxes and Identify the Following Components:

- Box 1 — Tank and Riser Manifold with ICN's for EWS Commercial units. (find riser in separate box, in tank box, and/or within tank)
- Box 2 — Valve Head and Upper Valve Screen to be attached upon installation
- Box 3 — Master carton will also include the following:
  - •underbed (small heavy box labeled sand, underbed or pea gravel)
  - •small riser cap (may already be on Riser Manifold)
  - •funnel to assist placement of the underbed and filtration media
  - • Service Manual (additional information provided with systems using 2" valves and greater)
- Boxes 4-7 — Filtration Media is a pre-measured kit and will come in these boxes

ASSEMBLY PROCEDURES:

1) Take the empty tank and place it in your planned installed location.
2) Insert cap into the top of the riser, using the small riser cap, or tape the top of riser to prevent filling with media.
3) Place capped or taped riser into the center of the tank. The bottom of the riser has a lower screen which is placed at the bottom of the empty tank. Make sure the bottom of the riser is seated at the bottom of the tank.
4) Place funnel at top opening of the tank. This will allow an easier fill of the underbed and filtration media.
5) Load tank with small heavy box labeled underbed, sand or pea gravel. Empty box completely.
6) Load all filtration media boxes. Empty all boxes completely. Materials are black and granular. Please prevent any inhalation of media dust.
7) Lubricate the tank o-ring seal, which makes contact to the top of tank opening. Note: Use only a silicone lubricant.
8) Install and secure the Upper Valve Screen to the bottom of the valve.
9) Install the Valve Head by slipping Upper Valve Screen (the cone at bottom of the valve head) over the top of the riser and onto the tank. Hand tighten Valve Head onto tank by turning clockwise.

WARNING: BE CAREFUL NOT TO STRIP OR CROSS THE TANK THREADS.

10) Follow all instructions, pictures and schematics for proper Set-Up, Installation and Start-Up of these Systems

Units with 2" valving or greater, include a complete guide on that valving and its exact set-up and installation. Start-up remains the same; slow fill, valve settings, electrical, flushing/backwashing, and final service position.

Important to Note:
All Set-Up, Installation and Start-Up Procedures must be followed after assembly.

EWS, Inc. / Environmental Water Systems

GENERAL INFORMATION AND PRE-INSTALLATION CHECKLIST

Verify:	All components are included with the unit and were not damaged in shipping.
Caution:	Do not attempt to install any system using defective or damaged components. Do not install any system that has been misapplied.
Warning:	When drilling or cutting, use protective eyewear to prevent possible eye injury due to flying objects. When using an open flame and/or hot materials, take the necessary precautions for you and the environment to prevent burns, burning and/or fires.

■ Water Pressure and Flow Rate:
A minimum of 35 PSI (40 PSI for Iron units) and 8 GPM for 1054 tanks, 12 GPM for 1354 tanks, 20 GPM for 1665 tanks is required for backwash valve to operate effectively. Water pressure not to exceed or to surge in excess of a maximum of 75 PSI for the system. Unsure of pressure or it's ability to surge? A pressure reducing valve (PRV) becomes an insurance policy and is recommended for this and many other products that limit high pressure in your home.

■Water Temperature Range:
Feed water temperature not to exceed 110°F or be allowed to go below 40°F. Protect unit from exceeding high temperatures and never allow unit, its' drain line and any water to freeze.

■Electrical:
An uninterrupted alternating current (A/C) supply is required. Please make sure your voltage supply is compatible with your unit before installation.

■Existing Plumbing:
Condition of existing plumbing should be free from lime and iron buildup. Piping that is built up heavily and clogged with lime and/or iron should be replaced. Problem with iron? Our separate iron filter unit should be installed ahead of any other unit. Old galvinized or combinations of plumbing materials can cause water issues and conditions.

