

Culligan[®]

**RUST MASTER[™] IRON FILTER
RM-10, RM-10D, RM-13
Installation and Operating Instructions
MODELS FROM 1990**

CULLIGAN INTERNATIONAL COMPANY/NORTHBROOK, IL & SUBSIDIARIES OR DIVISIONS
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⚠ WARNING: IF INCORRECTLY INSTALLED, OPERATED OR MAINTAINED, THIS PRODUCT CAN CAUSE SEVERE INJURY. THOSE WHO INSTALL, OPERATE, OR MAINTAIN THIS PRODUCT SHOULD BE TRAINED IN ITS PROPER USE, WARNED OF ITS DANGERS, AND SHOULD READ THE ENTIRE MANUAL BEFORE ATTEMPTING TO INSTALL, OPERATE, OR MAINTAIN THIS PRODUCT.

Attention Culligan Customer:

The installation, service and maintenance of this equipment should be rendered by a qualified and trained service technician. Your local independently operated Culligan dealer employs trained service and maintenance personnel who are experienced in the installation, function and repair of Culligan equipment. This publication is written specifically for these individuals and is intended for their use.

We encourage Culligan users to learn about Culligan products, but we believe that product knowledge is best obtained by consulting with your Culligan dealer. Untrained individuals who use this manual assume the risk of any resulting property damage or personal injury.

WARNING — Prior to servicing equipment, disconnect power supply to prevent electrical shock.

RUST MASTER™ IRON FILTER

Installation and Operating Instructions

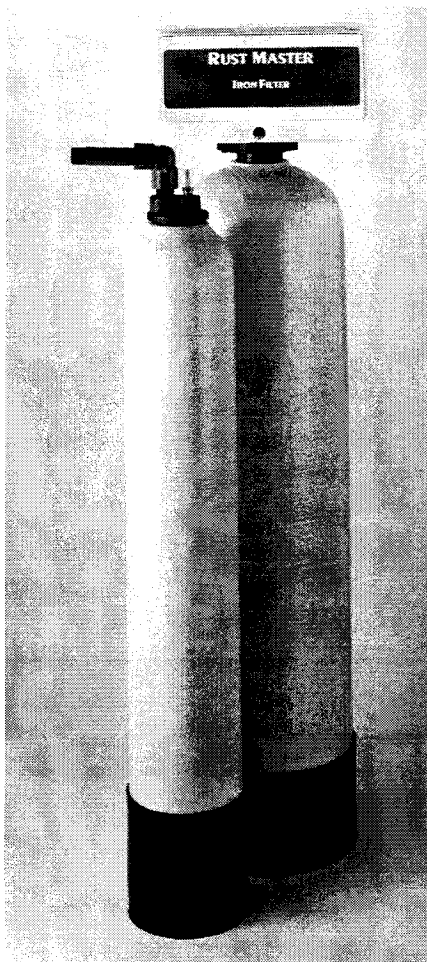


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Introduction

Please read this booklet carefully before beginning the installation of the new Culligan® Rust Master™ iron filter. It contains important information about the unit, including the tools and materials needed for installation, accessories available for hook-up to the plumbing, and instructions covering installation, settings, start-up and operation. The Culligan Rust Master has been thoughtfully designed and engineered

to provide iron-free water for many years when properly applied, installed, operated and maintained.

The Culligan power valve contains a serial number, which must be referenced if you ever require repairs or parts replacement under warranty. **DO NOT REMOVE OR DESTROY THIS SERIAL NUMBER DECAL.**

