



Care and Use Manual Tank Series Appliances

Information Provided for the Proper Set-Up, Installation and Start-Up of the following Appliances:

- EWS Series of Whole Home Filtration and Physical Conditioning:**
EWS-1054, EWS-1354, EWS-1354-HF, EWS1354-11/2”
- CWL Series of Whole Home Filtration:**
CWL-1054, CWL-1354, CWL-1354-HF, CWL-1354-11/2”
- Iron Removal Series:**
EWS-1054-P, EWS-1354-P, EWS-1354-11/2”-P



To the Installer: Please Read and Leave this Owner's Manual with the Unit or the Consumer
To the Consumer: Retain this Care & Use Manual for Product Registration and Future Reference



IF YOU ONLY READ ONE PAGE IN THIS MANUAL - THIS IS IT !!! 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:** Since handling and moving the unit may loosen the valve head - make sure to Check and Tighten Valve Head on the Tank. Hand Tighten the Valve Head in a Clockwise Direction. Make sure tank cover, if applicable does not interfere or cut into the connection.
- 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 (1/2" or 3/4") 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.

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.

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 (12 GPM for 1354 Iron units) 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 galvanized 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. 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.



Set-Up and Installation:

CWL-1054, CWL-1354; EWS-1054, EWS-1354

DIMENSIONS OF UNITS TO BE INSTALLED:



CWL-1054: or EWS-1054:

Service Line Size: 3/4" - 1"
Flow Rate: up to 15 gpm
Drain Line Size: min: 1/2"

Installed Dimensions:

Height: 62"; Width: 10"
Dry Weight: est: 105 lbs.
Inlet/Outlet Height: 56"
Drain Port Height: 57"

Plumbing Clearances:

Minimum of 18" from front of unit to back wall for plumbing
Drain Flow: up to 4 gpm
Discharge: up to 18-26 gallons

Bypass and male threaded 1" NPT yoke (included) must be installed with valve

CWL-1354: or EWS-1354:

Service Line Size: 3/4" - 1"
Flow Rate: up to 15 gpm
Drain Line Size: min: 1/2"***

Installed Dimensions:

Height: 62"; Width: 13"
Dry Weight: est: 135 lbs.
Inlet/Outlet Height: 56"
Drain Port Height: 57"

Plumbing Clearances:

Minimum of 18" from front of unit to back wall for plumbing
Drain Flow: up to 7 gpm
Discharge: up to 22-38 gallons

Bypass and male threaded 1" NPT yoke (included) must be installed with valve



1 - PREPARE FOR INSTALLATION:

■ **Check the Following:** Main Water Supply Line, Drain Access, Electrical Outlet, and Clearances to complete the install.

Location of Tank: 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.

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 direct sunlight, and never allow unit, the drain line and any water to freeze.

Electrical: An uninterrupted alternating current (A/C) supply is required. The system is ideally located within 4-6 feet of a 110 volt outlet to allow the unit to be plugged in. A 24 volt motor and transformer is available for longer electrical runs (use 10-2 regular lamp gauge wire). The 24 volt transformer must be located inside.

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 galvanized or combinations of plumbing materials can cause water issues and conditions.

Drain Connection: Nominal drain line and drain size 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. 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.

■ **Check Incoming Water Pressure and Flow Rates:** A minimum of 35 PSI and 8 GPM 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), or limiting pressure to 75 PSI is recommended for this and many other kitchen and bath products in your home. Automatic valve is rated for 100 PSI and the tank is rated for 150 PSI, however the overall system with various connections has limitations to excessive pressure. Water pressure measuring 75 PSI during the day may surge to over 100 PSI at night when the automatic backwash occurs.

Install (often required by code) a pressure regulator (PRV) if the water pressure exceeds or can surge above 75 PSI.

2 - UNBOX UNIT: CHECK TANK AND VALVE AND LOCATE BYPASS AND MALE YOKE:

1) PLACE THE TANK WHERE YOU WANT TO INSTALL THE UNIT.

• Make sure the tank is level and on a firm base. Black bases on tanks are glued-on and self-leveling. If necessary, lift tank - tap base to floor - on the bottom side, in order to level unit. Take note of the clearances necessary to complete the installation.

2) CHECK AND TIGHTEN VALVE HEAD ON THE TANK.

• Hand Tighten the Valve Head in a Clockwise Direction. Make sure the stainless tank cover or plastic dome (1354 units) does not interfere or cut into the connections. Stainless covers are non-functional, if "dinged" in handling, turn to good side.

3) CONNECT BYPASS VALVE AND MALE YOKE TO VALVE HEAD.

• Make sure bypass valves are facing up. Keep bypass valve level (horizontal). Do not put, upward or downward, pressure on bypass valve, this will not allow nipples and o-rings to seat squarely and completely.



3 - PLUMBING LINE CONNECTIONS:

1) IDENTIFY THE MAIN WATER SUPPLY.

- Do Not Assume. You may have to perform “the old bucket test” to determine where the water is coming from.
- Make sure the whole facility is on the line. Some cold water lines (kitchen, island, wet bar sinks, refrigerators, ice-makers) may have been plumbed separately, if previously plumbed for softened (salts) water. You may have to recapture those lines by replumbing that manifold. Or, capture the main water supply before the bypassed or “looped” away lines, usually found at, or after, the main water shut off. However, some plumbing designs prevent this ideal installation. A sink (point of use) filtration unit can be used for that missed location.
- Hose bibs are unnecessary to capture unless required by consumer. Irrigation (which should tee-off prior to the home’s main water supply) uses a lot of water and this connection should be discouraged. It puts an unnecessary burden on the unit and the media.

2) USING THE CONNECTED BYPASS VALVE AND 1” MALE NPT YOKE.

3) PLUMB INLET (supply) AND OUTLET (filtered) INTO THE UNIT.

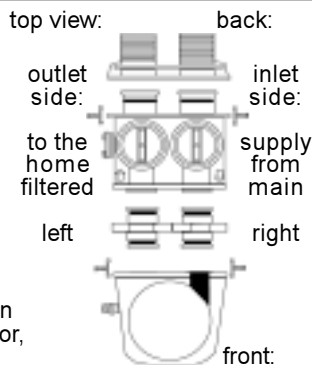
- Follow the directional arrows molded onto the valve body and bypass. See pictures below for; top/front/back and left/right views to prevent plumbing the unit backwards. Teflon tape is the only sealant to used on any of our fittings.
- NO Heat, No Torch; Leave at least 12” between the male yoke and any solder joints. Failure to do this could cause interior damage. Consider flexible stainless (1”FNPT x 1”FNPT (3/4” if your application) and at least 18” in length) connected to copper male adapters, or some other applicable connection - no heat, saves time, neat install, if applicable/code to your application.

4) WARNING: ONCE PLUMBED, DO NOT TURN ON WATER, UNTIL YOU BEGIN START-UP PROCEDURES.

Note: If, recirculating pump on water heater, unplug pump before turning off water supply. Prevents damage to the pump motor.



Outlet (filtered) Side:
left side view of valve and drain port with included drain adaptor, bypass and male yoke



- Yoke 1” MNPT
- Dual Port Bypass
- O-Ring Connect
- Valve Head

- Must use dual-port, full flow, noryl bypass with 1” MNPT yoke.
- Shuts off water to/from the unit
- No additional plumbing for media replacement or maintenance
- Less costly plumbing installation, easier start-ups, non-corrosive



Inlet (supply) Side:
right side view of valve with included bypass and male yoke

4 - DRAIN CONNECTIONS:

1) LOCATE DRAIN PORT ON THE LEFT (OUTLET) SIDE OF THE VALVE HEAD.