■Location of Tank, Drain and Electrical:
Units can be installed, almost anywhere. Inside or outside. However, use your common sense. Valves may be water resistant, not water proof. Protect any system from the elements. Review issues on water flow rates and pressure, and environmental and water temperature ranges. The tank should have access to the supply water, provide filtered water to the home, be located close to a clean working drain, have an electrical outlet available, and be connected according to all local plumbing codes.

■By-Pass Valves:
Always provide for the installation of a bypass valve, if unit (with larger valves) is not equipped with one.

■Drain Connection:
Nominal drain line and drain size on 1054/1354 (non-iron) units should be a minimum of 1/2". Backwash flow rates of 7 GPM (1354 units) with drain line exceeding 20' in length require 3/4" line and drain. Larger valves require 3/4" line and drain. Increase to 1" with drain line exceeding 20'. Install, non-restrictive, check valve in drain line, if drain water is expected to flow over 5' above the height of the drain port. Never restrict the backwash drain water flow.Teflon tape is the only sealant to be used on the drain fitting.

All plumbing should be done in accordance with all local plumbing codes.

Unsure of the specifics?
All the information that you may need is in this product manual and available on the web.
Identify the unit you are installing and follow the detailed, Set-Up, Installation and Start-Up of that unit.
WARNING: IMPROPER INSTALLATION WILL RESULT IN THE VOIDING OF ANY WARRANTY.

IF YOU ONLY READ ONE PAGE IN THIS MANUAL - THIS IS IT !!!
GENERAL INSTALLATION SUMMARY - 12 STEPS

Step 1:
Locate the following: Main Water Supply Line, Drain Access, Electrical Outlet and Clearances.

Step 2:
Check the incoming Water Pressure. Install a pressure regulator (PRV) if the water pressure exceeds or can surge above 75 PSI.

Step 3:
Place the tank where you want to install the unit, making sure the tank is level and on a firm base, noting the clearances necessary to complete the installation. Can go anywhere, see details.

Step 4:
After following assembly procedures. Hand Tighten the Valve Head in a Clockwise Direction. Do NOT cross thread

Step 5:
Identify Water Main Supply and plumb inlet (supply) and outlet (filtered) into the unit following the directional arrows molded onto the valve body. Plumb the unit with the bypass and the male yoke included, or for larger valved units, a bypass must be plumbed. Do not cross-connect or plumb backwards. See detailed installation schematics and the helpful information in this manual.

Step 6:
Connect a backwash drain line (3/4" or larger) based on application and an air gap.

Step 7:
Partially Open Inlet Valve Only. Fill Tank Slowly. Once tank is filled, completely open inlet valve. Keep outlet valve closed. (Larger valved units, keep plumbed bypass valve closed).

Step 8:
Plug the unit into an electrical outlet. Be sure the outlet is dedicated and unswitched.
An outlet that cannot be turned "on" or "off."

Step 9:
Set the time of day on the valve display.

Step 10:
Backwash and Flush the system properly until the drain water runs clear.

Step 11:
Open Outlet Valve slowly (Larger valved units, keep plumbed bypass valve closed).

Step 12:
Run hot/cold water throughout the home (at every tap) to flush pipes and water heaters to prepare unit for usage. You are done.

Filtration Media and ICN Replacement Kit
EWS-1665

GAC Filtration Media and ICN Kit - EWS Series - Filtration & Conditioning

Model No.: ICN/GAC1665 Replacement Kit for EWS-1665
4.0 cu. ft. GAC media and ICN Riser Manifold for 1665 tank

Model No.: T-ICN/GAC1665 Replacement Tank - Complete with Media and ICN's for EWS-1665
New 16x65 Tank - Fully Assembled with 4.0 cu. ft. GAC media and ICN Riser Manifold for 1665 tank. Simply disconnect valve from old tank (discard) and replace with new tank, fill with water, replace valve and follow initial start-up instructions for a new unit.