Specifications

	<u>RM-10</u>	<u>RM-10D</u>	<u>RM-13</u>
Control Valve	Motorized	Motorized	Motorized
Type	Plastic	Plastic	Plastic
Timer	6 day clock	6 day clock	6 day clock
Media Tank Dimensions	10 x 40 in (250 x 1 020 mm)	10 x 54 in (250 x 1 370 mm)	13 x 54 in (330 x 1 370 mm)
Aerator/Precipitator Tank Dimensions	6 x 35 in (150 x 890 mm)	6 x 35 in (150 x 890 mm)	6 x 35 in (150 x 890 mm)
Media	1.0 ft ³ (28 liter) Multi-Blend	1.5 ft ³ (42 liter) Multi-Blend	2.5 ft ³ (71 liter) Multi-Blend
Underbedding	20 lb (9.07 kg)	20 lb (9.07 kg)	20 lb (22.68 kg)
Max. Iron (soluble)	20 ppm (20 mg/L)	20 ppm (20 mg/L)	20 ppm (20 mg/L)
Max. Hydrogen Sulfide	5 ppm (5 mg/L)	5 ppm (5 mg/L)	5 ppm (5 mg/L)
Max. Turbidity	125 ppm (125 mg/L)	125 ppm (125 mg/L)	125 ppm (125 mg/L)
Min. Alkalinity	100 ppm (100 mg/L)	100 ppm (100 mg/L)	100 ppm (100 mg/L)
pH Limitations	5.5-8.0	5.5-8.0	5.5-8.0
Service Flow	4 gpm (15.14 L/pm)	5 gpm (18.93 L/pm)	7 gpm (26.50 L/pm)
Operating Pressure	20-100 psi 138-689 kPa	20-100 psi 138-689 kPa	20-100 psi 138-689 kPa
Operating Temp.	33 ^o -100 ^o F (.6 ^o -38 ^o C)	33 ^o -100 ^o F (.6 ^o -38 ^o C)	33 ^o -100 ^o F (.6 ^o -38 ^o C)
Electrical Requirements	3 watts	3 watts	3 watts
Drain Flow Max.	5 gpm (18.92 L/pm)	5 gpm (18.92 L/pm)	5 gpm (18.92 L/pm)
Regeneration Time	75 min	75 min	75 min

Component Description

The Rust Master[™] iron filter requires no chemicals for proper operation. The system consists of three components: (1) Venturi/Nozzle, (2) Aerator/Precipitator, and (3) Filter tank.

The Venturi/Nozzle serves to educt air into the water. The Aerator/Precipitator serves to oxidize and precipitate iron and sulfur so that they can be removed by the filter tank. The Aerator/Precipitator also serves to vent any excess air which may have been educted into the system. The filter tank contains a multi-blend material which filters out the oxidized iron and sulfur. This mineral must be regularly backwashed to remove these precipitates.

The control valve regulates this backwashing process. This control valve, a Culligan[®] power valve is ideally suited for this type application.

You will receive 4 cartons for the RM-10, 5 cartons for the RM-10D and 6 cartons for the RM-13. The underbed material and filtration media are packed in small cartons. One box contains the Aerator/Precipitator assembly. There should be three components in this box: (1) A carton with assorted fittings, and the Venturi, (2) the aerator/precipitator tank, and (3) the float assembly wrapped in a microfilm insulation.

The last box contains the Tank and Control assembly. The control valve will have to be removed from the tank prior to installation.

This unit includes a Cul-Flo-Valv[®] bypass with 3/4" NPT connections, PN 00-3314-46.

Preparation

The success and ease of the installation will depend on advance planning and preparation. Careful attention to the unit's location, accessibility to electrical and drain facilities, and the availability of the proper tools will ensure a professional-looking installation. Of equal importance is the assurance that the conditioner has been correctly applied and meets all performance Specifications as set forth on page 3.

APPLICATION

Essential to correct application is a complete analysis of the water to be treated. Culligan extends to its customers, through its dealers, a water analysis service. Compare specified water limitations in the Specifications Section (Page 3) with the water analysis. Contact the Culligan dealer immediately if any discrepancies are found. In addition, your unit is designed to be operated within certain pressure and temperature limitations.

Before installing the Rust Master[™] iron filter, make sure that there is water available in sufficient volume to backwash the filter. This can be verified by running water at the tap nearest the installation point and measuring the volume with a pail while timing how long it takes to fill up the pail. At the same time, make sure that the water pressure has not dropped below 25 psi (172 kPa). If either of these two conditions are not met, an additional booster pump may be required for proper performance of the system. Contact the factory if this is the case.

HYDROGEN SULFIDE

Hydrogen sulfide is a flammable, poisonous gas which is produced in water supplies as a result of the decomposition of underground organic deposits. Its presence is easily detected

by a characteristic rotten and obnoxious taste. Hydrogen sulfide is very corrosive (both in water and in the air). It rapidly tarnishes silver causing it to turn black and affects the taste, odor and color of foods and beverages.

IRON

Iron, though not always visible when water is drawn, can cause reddish staining of bathroom fixtures and clothing, and even a dry, metallic taste in drinking water. It also causes hot beverages, such as coffee and tea, to turn a murky black color. Excessive amounts of iron, and iron in different forms, may require additional treatment.