- Inserted into drain port is a flow control housing. The flow control housing (male o-ringed insert x 1/2”FNPT) is a plastic disc, held in by a retainer clip. The flow control housing has a flow washer which determines the flow rate in gpm from drain line.

2) DO NOT OVERTIGHTEN CONNECTIONS. IMPORTANT TO READ THE FOLLOWING:

- Nominal drain line and drain size 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. 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.
- Care must be taken when screwing in any connection to the flow control housing, not to crush piece and distort the flow washer, crucial to the effective backwashing of the system. A drain adapter or hose barb has been supplied and is only loosely connected. You may use this or any other applicable adaptor or connector depending on your drain line.
- Flexible tubing, poly tubing or any hose must be clamped (do not overtighten) and do not allow any tubing to kink.
- Hard piping of drain line: NO Heat, NO Torch, leave at least 12” between drain port and any solder joints - remember to use a union (a quick disconnect feature) for future servicing applications. Therefore, the system will require no replumbing.
- Teflon tape is the only sealant to be used on any drain fitting.

3) LOCATE A SUITABLE PLACE TO DRAIN.

- A suitable place to drain the backwash water must be available. Usually, into a drain or trap, or outside that has sufficient percolation. You can be flexible or creative. Do not connect the backwash line to an air conditioning drain line. Do not freeze.
- Air gap must be used, if connecting to a drain line or sewer trap, to prevent possible back siphoning into the tank.
- Backwash is a mechanical way of turning over the filtration media. The discharge is only water and not a brine. The water discharge can go anywhere, may be used, or recycled, and does not have the legal restrictions or issues of brine discharge.

5 - SYSTEM START-UP PROCEDURES; GO TO PAGE 14



Set-Up and Installation:

CWL-1354-HF; EWS-1354-HF; EWS-1054-P, EWS-1354-P

DIMENSIONS OF UNITS TO BE INSTALLED:



CWL-1354-HF: EWS-1354-HF:
 Service Line Size: 1-11/4"
 Flow Rate: up to 22 gpm
 Drain Line Size: min: 1/2"***

Installed Dimensions:

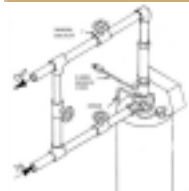
Height: 63"; Width: 13"
 Dry Weight: est. 155 lbs.
 Inlet Height: 56 1/2"
 Outlet Height: 58 1/2"
 Drain Port Height: 57"

Plumbing Clearances:

Minimum of 24" from front of unit
 to back wall for plumbing
 Height: 72" Width: 18"

Drain Flow: up to 7 gpm
 Discharge: up to 22-38 gallons

Bypass needs to be plumbed



Schematic all valves

**EWS-1054-P: EWS-1354-P
 Iron Removal Systems**

Service Line Size: 3/4" - 1 1/4"
 Flow Rate: up to 15 gpm
 Drain Line Size: min: 1/2"***

Installed Dimensions:

Height: 63"; Width: 13" (10"; 1054)
 Dry Weight: est. 245 lbs (185; 1054)
 Inlet Height: 56 1/2"
 Outlet Height: 58 1/2"
 Drain Port Height: 57"

Plumbing Clearances:

Minimum of 24" from front of unit
 to back wall for plumbing
 Height: 72" Width: 18"

Drain Flow: up to 7 gpm
 Discharge: up to 22-38 gallons

Bypass needs to be plumbed



Iron Systems:
 Do not include
 stainless covers.
 Due to shipping
 weight, may have
 to be assembled
 on site.

See Page 18

1 - PREPARE FOR INSTALLATION:

■ **Check the Following:** Main Water Supply Line, Drain Access, Electrical Outlet, and Clearances to complete the install.

Location of Tank: 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.

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 direct sunlight, and never allow unit, the drain line and any water to freeze.

Electrical: An uninterrupted alternating current (A/C) supply is required. The system is ideally located within 4-6 feet of a 110 volt outlet to allow the unit to be plugged in. A 24 volt motor and transformer is available for longer electrical runs (use 10-2 regular lamp gauge wire). The 24 volt transformer must be located inside. Use set screw to secure transformer to outlet.

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 galvanized or combinations of plumbing materials can cause water issues and conditions.

Drain Connection: Nominal drain line and drain size should be a minimum of 1/2". **Backwash flow rates of 7 GPM (all units above) with drain line exceeding 20' in length require 3/4" line and drain. 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.

■ **Check Incoming Water Pressure and Flow Rates:** A minimum of 35 PSI (40 PSI for Iron units) and 8 GPM (12 GPM for 1354 Iron units) 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), or limiting pressure to 75 PSI is recommended for this and many other kitchen and bath products in your home. Automatic valve is rated for 100 PSI and the tank is rated for 150 PSI, however the overall system with various connections has limitations to excessive pressure. Water pressure measuring 75 PSI during the day may surge to over 100 PSI at night when the automatic backwash occurs.

Install (often required by code) a pressure regulator (PRV) if the water pressure exceeds or can surge above 75 PSI.

2 - UNBOX UNIT: CHECK TANK AND VALVE:

1) PLACE THE TANK WHERE YOU WANT TO INSTALL THE UNIT.

• Make sure the tank is level and on a firm base. Black bases on tanks are glued-on and self-leveling. If necessary, lift tank - tap base to floor - on the bottom side, in order to level unit. Take note of the clearances necessary to complete the installation.

2) CHECK AND TIGHTEN VALVE HEAD ON THE TANK.

• Hand Tighten the Valve Head in a Clockwise Direction. Make sure the stainless tank cover or plastic dome (1354 units) does not interfere or cut into the connections. Stainless covers are non-functional, if "dinged" in handling, turn to good side.



3 - PLUMBING LINE CONNECTIONS:

1) IDENTIFY THE MAIN WATER SUPPLY.

- Do Not Assume. You may have to perform “the old bucket test” to determine where the water is coming from.
- Make sure the whole facility is on the line. Some cold water lines (kitchen, island, wet bar sinks, refrigerators, ice-makers) may have been plumbed separately, if previously plumbed for softened (salts) water. You may have to recapture those lines by replumbing that manifold. Or, capture the main water supply before the bypassed or “looped” away lines, usually found at, or after, a main water shut off. However, some plumbing designs prevent this ideal installation. A sink (point of use) filtration unit can be used for that missed location.
- Hose bibs are unnecessary to capture unless required by consumer. Irrigation (which should tee-off prior to the home’s main water supply) uses a lot of water and this connection should be discouraged. It puts an unnecessary burden on the unit and the media.

2) PLUMB INLET (supply) AND OUTLET (filtered) INTO THE UNIT AND PLUMB BYPASS VALVE BETWEEN.

- Follow the directional arrows molded onto the valve body. See picture below for correct set-up.
- Use unions (a quick disconnect feature) at the inlet and outlet pipe, as pictured, to allow future servicing of system without cutting and replumbing
- Use Ball Valves (preferred - easy to turn on/off) at inlet/outlet pipes and bypass, as pictured for proper installation.
- NO Heat, No Torch; Leave at least 12” between the valve body and any solder joints. Solder joints prior to connecting to valve body. Failure to do this could cause interior damage. Teflon tape is the only sealant to used on any of our fittings.

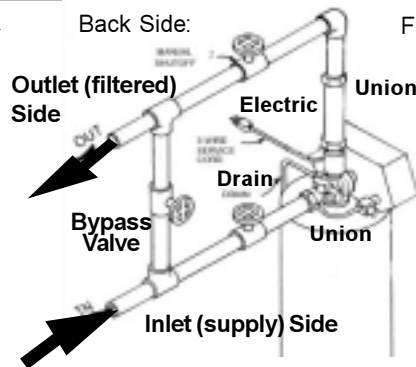
4) WARNING: ONCE PLUMBED, DO NOT TURN ON WATER, UNTIL YOU BEGIN START-UP PROCEDURES.