1) Granular Activated Carbon - Primary Media
Color: Black
Form: Granular
Mesh Size: 12 x 40
Density: 33lb.s / cu. ft.
Water Soluble Ash: less than 0.5%
Iodine No.: 1200
Abrasion No.: 75 min.
Meets American Water Works Assn. Standard -B604-74

2) Stage 2: (Filter Ag)
ADVANTAGES:
* Acts as a Pre-Sediment (20 micron) media
* Less pressure loss, increased filter capacity
* Light weight reduces shipping costs and lower backwash rates.

3) Stage 3: (Under Bed)
Under Bed Keeps riser in place and allows better water distribution through filtration and backwash.
PHYSICAL PROPERTIES:
Color: Light grey to near white
Density: 24 - 26 lbs. / cu. ft.
Effective Size: 0.57 mm
Uniformity Coefficient: 1.66

CONDITIONS FOR OPERATION:
Maximum Temperature: 140F - 60C
Bed depth: 24 - 36 in
Backwash Rate: 8 -10 gpm / sq. ft.
Backwash Expansion Rate: 35 - 50% of bed depth
Service Flow Rate: 5 gpm / sq. ft.

Top 1/3 of tank left open and available for freeboard space to allow proper backwash and lift

See next page for ICN Riser Manifold replacement

See GAC reference chart

Filtration Media and ICN Replacement Kit
EWS-1665

Continued
GAC Media and ICN(s) Replacement and Kit
EWS Series - Filtration and Physical Conditioning

Stage 4: ICN Conditioning Unit
EWS-1665 contains three ICN's incorporated with Riser Manifold

The ICN's Field triggers a reaction (increased calcite nucleation) that changes the structure of the minerals as they relate to water molecules. Minerals become suspended and form concentric patterns into free floating disks which make the hardness minerals attach to each other and no longer adhere to hard surfaces.The ICN unit is a series of dissimilar metals which creates the field that triggers this reaction (This is not a magnet). This conditioning (not softening) process is used widely around the world.

The ICN is part of the riser manifold which distributes water through the tank. Once filtered, water is forced through the riser and the ICN(s) to increase the catalytic effect of the conditioners.

* Media replacement based on local water conditions and usage, proper installation and routine maintenance. Typically, we have demonstrated years between replacements.

Replacement Kits come complete with pre-measured media, ICN Riser Manifold, funnel, riser cap and instructions to extract and clean out old filtration media and ICN Riser Manifold and replace with new filtration materials and riser. Easy to do, requires no plumbing and takes about 45 minutes to an hour.

Upgrade Options to the EWS Unit:
Based on water conditions and/or consumer need, or consumer concern or preference

• Consider if applicable, based on water conditions or consumer preference, add a softener (not a filtration product) on the hot side only to either a CWL or EWS Appliance.

• Can be combined with specific sink units for drinking (oral intake only) due to specific water problems or conditions or consumer's needs or concerns at the point of use.

• For Removal/Safeguard of Lead and Cysts, see FUGAC250
• For Removal/Safeguard of Lead and Cysts, Bacterial, Viral, E-coli, and other Microorganisms, see UU250
• For other specific applications, See reverse osmosis systems, if applicable

EWS, Inc. provides a complete line of filtration product from the sink to the whole facility, based on your needs and concerns. Know your source water whether municipally-treated or well water and understand your needs.

EWS, Inc. / Environmental Water Systems

A Quick Reference of Systems and Combinations for Various Applications

Point of Entry (Incoming Home Water) Treatment

Helpful Hints: Test the water completely and specify the correct systems, first to provide healthy water to the consumer, and then water to minimize damage to the home. Specify disinfection, iron removal, pH balancing and/or sediment filtration, if needed. Specify the CWL or EWS Series at the main water supply and/or a softener on the hot side only (water heater inlet) if the softener is needed or desired. This will restrict the softeners harmful effects and still provide filtered water to the rest of the home. Specify specific sink filtration systems for oral intake (drinking, cooking, etc.) based on water results and a needed application.