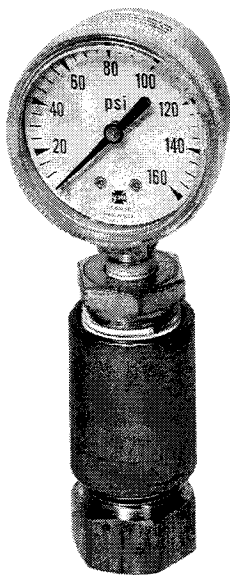
PRESSURE

Your conditioner is designed to operate within a pressure range of 30 to 100 psi (206 to 689 kPa). Pressures below 30 psi (206 kPa) may cause the unit to perform inefficiently.

Check the available water pressure with a gauge assembly to determine what adjustments, if any, are necessary (Fig. 1). Place the gauge on a raw water line and open a nearby faucet. Adjust the faucet until the flow is about 2 gallons per minute (8 litres per minute) and check the pressure. In the case of a private well system, allow water to run until the pump cuts in. If the pressure is less than 30 psi (206 kPa) at this point, adjust the pump pressure switch as required to raise the cut-in pressure above 30 psi (206 kPa).

PRESSURE DROP

Whenever water is flowing a certain amount of pressure is lost due to resistance from pipe, fittings, and appliances connected to the water supply. The amount of pressure drop en-



Part No. 00-3044-50
Fig. 1

countered depends on how fast the water is flowing and how much resistance it meets. The amount of pressure available at a tap is also determined by its height above the source of the supply. For example, if water pressure in the basement is 50 psi (344 kPa), it will be about 45 psi (310 kPa) on the ground floor, and about 40 psi (276 kPa) on the second floor, or a reduction of about 5 psi (34 kPa) for every 10 feet (3 metres) of elevation.

Particularly in the case of private water supplies, it may be necessary to increase the pump pressure to overcome pressure drop through the conditioner so that adequate pressure is available at all taps.

TEMPERATURE CONTROL

Temperature is an important consideration. The conditioner should be installed in an area protected from extremes in temperature. **Do not allow the conditioner to freeze**, but at the same time do not install it directly adjacent to a furnace or water heater, or in an area where it may be exposed to direct sunlight. An outdoor location is not recommended unless the conditioner is protected from rain, blowing sand or dust, and temperature extremes.

ELECTRICAL REQUIREMENTS

This unit should be located near an electrical outlet, preferably one not controlled by a switch which could accidentally be turned off. The control is provided with a 6-foot cord with a 3-prong plug and should be plugged into a grounded receptacle. If the receptacle is designed only to accept 2-prong plugs, secure a 3-prong adapter (available at local hardware stores) and secure the ground wire to the receptacle plate mounting screw. **⚠ WARNING: DO NOT REMOVE THE GROUNDING PRONG! AN IMPROPERLY GROUNDED UNIT COULD CAUSE INJURY FROM ELECTRIC SHOCK!**

SPACE REQUIREMENTS

Along with the availability of drainage and electricity, the physical location of the unit must be considered. Six to twelve inches (152-304 mm) clearance should be provided behind the unit for running plumbing and drain lines, and four feet (1.3 metres) above the top of the unit for service access.

TOOLS AND MATERIALS

All installations will require a few basic tools, including standard and Phillips screwdrivers, a pair of pliers, measuring tape and some silicone-base lubricant. **(DO NOT USE PETROLEUM-BASE LUBRICANTS.)** Additional tools will be required depending on the piping materials to be used:

- Copper tubing—tube cutter or hacksaw, torch; solder flux, solder, steel wool and file.
- Galvanized pipe—hacksaw, pipe dies, cutting oil, pipe compound and pipe wrenches.
- Plastic pipe (if permitted by local plumbing codes)—saw, solvent, cement and rags.
- Protective glasses or goggles.

If your household plumbing is galvanized and you intend to make your installation with copper, or vice versa, obtain dielectric unions to prevent galvanic (dissimilar metal) corrosion.

All installations will require 1/2" drain line (PN 00-3030-82, grey, semi-flexible; or PN 00-3319-46, black semi-rigid), and 5/16" brine line (PN 00-3031-28). Purchase slightly more than you think you will need to cover for elevation over doorways, and so on.