Note: If, recirculating pump on water heater, unplug pump before turning off water supply. Prevents damage to the pump motor.

Materials Needed for Installation:

- 1” pipe length to be determined
- 3 - 1” Ball Valves
- 2 - 1” Unions
- See Drain Requirements

DO NOT TURN ON WATER, OPEN ANY VALVES OR PLUG IN THE ELECTRICAL UNTIL YOU GO TO THE START-UP PROCEDURES ON PAGES 14-17



- Back Side:
- Front Side:
- HF - High Flow 2750 Valve
- Valve Cover: Blue NEMA 1 Rated for resistance to dust and moisture.
- Hinged: left
- Opens: from right
- Controls: inside

- Drain: 3/4” MNPT
- Connected (included) to: Brass Flow Control Housing with 7 GPM Flow Restrictor 3/4” FNPT x 1/2” FNPT

- Materials Needed for Drain:
- 1/2” copper x male adapter
 - 1/2” union
 - 1/2” (min) drain line length to be determined

4 - DRAIN CONNECTIONS:

1) LOCATE DRAIN PORT ON THE SIDE OF THE VALVE HEAD.

- Screwed onto the drain port is a brass flow control housing. The flow control housing has a flow washer which determines the flow rate in gpm from drain line.

2) DO NOT OVERTIGHTEN CONNECTIONS. IMPORTANT TO READ THE FOLLOWING:

- Nominal drain line and drain size should be a minimum of 1/2”. **Backwash flow rates of these units (7 GPM) with drain line exceeding 20’ in length require 3/4” line and drain. 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.
- Care must be taken when screwing in any connection to the flow control housing, not to crush piece and distort the flow washer, crucial to the effective backwashing of the system. You may use any applicable adaptor or connector depending on your drain line.
- Hard piping of drain line: NO Heat, NO Torch, leave at least 12” between drain port and any solder joints. Solder joints before connecting to drain port.
- Use a union (or quick disconnect feature) for future servicing applications. Therefore, the system will require no replumbing.
- Teflon tape is the only sealant to be used on any drain fitting.

3) LOCATE A SUITABLE PLACE TO DRAIN.

- A suitable place to drain the backwash water must be available. Usually, into a drain or trap, or outside that has sufficient percolation. You can be flexible or creative. Do not connect the backwash line to an air conditioning drain line. Do not freeze.
- Air gap must be used, if connecting to a drain line or sewer trap, to prevent possible back siphoning into the tank.
- Backwash is a mechanical way of turning over the filtration media. The discharge is only water and not a brine. The water discharge can go anywhere, may be used, or recycled, and does not have the legal restrictions or issues of brine discharge.

5 - SYSTEM START-UP PROCEDURES; GO TO PAGE 14



Set-Up and Installation:

CWL-1354-11/2; EWS-1354-11/2; EWS-1354-11/2-P

DIMENSIONS OF UNITS TO BE INSTALLED:



CWL-1354-11/2; EWS-1354-11/2:

Service Line Size: 1 1/2"
Flow Rate: up to 50 gpm
Drain Line Size: min: 3/4"

Installed Dimensions:

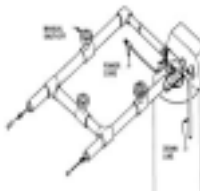
Height: 63"; Width: 13"
Dry Weight: est: 165 lbs.
Inlet Height: 56"
Outlet Height: 57"
Drain Port Height: 58"

Plumbing Clearances:

Minimum of 24" from front of unit
to back wall for plumbing
Height: 63" Width: 24"

Drain Flow: up to 10 gpm
Discharge: up to 35-50 gallons

Bypass needs to be plumbed



Schematic all valves

EWS-1354-11/2-P

Iron Removal System

Service Line Size: 1 1/2"
Flow Rate: up to 35 gpm
Drain Line Size: min: 3/4"

Installed Dimensions:

Height: 63"; Width: 13"
Dry Weight: est: 255 lbs
Inlet Height: 56"
Outlet Height: 57"
Drain Port Height: 58"

Plumbing Clearances:

Minimum of 24" from front of unit
to back wall for plumbing
Height: 63" Width: 24"

Drain Flow: up to 10 gpm
Discharge: up to 35-50 gallons

Bypass needs to be plumbed



Iron Systems:
Do not include
stainless covers.
Due to shipping
weight, may have
to be assembled
on site.

See Page 18

1 - PREPARE FOR INSTALLATION:

■ **Check the Following:** Main Water Supply Line, Drain Access, Electrical Outlet, and Clearances to complete the install.

Location of Tank: 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.

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 direct sunlight, and never allow unit, the drain line and any water to freeze.

Electrical: An uninterrupted alternating current (A/C) supply is required. The system is ideally located within 4-6 feet of a 110 volt outlet to allow the unit to be plugged in. A 24 volt motor and transformer is available for longer electrical runs (use 10-2 regular lamp gauge wire). The 24 volt transformer must be located inside. Use set screw to secure transformer to outlet.

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 galvanized or combinations of plumbing materials can cause water issues and conditions.

Drain Connection: Nominal drain line and drain size should be a minimum of 3/4". Backwash flow rates of 10 GPM (all units above) with drain line exceeding 20' in length require 3/4" line and drain. 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.

■ **Check Incoming Water Pressure and Flow Rates:** A minimum of 35 PSI (40 PSI for Iron units) and 8 GPM (12 GPM for 1354 Iron units) 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), or limiting pressure to 75 PSI is recommended for this and many other kitchen and bath products in your home. Automatic valve is rated for 100 PSI and the tank is rated for 150 PSI, however the overall system with various connections has limitations to excessive pressure. Water pressure measuring 75 PSI during the day may surge to over 100 PSI at night when the automatic backwash occurs.

Install (often required by code) a pressure regulator (PRV) if the water pressure exceeds or can surge above 75 PSI.

2 - UNBOX UNIT: CHECK TANK AND VALVE:

1) PLACE THE TANK WHERE YOU WANT TO INSTALL THE UNIT.

• Make sure the tank is level and on a firm base. Black bases on tanks are glued-on and self-leveling. If necessary, lift tank - tap base to floor - on the bottom side, in order to level unit. Take note of the clearances necessary to complete the installation.

2) CHECK AND TIGHTEN VALVE HEAD ON THE TANK.

• Hand Tighten the Valve Head in a Clockwise Direction. Make sure the stainless tank cover or plastic dome (1354 units) does not interfere or cut into the connections. Stainless covers are non-functional, if "dinged" in handling, turn to good side.



3 - PLUMBING LINE CONNECTIONS:

1) IDENTIFY THE MAIN WATER SUPPLY.

- Do Not Assume. You may have to perform "the old bucket test" to determine where the water is coming from.
- Make sure the whole facility is on the line. Some cold water lines (kitchen, island, wet bar sinks, refrigerators, ice-makers) may have been plumbed separately, if previously plumbed for softened (salts) water. You may have to recapture those lines by replumbing that manifold. Or, capture the main water supply before the bypassed or "looped" away lines, usually found at, or after, a main water shut off. However, some plumbing designs prevent this ideal installation. A sink (point of use) filtration unit can be used for that missed location.
- Hose bibs are unnecessary to capture unless required by consumer. Irrigation (which should tee-off prior to the home's main water supply) uses a lot of water and this connection should be discouraged. It puts an unnecessary burden on the unit and the media.

2) PLUMB INLET (supply) AND OUTLET (filtered) INTO THE UNIT AND PLUMB BYPASS VALVE BETWEEN.