Iron Removal High Purity Media Systems

For the removal of iron, manganese and hydrogen sulfide. Installed at the point of entry, this is a removal of these problems, not the trade-offs of ion-exchange. Automatic backwash with no brine discharge, no chemicals to add, and years between any maintenance (media replacement) make these systems a must with wells having these pre-treatment issues.

pH Increasing Reagent or pH Decreasing Resin Systems

Custom blended calcite/corsex media to balance low pH to prevent the corrosivity of this acid type water and custom blended resin based ion-exchange systems to lower very high pH and alkaline water.

Pre-Sediment Filtration

For the removal of actual materials, such as; dirt, silt, rust, sand, and/or particulate matter. Installed at various locations to protect other systems, this is not the cheap whole home filter others pass this off to be. It is a pre-sediment filter.

CWL Series - Whole Home Filtration Appliance

Tanks contain a High Grade of Granular Activated Carbon (GAC) Media for the removal of Chlorine and Volatile Organic Compounds (VOC's). Great for filtration to the whole home of chlorinated water supplies, for drinking, cooking, showering, and bathing (great for hair and skin) - all uses. Also used for non-chlorinated applications to safeguard water from VOC's due to ground water contamination. Upgrade option: EWS Series to filter and physically condition water, if water hardness is an issue. Required or chosen upgrade options: Point of use, drinking water system, or reverse osmosis for limited sink applications based on water conditions or additional water concerns for drinking use.

EWS Series - The Environmental Water System

Whole Home Filtration and Physical Conditioning

Filters to the whole home like the CWL Series of appliances and offers the consumer an alternative to harsh salt softening. EWS conditioning causes a physical change in how naturally found calcium and magnesium minerals react in the water and on surfaces. EWS keeps these minerals in the water for a pure, fresh taste while helping solve those problems associated with hard water. The result: less spotting, easier clean up, and prevents scale build-up in pipes and water heaters without the damaging effects of salts. No slippery feeling. No brine discharge. The best combination of whole home filtration and the alternative to salts and softening. Required or chosen upgrade options: Sink units for specific removal needs or concerns.

Softeners

If water hardness is an issue, water softeners will soften the water through ion-exchange. This process substitutes naturally found calcium and magnesium (hardness) minerals for sodium or potassium chloride (salts) and does not filter the water. Water will spot less, wipe off easier, and prevent lime scale in pipes and water heaters. However, restrictions on softeners due to brine discharge into your septic tank, salts, and wasted water are growing. Softeners may also void warranties on other household products (ie: pools, spas, special finishes, etc.) Once softened, many people do not like the slippery feeling of the water and reverse osmosis becomes necessary to remove the salt from drinking water that the softener put in. If a softener is chosen, application on the hot side only is recommended. Ironically, we make some of the most efficient metered softeners in the industry. Consider on hardness above 20 grains and use on excessive hardness above 40 grains. Alternative: EWS Series to filter and physically condition water below 30 grains.

Point of Use (Sink Location) Filtration Product

Helpful Hints: Choose as a drinking water upgrade based on tested results, needs or concerns. Select either a drinking water filtration system or reverse osmosis system based on the needed application, consumer's needs, concerns and/or preferences. Add an EWS chiller and one of our upgraded dispensing faucets to complete the sink package.

Drinking Water Systems

Sink filtration product for oral intake, drinking, cooking, ice-making, etc., to protect consumer against known or unknown water issues or concerns. **FUGAC250 ("better")** for carbon block filtration of chlorine and VOC's, lead, and cysts. **UU250 ("best")** for the additional safeguard from bacterial, viral, e-coli and microorganisms. No storage tanks, no limited supply, and no wasted water associated with reverse osmosis systems.