BYPASS

Although the conditioner's control valve has a feature which

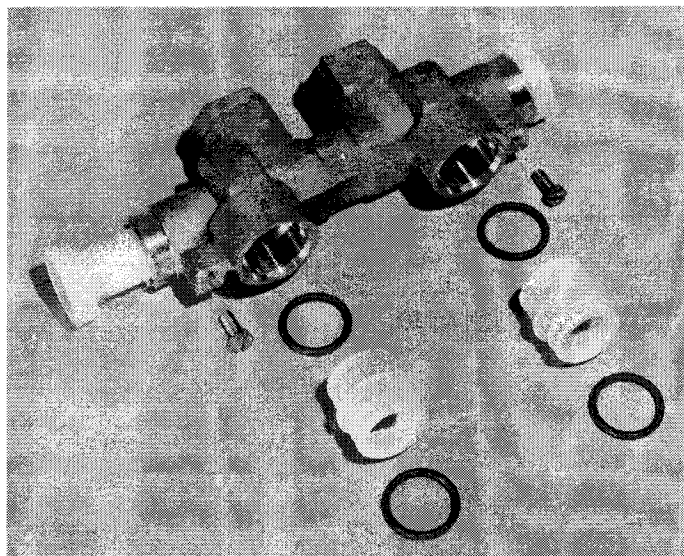


Fig. 2

makes unconditioned water available, a separate manual shut-off is recommended to permit servicing the unit.

This unit includes a Cul-Flo-Valv[®] Bypass (Fig. 2), with 3/4" NPT connections, PN 00-3314-46.

OPTIONAL BYPASS ADAPTERS

Part Number	Description	Size
00-3314-42	Cul-Flo-Valv Bypass	3/4-inch sweat
00-3314-43	Cul-Flo-Valv Bypass	1-inch NPT
00-3314-46	Cul-Flo-Valv Bypass	3/4-inch NPT

An alternative shut-off valve system can be installed with valves obtained from a local hardware or plumbing supply store. You will also need a sweat adapter kit (Fig. 3) to adapt the control valve to the plumbing. These are available in two sizes:

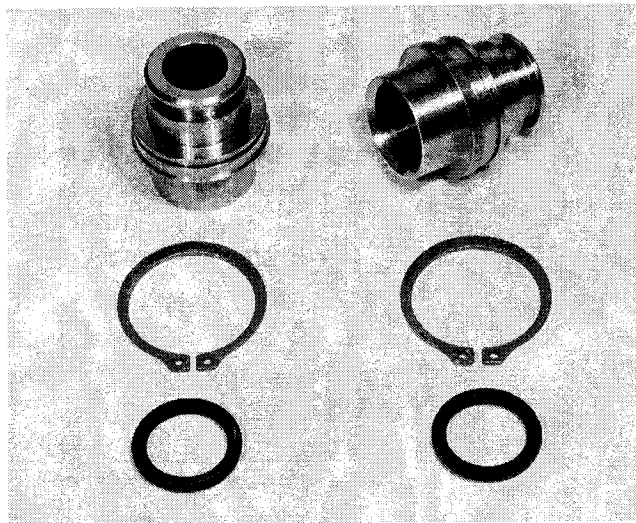


Fig. 3

Part Number	Description	Size
00-3314-44	Sweat Adapter Kit	3/4-inch sweat
00-3314-45	Sweat Adapter Kit	1-inch sweat

Snap-ring pliers (Fig. 4) are needed to attach the adapters to the control valve bracket. Additional fittings are required to connect the bypass valves to the adapters.



Part No. 00-5916-09

Fig. 4

TOOLS AND MATERIALS CHECKLIST

- Hand tools (screwdrivers, pliers, etc.).
- Special tools (torch, snap-ring pliers, etc.).
- Lengths of pipe or tubing for plumbing connections.
- Fittings as required by the method of installation.
- Bypass valves: Cul-Flo-Valv Bypass or a valve shut-off.
- Drain line (rigid or flexible, 1/2") .
- Gauge assembly for checking line pressure.
- Silicone lubricant PN 00-4715-07 (petroleum-base lubricants must not be used—they can cause rubber O-rings to swell and deteriorate).

Installation

Select a suitable location for the filter. Ideally, the Rust MasterTM filter should be placed as close to the pressure tank as possible. This will prevent premature settling of the oxidized material.

NOTICE: *The installation of the Rust Master iron filter must be in accordance to all local plumbing codes. Before making any electrical connections, disconnect power at the source. Electrical connections must comply with all local ordinances and codes.*

VENTURI/NOZZLE

Refer to Figure 5 for the proper sequence of equipment. Before installing the Venturi/Nozzle assembly, shut off the water at the main supply. Turn power off to the well pump and drain the plumbing system. So as not to burn out the

water heater, place the heater in a standby mode or shut it off completely.