- Follow the directional arrows molded onto the valve body. See picture below for correct set-up.
- Use unions (a quick disconnect feature) at the inlet and outlet pipe, as pictured, to allow future servicing of system without cutting and replumbing
- Use Ball Valves (preferred - easy to turn on/off) at inlet/outlet pipes and bypass, as pictured for proper installation.
- NO Heat, No Torch; Leave at least 12" between the valve body and any solder joints. Solder joints prior to connecting to valve body. Failure to do this could cause interior damage. Teflon tape is the only sealant to used on any of our fittings.

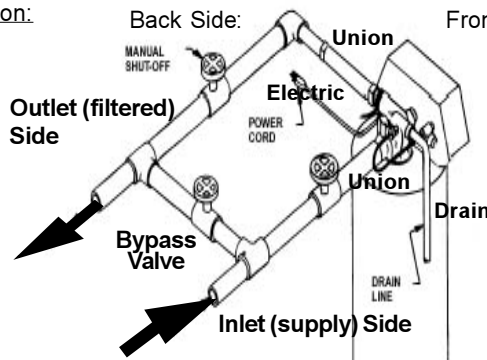
4) WARNING: ONCE PLUMBED, DO NOT TURN ON WATER, UNTIL YOU BEGIN START-UP PROCEDURES.

Note: If, recirculating pump on water heater, unplug pump before turning off water supply. Prevents damage to the pump motor.

Materials Needed for Installation:

- 1 1/2" pipe length to be determined
- 3 - 1 1/2" Ball Valves
- 2 - 1 1/2" Unions
- See Drain Requirements

DO NOT TURN ON WATER, OPEN ANY VALVES OR PLUG IN THE ELECTRICAL UNTIL YOU GO TO THE START-UP PROCEDURES ON PAGES 14-17



- Front Side:
- 1 1/2" 2850 Valve
- Valve Cover: Black NEMA 1 Rated for resistance to dust and moisture.

- Drain:
- 1" MNPT
- Connected (included) to: Brass Flow Control Housing with 10 GPM Flow Restrictor
- 1" FNPT x 3/4" FNPT

- Hinged: left
- Opens: from right
- Controls: inside

- Materials Needed for Drain:
- 3/4" copper x male adapter
- 3/4" union
- 3/4" (min) drain line length to be determined

4 - DRAIN CONNECTIONS:

1) LOCATE DRAIN PORT ON THE SIDE OF THE VALVE HEAD.

- Screwed onto the drain port is a brass flow control housing. The flow control housing has a flow washer which determines the flow rate in gpm from drain line.

2) DO NOT OVERTIGHTEN CONNECTIONS. IMPORTANT TO READ THE FOLLOWING:

- Nominal drain line and drain size should be a minimum of 3/4". Backwash flow rates of these units (10 GPM) with drain line exceeding 20' in length require 3/4" line and drain. 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.
- Care must be taken when screwing in any connection to the flow control housing, not to crush piece and distort the flow washer, crucial to the effective backwashing of the system. You may use any applicable adaptor or connector depending on your drain line.
- Hard piping of drain line: NO Heat, NO Torch, leave at least 12" between drain port and any solder joints. Solder joints before connecting to drain port.
- Use a union (or quick disconnect feature) for future servicing applications. Therefore, the system will require no replumbing.
- Teflon tape is the only sealant to be used on any drain fitting.

3) LOCATE A SUITABLE PLACE TO DRAIN.

- A suitable place to drain the backwash water must be available. Usually, into a drain or trap, or outside that has sufficient percolation. You may be flexible or creative. Do not connect the backwash line to an air conditioning drain line. Do not freeze.
- Air gap must be used, if connecting to a drain line or sewer trap, to prevent possible back siphoning into the tank.
- Backwash is a mechanical way of turning over the filtration media. The discharge is only water and not a brine. The water discharge can go anywhere, may be used, or recycled, and does not have the legal restrictions or issues of brine discharge.

5 - SYSTEM START-UP PROCEDURES; GO TO PAGE 14



Start-Up Procedure for All Units

- The tank unit(s) have now been plumbed in with the inlet, outlet and drain connections made in accordance with the manufacturer's recommendations and meets applicable plumbing codes.
- Now, it is time to fill it with water, plug the unit in, and properly start it up by following the start-up procedures below.
- These units are similar to water heaters and other point of entry product. They must be plumbed correctly and filled slowly while relieving pressure. These units are also similar to other sink filtration product. They must be flushed before beginning usage.
- **Making the connections, turning on the water and walking away is an improper installation. Period.**
- **Failure to start up unit properly may cause service issues, unhappy consumers, and will void the warranty.**

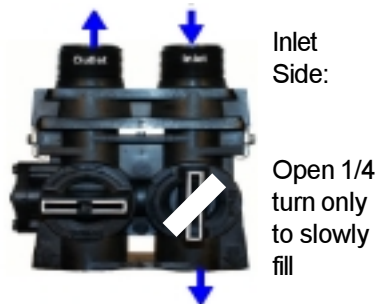
STEP 1: FILL THE TANK WITH WATER - SLOWLY!

Units: CWL-1054, CWL-1354 EWS-1054, EWS-1354	Units: CWL-1354-HF EWS-1354-HF EWS-1054-P, EWS1354-P (Iron)	Units: CWL-1354-11/2 EWS-1354-11/2 EWS-1354-11/2-P (Iron)
See Left Column	See Middle Column	See Right Column
You Must Use: Bypass and Male-Threaded Yoke Included	You Must Plumb: Inlet/Outlet and Bypass per Schematic	You Must Plumb: Inlet/Outlet and Bypass per Schematic

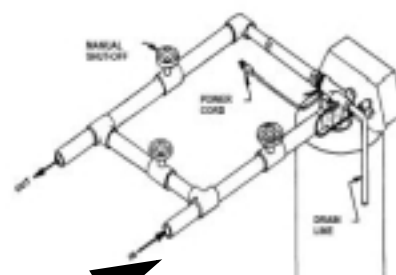
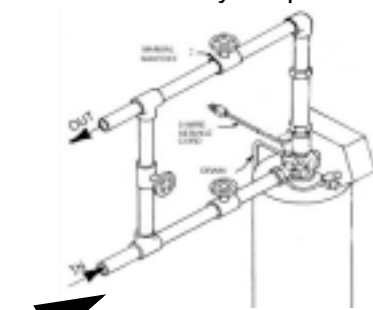
STEP 1-A: PARTIALLY OPEN INLET SIDE ONLY

Following a slow fill procedure will make the backwash and flushing steps easier and more effective.

PARTIALLY OPEN - 1/4 TURN (as illustrated) on inlet supply side only to fill tank slowly. Keep outlet side closed



PARTIALLY OPEN - 1/4 TURN with (preferred) Ball Valve or Slowly and Partially Open Gate Valve on inlet supply side only to fill tank slowly. Keep outlet side and bypass valves closed.



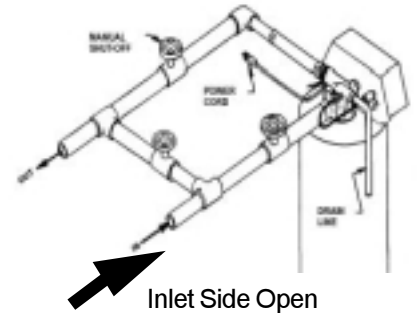
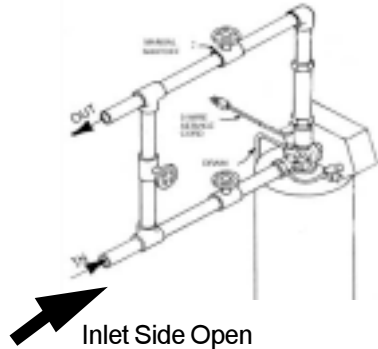
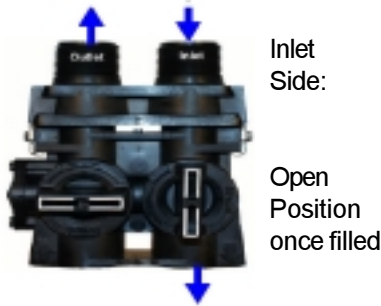
Once the tank has been slowly filled, go to the next page. Follow the remaining simple procedures.