Reverse Osmosis Systems

Sink filtration product for oral intake, drinking, cooking, ice-making, etc., to protect consumer against known or unknown water issues or concerns. **RU300** series for chlorinated municipal water. **RU400** series for potable non-chlorinated, well or municipal supplies. **RU500** series optional for harsh well water. Add UV module for the additional safeguard from bacterial, viral, e-coli and microorganisms. Be aware that RO has specific issues and drawbacks (ie: wasted water, limited production, storage tank space, very aggressive water), and has specific applications, making these systems widely misapplied.

www.ewswater.com **office: 702-256-8182 (m-f; 8:30-4:30, pst)** **fax: 702-256-3744** customerservice@ewswater.com

FDA, EPA and NSF Compliances

Please be advised that all the materials and components utilized in producing all POU (Point of Use) drinking water filtration and reverse osmosis systems, and all POE (Point of Entry) filtration, conditioning and softening equipment, by EWS, Inc., comply with, but are not limited to, one or more of the following regulating standards:

NSF STANDARD 14	FDA 21 CFR 177.1520	FDA 21CFR 177.1640
FDA 21 CFR 177.1350	FDA 21 CFR 175.105	CAS # 7440-44-0
ANSI 304	CDA C360000	NSF STANDARD 60
NSF STANDARD 61	NSF STANDARD 58	ANSI 302
ANSI 316	FDA 21 CFR 177.2600	FDA 21 CFR 175.300
FDA 21 CFR 177.2550	NSF STANDARD 52	NSF STANDARD 42
NSF STANDARD 18	FDA 21 CFR 177.2550	FDA 21 CFR 177.1655
FDA 21 CFR 177.1630	FDA 21 CFR 177.2800	FDA 21 CFR 175.300
FDA 21 CFR 177.2260	FDA 21 CFR 181.32	FDA 21 CFR 177.2660
FDA 21 CFR 177.1950	FDA 21 CFR 177.2910	FDA 21 CFR 177.2250
FDA 21 CFR 177.1680	NSF STANDARD 53	NSF STANDARD 55

- Most of these standards relate to the Code of Federal Regulations of the United States of America, Title 21, Charter 1, Subchapter B set forth by the U.S. Food and Drug Administration.
- The NSF (National Sanitation Foundation) standards correlate to materials and potable water.

Furthermore, and without, exception every component included in all POU and POE systems by EWS, Inc. are compliant for food and beverage contact and/or meet or comply with the most current, appropriate, and applicable standards without exception.

Factory Preparation:
All systems are factory prepared and thoroughly checked to assure proper function and if applicable, quality tests of product water produced to assure that minimum standards of rejection have been met, and/or tests of specific components to assure correct function and flow rate measurements to assure efficiency specifications are met.

Product Performance:
♦ For all product capabilities, compliances and/or warranties to remain valid, all systems are dependent upon proper application, specification, and installation of any specific unit and/or combination of units.
♦ Please know your local or individual water condition(s), and plumbing application(s). Please review system(s) capabilities, applications, setup, installation, startup, maintenance, and related warranties.
♦ Detailed information is published in EWS Product Manuals and specific Product Service Guides (included with each specific unit) and made available upon request throughout US distribution and/or EWS corporate offices. All current information is available online @ www.ewswater.com or www.ewswater.com/techandspec.html

EWS, Inc. / Environmental Water Systems

The complete EWS, Inc./Environmental Water System
product line from sink to whole-home, available through:

Available on the Internet through Authorized Retail Web Distributors
www.watersontheweb.com
and
Business-to-Business E-Commerce Distributors.

Available through Authorized Building Wholesale Supply Locations, Kitchen & Bath Showrooms and Appliance Dealers, and their Building and Plumbing Contractors throughout the United States.

EWS, INC. and Environmental Water Systems
A Complete Line of Water Filtration Product from Sink to Whole-Home

Telephone: 702-256-8182
M-F, 8:30am - 4:30pm
Pacific Standard Time

Fax: 702-256-3744

E-Mail: customerservice@ewswater.com

Web Site: www.ewswater.com

For all product information, service guides, technical specifications, well water applications, go to: www.ewswater.com/techandspec.html

ALL FILTRATION PRODUCT MANUFACTURED AND ASSEMBLED IN THE USA