STEP 1-B: TANK IS FILLED, OPEN INLET COMPLETELY

SLOWLY OPEN - (as illustrated) on inlet supply side only. Keep outlet side closed.

SLOWLY OPEN - Completely open (preferred) Ball Valve or Gate Valve on inlet supply side only. Keep outlet side and bypass valves closed.



Tank is completely filled when sound of water stops or at a slow pace of 1-2 GPM it will take 5-10 minutes. Keep outlet side closed until later.

STEP 2: PLUG IN THE ELECTRICAL

Plug the 24 volt transformer into any unswitched electrical outlet or an acceptable extension to that outlet. Be sure that if plugged into a GFI outlet that the outlet has been reset. Please inform the consumer of the need for an unswitched outlet which can not be turned off and that GFI outlets need to be occasionally checked for operation. Please follow all applicable local codes. If using an extension, make sure of a complete and secure connection. No spliced connections. Do not break into wires with fasteners or staples. Make sure transformer has a snug and secure connection to outlet (larger units must use set screws to secure transformer to outlet). Electrical is used to bring power to the digital valve, in order to keep the time and operate the automatic backwash program. Cost of this operation is similar to the cost of a radio alarm clock.

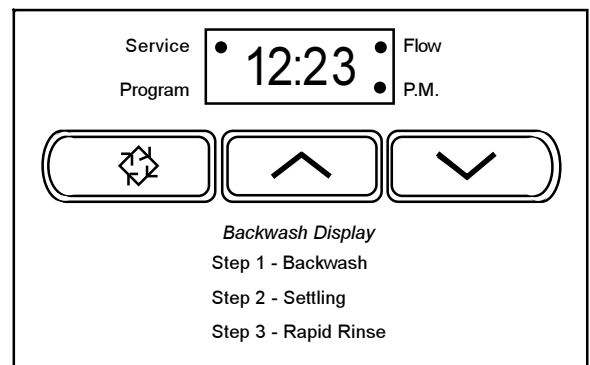
STEP 3: SET THE TIME OF DAY



"Up" and "Down" buttons

- Push either the "Up" or "Down" button once to adjust Time of Day display by one digit.
- Push and hold either the "Up" or "Down" button to adjust Time of Day display by several digits.

EXAMPLE: Current time of day would be 12:23 p.m.



Note: "P.M." diode is lit, indicating it is the afternoon.

Go to the next page and follow the final procedures to backwash and flush the system.



STEP 4: BACKWASHING AND FLUSHING THE SYSTEM

The purpose of the backwash and flush procedure is to remove media dust and fines from the system instead of going into the home and to prepare the system for usage. There will be the occasional fleck or flake, however following this procedure will greatly reduce this issue.

Following the remaining procedures is a helpful way of checking the installation of the system. Is it plumbed in correctly with main supply of water to inlet, the outlet to the home and a correct drain application (and bypass, if applicable)? Pressure limited to 75 PSI, with a minimum of 35 PSI (40 PSI for Iron units) and a flow rate of at least 8 GPM (12 GPM for 1354 units)?

STEP 4-A: BACKWASH



"Recycle" Button

ACTION:

■ **Push and Hold "Recycle" button** to start the backwash cycle until the **number "1" begins flashing** in the first position of the display (as illustrated on the right).

Note: It can take up to 20 seconds as valve moves into cycle

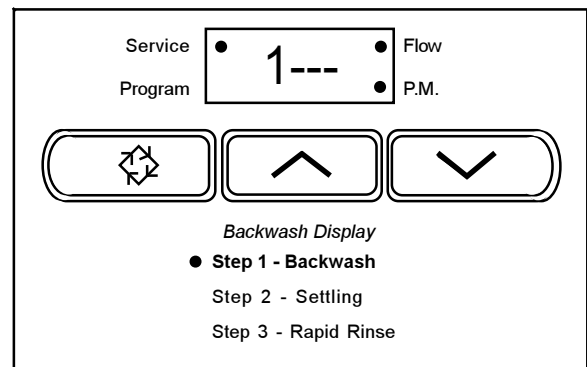
■ Allow system to go into backwash. Cycle will last for 9 minutes. Display (1 - - 9) will count down until backwash cycle is finished.

OBSERVATION:

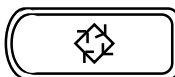
- After the initial "sputtering" you should get a good flow under pressure out of the drain line. The initial drain water is gray (fines and dust). At the end of a proper backwash procedure that drain water will clear.
- HF and 11/2" valves have greater flow characteristics and greater lift of media and make a mechanical noise as the valve piston drives into the valve body and the flushing could produce noise. This is normal. If too loud, the automatic backwash time can be re-set to a day time, instead of the quiet of the evening. See Page 18 to Re-Set the Backwash Time.

Not getting a good flow out of the drain line?

- Check to see if the drain line is undersized, restricted, or may travel too long (especially up & over). Keep it Simple.
- Check to see if the water supply lines are plumbed backwards. You will get an initial, surge then a greatly reduced flow that does not appear to be under pressure. Remember, if plumbed correctly the inlet water is under pressure.



STEP 4-B: SETTLING



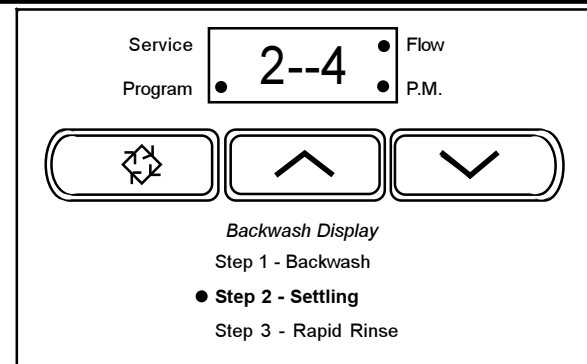
"Recycle" Button

Once backwash cycle is complete, the number "2" - - "4" will appear in the display (as illustrated on the right).

ACTION:

■ **Push "Recycle" button** until the **number "3" begins flashing** in the first position.

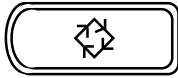
For this start up procedure, it is not necessary to complete cycle number "2". Now go to Step 4-C.



**Go to the next page to conclude the backwashing and flushing the system.
You are almost finished!**



STEP 4-C: RAPID RINSE - THE FINAL BACKWASH CYCLE



“Recycle” Button

ACTION:

■ Allow system to go into rapid rinse (it's another backwash cycle). This cycle will last for 9 minutes. Display (3 - - 9) will count down until rapid rinse cycle is finished.

Note: It can take up to 20 seconds as valve moves into cycle.

OBSERVATION:

The purpose of the manual backwash is to flush the system similar to the procedure used by smaller point of use or sink filtration units. Due to certain circumstances; ie: flow rates, PSI, weather conditions, handling, heavier media of larger units, iron units, etc., the drain water may still not run clear

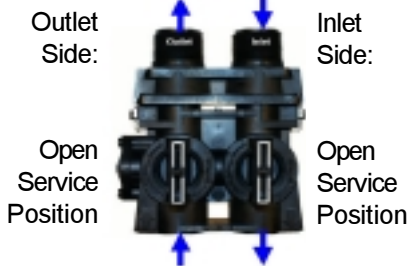
IF THE DRAIN WATER IS STILL NOT RUNNING CLEAR - REPEAT STEPS 4-A through C.

Service **3--9** Flow
 Program ● P.M.

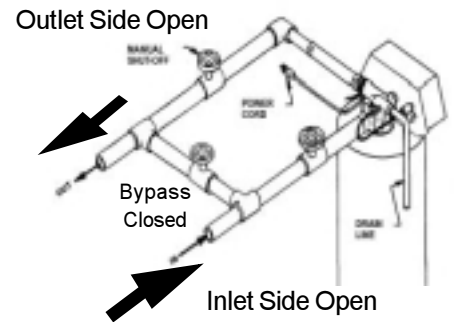
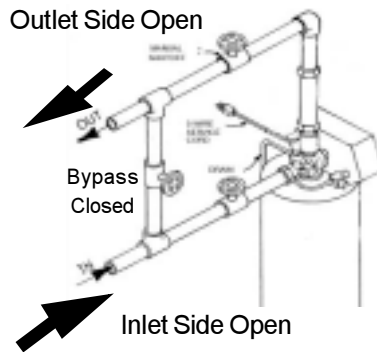
Backwash Display
 Step 1 - Backwash
 Step 2 - Settling
 ● Step 3 - Rapid Rinse

STEP 5: FINAL SERVICE POSITION

SLOWLY OPEN the outlet side the bypass valve so water will flow to the house. The system is now ready for service



SLOWLY OPEN the outlet side to the plumbed installation so water will flow to the house. Keep the bypass valve closed. The system is now ready for service



- A) Inlet and Outlet Valves are Open. Ready for Service.
- B) The display has returned to the “Time of Day” and “Service” mode and is ready to operate automatically.
 If electricity fails, the electronic controller will keep in memory the pre-set program. Use “Up and Down” buttons to reset the correct time of day.

Note: Approx. 20 minutes have elapsed during the Backwash and Flushing Procedure in Steps 4-A through C.

Service **12:43** Flow
 Program ● P.M.

Backwash Display
 Step 1 - Backwash
 Step 2 - Settling
 Step 3 - Rapid Rinse

STEP 6: PIPES AND HEATER FLUSH AND PREPARATION

Go into the home or facility and run all faucets, hot and cold, and one tub on the hot side only. When that tub is running cold, all the water now in the pipes and heaters are filtered. This totally prepares the home for usage immediately. See additional information in this manual on older homes and pre-existing conditions.



ON-SITE ASSEMBLY PROCEDURES

Due to the shipping weight of Iron Removal Systems and Commercial EWS/CWL Tank Units, these units must be assembled on site.

Unpack the Shipped Boxes and Identify the Following Components:

- Tank
- Riser only for Iron (-P) removal units and CWL Commercial units or Riser manifold with ICN's for EWS Commercial units. (find riser in separate box, in tank box, and/or within tank)
- Filtration Media is a pre-measured kit and will come in 2 or more boxes and will also include the following:
 - underbed (small heavy box labeled sand, underbed or pea gravel)
 - small riser cap
 - funnel
- Valve Head
- Service Manual (additional information provided with systems using 2" valves and greater)

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

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 the valve head by slipping upper 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.

- 8) The unit is assembled. Now - 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.

ADJUSTING BACKWASH SETTINGS

Increasing/Decreasing Backwash Frequency

Service Program **A---3** Flow P.M.

Backwash Display
Step 1 - Backwash
Step 2 - Settling
Step 3 - Rapid Rinse

Using these Controls:

Backwash Procedures and System Clock

can be found on pages 15-17

Re-Setting the Time to Start Backwash

Service Program **12:00** Flow P.M.

Backwash Display
Step 1 - Backwash
Step 2 - Settling
Step 3 - Rapid Rinse

Step 1: To Enter the Programming Mode: Push and Hold, for 5 seconds, both the "Up" and "Down" buttons. Program light will appear in lower left corner. Follow the steps below to make your adjustments.

Step 2: Once the program mode is entered, Push the "Recycle" button until "A---3" appears in the display.

Step 3: Push "Up" or "Down" button to increase or decrease the frequency the system will backwash.

Note: 3 is the factory/normal setting, reset to 7 for vacation (minimum 2; maximum 10) Remember to re-set to 3 upon return.

Step 2: When the program mode is entered, the display reads, "12:00". ("1:00 am for Iron) This is the Time of Backwash.

Step 3: Push "Up" or "Down" button to increase or decrease to change the start of a backwash to the desired time of day.

Note: Adjust for larger valves that produce noise during backwashing. Backwash takes 30 minutes to complete cycle. System is on bypass (not filtering) during cycle. 2 or more units - must set each unit an hour apart.

Step 4: To Exit the Programming Mode: Push "Recycle" button to resume normal (Service Mode) operation.



INSTALLATION SUMMARY CHECKLIST

Any problems, issues or questions about the installation?
Identify the Installed System. Consult the Service Guide for the Proper Set-Up, Installation and Start-Up or Review the Following Checklist.

- Water Pressure: minimum 35 PSI (40 PSI for Iron units), maximum 75 PSI. High pressure or surges are destructive above 75 PSI to this, and other product.
- Water Flow Rates: minimum 8 GPM (1054 units), 12 GPM (1354 units); Water Temperature: 40 - 110°F
- Where is the unit installed? Inside or Outside. If, outside, is it protected from the sun, heat, cold and/or rain?
- Inlet (supply) and Outlet (filtered) lines plumbed into system properly. Turn off incoming supply line, turn on water in various locations, does water still run under pressure throughout the home? If so, the outgoing line is supplying the unit under pressure and therefore the installation is backwards. Is water running only at the cold side at the kitchen sink, if so, that pipe may be bypassed from the entire point of entry application.
- Bypass Valve on larger CWL/EWS and Iron systems should be closed, otherwise the water will be mixed or unfiltered.
- 24 Volt Transformer plugged into an unswitched, operating electrical outlet. All connections should be secure.
- Set time of day. Come back an hour later to check advancement of time in display.
- Backwash Frequency is preset at the factory to backwash automatically every third (3rd) day at midnight. Only adjust based on your usage and/or local conditions or vacation. You may also change the time the automatic backwash starts, if backwash noise or household routine is an issue.
- Press "Recycle" button to begin a manual cycle to backwash. Check backwash drain flow. Does it flow under pressure, is the line smaller than recommended, is the line kinked or restricted? Is there an air gap?
- Unit installed on the main water line supplying the whole home. See inlet/outlet determination above or see below.
- Test chlorinated municipal water for chlorine in the water with test kit (a simple OTO test kit from a pool supply store). Run water at a several sinks and a kitchen sink, cold side only. Run water for several minutes to get a fresh reading. If bathroom tests show clear and kitchen test shows yellow - you're on a soft water loop which bypassed your kitchen sink. Have your installer re-route the bypassed line and/or reinstall properly. If both tests show clear, your on whole home. This test is effective for CWL/EWS whole home filtration appliances. Iron units remove iron, manganese and hydrogen sulfide and should also be installed to filter all the piping.

See Troubleshooting Guide for Identifying Problems, Their Cause and Their Solutions.

APPLICATION SUMMARY CHECKLIST

- What is the source of your water?
 - Municipally-Treated (water of a known and completely, routinely tested and regulated source)
 - Well Water (individual or community, water of unknown quality, limited test results, not routinely tested, unregulated)
 - Know your water and the delivery of your water, for the correct system and the correct specification.
 - What are you trying to achieve?
 - Compliment filtration to whole home of municipal water (CWL and EWS Units)
 - Condition the water (EWS Units) to help solve those problems associated with hardness without the use of harmful softeners (you do not like the slippery feeling, the hassles, the waste or salts, etc...)
 - Softening, the exchange of the naturally found calcium and magnesium minerals for sodium or potassium chloride. You grew up with a softener, you like the slippery feeling, this is what you like or used too.
 - Specific filtration needs based on independently and completely tested well water.
 - Specific need to filter for drinking water only at a point of use location (sink) based on a specific water problem or an individual need or concern.
 - Is the system(s) to be installed on a new application or one with pre-existing conditions (see our section on pre-existing conditions, identifying issues and solving problems)?
 - Has the correct system(s) been selected to solve your water issues and/or specific problems to meet your needs?
 - Has the system(s) been properly sized for your home's usage: multiple water heaters, bathrooms and the main supply line and flow rate characteristics. Larger homes or features may supercede need, even though the home may be occupied by only 2 people. Based on line service; 3/4" or 1" (1" units), 1" or 1 1/4" (HF-High Flow Valves) or 1 1/2" (1 1/2" Valve).
 - Second home or long periods away or long vacations? Do not turn water off to point of entry units, they need to backwash
- Review information provided on municipal and well water evaluation and products available for any application.
Review information provided to assist with other household product, materials and surfaces



Qualifications and Applications

Please know your water. If on a municipal system, large or small, it is your right as a consumer to have access to the most recent test results and to expect adherence to federal guidelines, as well as, any state or local requirements. Any problems should be reported to the appropriate agencies. Please acquire those municipal test results to become an informed consumer.

Please know your water. If on your own individual well, have your water completely and independently tested. Local code may require a simple test for coliform bacteria to approve a well, however you may be unaware of potential problems for you and/or your home. A local water salesman is looking to close a sale and is going to test for hardness minerals and a few simple and obvious issues, which may or may not be contamination problems. The solution is almost always the same and yet may provide no resolution to any true problems. Review our section on well water testing and applications in our complete catalog with your local distributor, dealer or our representative or visit our website.

WARNING: Some restrictions apply to the use of softeners. Contact your local municipal water district or Gov't Agency. Brine Discharge is already restricted on or may be a problem for septic applications and waste water treatment facilities. Since some states have already restricted softeners to metered valves to prevent excessive brine discharge, EWS, Inc. only provides metered valving in its' line of softeners.

Restrictions may also apply to hot-side only, salt-exchange tanks or services, or an outright ban. Local water dealers and other organizations do not inform consumers of these issues and believe these rules are unenforceable, however the consumer is ultimately responsible.

Softeners may also provide warranty issues with pools and spas, certain other products and finishes. Softened water should not be used for drinking, cooking, pets or plants and is usually bypassed or "looped away" from the cold side of the kitchen sink. Reverse osmosis, which also has its' drawbacks and issues with other products and materials, may be sold to remove the salt from the water that the softener put in at the kitchen sink, yet may be misapplied for the local water conditions.

Standard Industry Terms

The contaminants or other substances removed or reduced by these and other water filtration devices are not necessarily in your water. Performance may vary based on local water conditions. To confirm the presence of any contaminants, have your water supply analyzed by an independent and approved facility. Not intended for use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after unit(s). To ensure proper operation, follow installation procedures. Filter maintenance schedule will vary and must be replaced, as necessary, as determined by usage and local water conditions.

Contaminants and/or constituents, primary and secondary and aesthetic aspects of water, as known and acknowledged by the EPA and The Clean Water Act, will be the only basis with which test results and information will be accepted and validated.

FDA, EPA and NSF Compliances

1) Please be advised all the materials and components utilized in producing these POE and POU filtration, drinking water, and reverse osmosis systems comply with, but not limited to, one or more, of the following regulating standards:

NSF STANDARD 14, FDA 21 CFR 177.1520, FDA 21 CFR 177.1640, FDA 21 CFR 177.1350, FDA 21 CFR 175.105, CAS #7440-44-0, ANSI 304, CDA C360000, NSF STANDARDS 60 AND 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.

2) Without exception every component included in any and/or all of our systems are compliant for food and beverage contact and/or meet or comply with the most current appropriate and applicable standards without exception.

3) Performance Guidelines:

Follow EWS, Inc. detailed installation, start-up and maintenance instructions and follow all local plumbing codes. The feed water must comply with the following conditions for the system capabilities, compliances and warranties to remain valid. Water Temperature Range: 40-80°F; Water Pressure: 40-85PSI ; All systems must be connected to main or cold water supplies (hot water not to flow through systems). Units always contain water-Do not allow unit to freeze.Do not use where water is micro-biologically unsafe or with water of unknown quality without adequate disinfection before or after the unit. Reverse Osmosis Systems Only - Never allow reject water to be stopped, without the reject water flow or improper drain connection impurities may build up on membrane. POE Units do not prevent backwash or brine lines to be stopped or restricted.

4) Factory Preparation:

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

All product and components proudly manufactured and assembled in the United States of America.

EWS, Inc. 06/83, 09/99, 01/03



Limited Warranty

Limited Warranty: EWS, Inc., a Nevada corporation, hereby warrants all products to the original consumer purchaser to be free from defects in material and workmanship as stated in the following paragraphs, and as may be addressed in General Terms and Standard Conditions of Sale in the following:

All counter, undercounter, shower, residential reverse osmosis and softener units or systems for one year from date of purchase. All Environmental Water Systems, pyrolox units, pH increasing reagent tanks and whole-home basic filtration systems for 10 years on the tank and the ICN conditioner (if applicable) and three years on the valve head. Filtration media and/or cartridges are not covered by warranty. Contaminants or other substances removed or reduced by any water treatment system are not necessarily in your water. Performance may vary based on local water conditions. To confirm the presence of any contaminants, have your water supply analyzed by an independent and approved facility. Not intended for use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after units. To ensure proper operation, follow installation procedures. Filter replacement schedule will vary and must be replaced, as necessary, as determined by usage and local water conditions.

EWS, Inc. will replace, free of charge, during the warranty period, any part which proves defective in material and/or workmanship under normal installation, use, service and proper care as mentioned in our detailed instructions, which can be obtained by a local dealer, distributor, representative or direct from EWS, Inc. and/or our web address; www.ewswater.com. Replacement parts can be obtained from your local dealer or distributor. This warranty is the exclusive warranty granted by EWS, Inc. and is in lieu of all other warranties of merchantability and fitness for a particular purpose and is further limited to defective parts replacement only. Labor charges and/or damage incurred in installation, repair or replacement as well as incidental and consequential damages connected there with are excluded and will not be paid by EWS, Inc.

Purchaser's responsibility is to keep your purchase receipt and/or installation receipt; failure to do so voids the warranty. If applicable, Purchaser should fill out any registration forms and register Product by telephone, fax and/or e-mail to designated address to obtain information and updates. To obtain warranty service, contact your local dealer or plumbing contractor or write to EWS, Inc., Customer Service or e-mail to; customerservice@ewswater.com. EWS, Inc. to cover warranty service for 90 days from date of installation. A follow-up or check of any system install and operation by any persons, is not covered under any warranty, unless it has been determined there is an issue covered under warranties of product materials and workmanship. Under no circumstances will EWS, Inc. cover any service or warranties, in that or any time period, that has resulted from improper application, poor handling, set-up, installation, start-up procedure and/or lack of thorough follow through of installation procedures found on the unit and in all service guides, product manuals and websites.

This warranty is void for any damages due to misuse, abuse, neglect, accident, improper handling, set-up, installation, and/or start-up or any violation of instructions furnished by EWS, Inc. or any replacement parts other than genuine parts supplied by EWS, Inc.

Any problems of water quality, and/or fitness of any EWS, Inc. product associated with any mechanical, construction, application and/or environmental issues (ie: flow rates, high or low PSI, piping materials, broken supply lines, changing water conditions; well or municipal water quality, et. al.), known or unknown, of the home or facility will not be considered by EWS, Inc. until such issue(s) have been resolved. Taste and aesthetics may be a personal issue and are strictly subjective and not related to the performance of any system.

Consumer must look to themselves, their builder contractor, the plumbing sub-contractor and any other installer of choice for the proper installation and application of any device manufactured by EWS, Inc. (or any other product for that matter). Items do not specify and/or install themselves. EWS, Inc. has provided many sources to acquire information on proper application of systems and their installation prior to any purchase. EWS, Inc. manufactures a complete product line of point of use water filtration systems and point of entry filtration, softening and/or conditioning systems and/or appliances. EWS, Inc. and the distributors of EWS, Inc. will stand behind the warranties of materials and workmanship, however EWS, Inc. and the distributors of EWS, Inc. and the Environmental Water Systems Product Line does not bear any responsibility for improper applications of product and/or improper installation. It is for this reason that EWS, Inc. provides complete information for your understanding, specification and selection, and proper application and installation.



Policies, Procedures, General Terms and Standard Conditions of Sale

- **Legal Name:** EWS, Inc. (formerly and D/B/A Esbinco, Inc.)
- **Trade Name:** Environmental Water Systems
- **Correspondence Address:** 9101 W. Sahara Ave. #105-J8, Las Vegas, Nevada 89117
- **Office Telephone:** 702-256-8182 ■ **Office Fax:** 702-256-3744
- **Hours:** Weekdays; 8:30 am to 4:30 pm, Pacific Standard Time; Fax and Voicemail; 24/7/365
- **E-Mail:** customerservice@ewswater.com ■ **WebSite:** www.EWSWATER.com

PRICING POLICY

EWS, Inc. has a current, published, and widely distributed, Pricing Guide that contains suggested list prices for certain water filtration and conditioning products ("Products") sold by EWS, Inc. ("Seller"). Seller assumes no obligation to sell to anyone any of the Products listed herein, known or unknown, at any price.

This current Pricing Guide has been prepared for the convenience of Seller's distributors and their customers. The list prices shown are guides only and do not purport to represent actual prices in any particular market and are not intended to interfere with the right and responsibility of Seller's distributors to establish their own resale prices.

All current prices herein set forth supersede all prior lists and are subject to change without notice. Seller may also, from time to time, change, modify, alter, improve and/or discontinue without notice the sale of any of the Products listed herein.

All seller's orders are accepted and delivered based upon the Terms and Conditions found on this Pricing Policy page, found in this Pricing Guide, available in all Seller's Product Manuals and reprinted on the reverse side of all invoices submitted and monthly statements sent. Please read them carefully. They provide information that is important to Seller's distributors and their customers.

GENERAL TERMS AND STANDARD CONDITIONS OF SALE

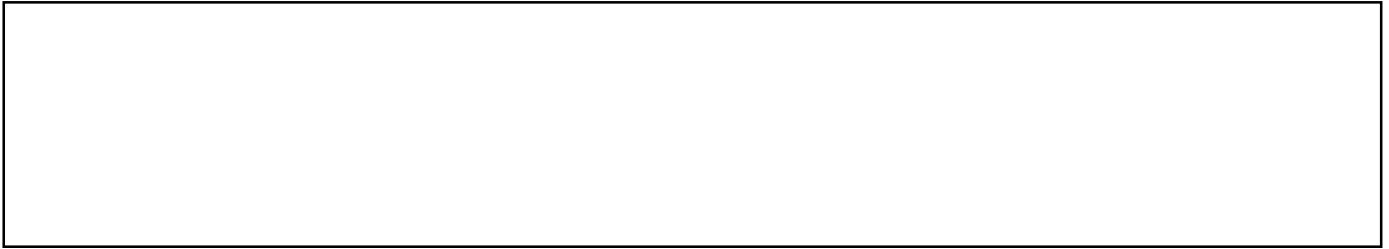
Invoices are expressly limited to and made conditional upon the terms and conditions contained herein. Objection by Buyer to any of the terms contained herein shall be deemed to have been waived (if not previously waived) if written notice of the objection is not received by EWS, Inc. ("EI") within ten calendar days of the date of the first invoice or before part of the described goods are accepted by Buyer, whichever occurs first. Any additional or different terms proposed by Buyer are rejected unless assented to in writing by EI.

1. **PRICES:** All prices are in U.S. dollars. Prices are subject to change without notice. Orders will be invoiced at prices prevailing at time of shipment. All prices are F.O.B. our warehouse, Southern California and exclusive of any shipping, delivery, packaging or handling charges that may apply.
2. **TERMS OF PAYMENT:** The terms of payment on approved accounts only shall be net thirty days in U.S. dollars from the date of invoice to date of receipt of payment in our offices for all invoiced products whether partial or complete delivery of the product under order. All past due accounts are subject to a charge of 11/2% per month (18% per annum) for each month or fraction of a month on the unpaid balance.
3. **TAXES:** Prices do not include sales, use, excise or similar taxes. The amount of any present or future sales, use, excise or other tax applicable to the sale or use of EI's products or equipment shall be paid by the Buyer unless the Buyer shall have provided EI with a tax exemption certificate acceptable to taxing authorities.
4. **ACCEPTANCE:** All purchase orders are subject to acceptance by EI at its corporate offices in Las Vegas, Nevada and are subject to these Standard Conditions of Sale, unless otherwise expressly provided.
5. **SHIPMENTS:** Delivery to carrier shall constitute delivery to customer. EI's responsibility terminates upon delivery in good order to carrier. All goods are shipped at the customer's risk. Any claim for loss or damage in transit should be made promptly by customer against carrier. These and other shipment terms are written clearly on the reverse side of all packing slips that accompany all accepted shipments. All costs of freight, transportation, handling, in-route storage, certification and other documentation are to be paid by Buyer. Any other terms will be issued to Buyer, in writing, with approved credit and an established EI/Buyer relationship.
6. **DELAYS; FORCE MAJEURE:** EI shall not be liable for delays in delivery of the goods or failure to deliver the goods caused, in whole or in part, by inability to obtain transportation, equipment, or material, insurrection, fires, floods, storms, embargoes, action of any military or civil authorities, whether legal or de facto, strikes, labor difficulties, lockouts, acts of God, or other similar or different circumstances beyond the control of EI.
7. **CANCELLATION:** The Buyer may not cancel all or part of an order without verifiable notification to, and acceptance by EI.
8. **RETURN OF MATERIALS:** No Product may be returned to EI without written approval by a Company Officer. A restocking charge of 25% will be assessed (45% if unit had been used) NO EXCEPTIONS. Product must be returned freight pre-paid, boxed and in resale condition. EI will never take responsibility, under warranty or return, for improperly installed and/or misrepresented units.
9. **SELLER'S SECURITY INTEREST:** EI shall retain a security interest in the goods sold hereunder until Buyer has paid in full for such goods provided by EI in connection therewith and has performed all of Buyer's obligations under this contract.
10. **COLLECTION:** Buyer shall reimburse EI for all costs of collection, including reasonable attorney's fees, incurred by EI to collect any monies owing under this contract. A \$45.00 service charge will be invoiced on all returned checks.
11. **WAIVER AND MODIFICATION:** No waiver or modification of any of these Standard Conditions of Sale shall be effective unless such waiver or modification is in writing and signed by an officer of the Company in Las Vegas, Nevada. In event any part of these conditions be waived, or be held to be invalid by any competent court, the remainder shall continue in force and shall be interpreted as if such waived or invalid part were not contained herein.

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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 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.

Environmental Water Systems

A Complete Line of Water Filtration Product from Sink to Whole-Home

9101 W. Sahara Avenue #105-J8
Las Vegas, Nevada 89117

Telephone: 702-256-8182 Fax: 702-256-3744

E-Mail: customerservice@ewswater.com

Visit us on the web at: www.EWSWATER.com

Register your Purchase at register@ewswater.com,
or mail or fax to the above