Cut the main supply between the water pump and the pressure tank. The Venturi/Nozzle has threaded fittings to facilitate this connection. It is recommended that a line strainer and pressure gauges be installed at this time. These can be obtained through Culligan or your local plumbing supply house. Allow for 6" (152 mm) of straight pipe before and after the Venturi/Nozzle assembly. (Fig. 6)

AERATOR/PRECIPITATOR

Prior to installation, prepare the Aerator/Precipitator tank as follows:

1. Remove the manifold from the tank and lay the tank on its side. Slip the bottom base off the tank.

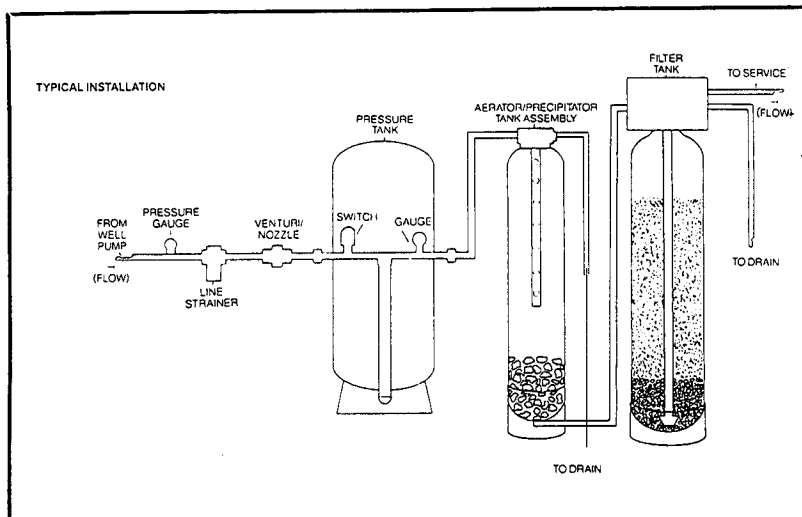


Fig. 5

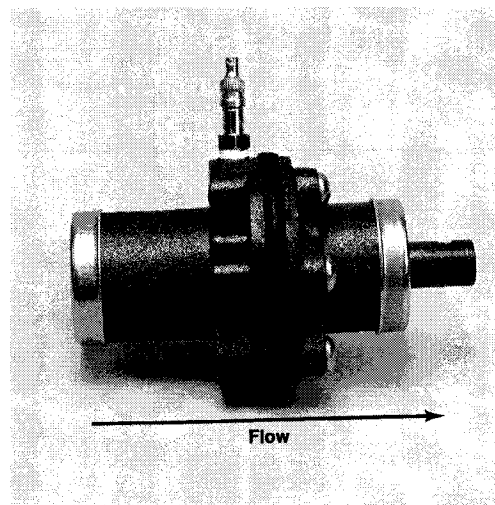


Fig. 6

2. Thread the 3/4" Close Nipple and the 90° ell into the bottom of the tank. Use thread tape and/or paste to insure a good seal. (Fig. 7)
3. Firmly push the base onto the tank while aligning the pipe opening in the base with the opening of the PCV ell. Thread a 3/4" Nipple (supplied separately) into the ell so that it passes through the opening in the base of the tank. Again, make sure to use thread tape and/or paste when making this connection. (Fig. 8)
4. Place all of the large diameter plastic media into the tank and carefully set the tank upright. **⚠ CAUTION: Do not drop the plastic media into the tank while in an upright position as damage to the tank may result.**
5. Remove the float assembly from the micro-foam wrap. Place the gasket on the threaded nipple of the float assembly. Screw the float assembly into the tank manifold. Thread tape is not necessary. Also, do not use any lubricants. (Fig. 9) **⚠ CAUTION: Do not over tighten. May result in breakage.**

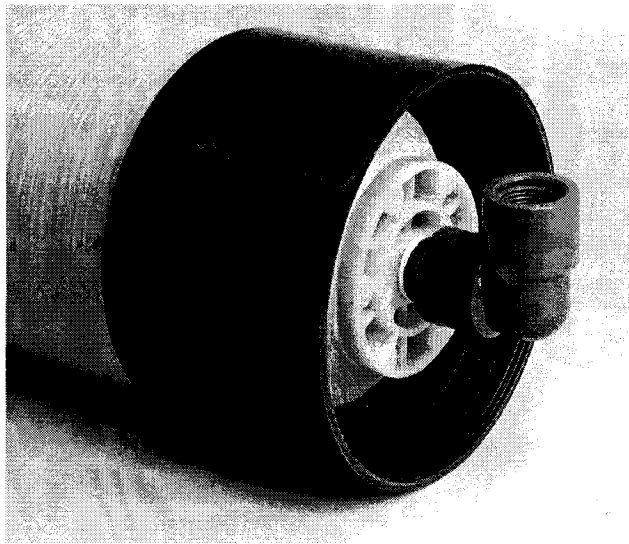


Fig. 7

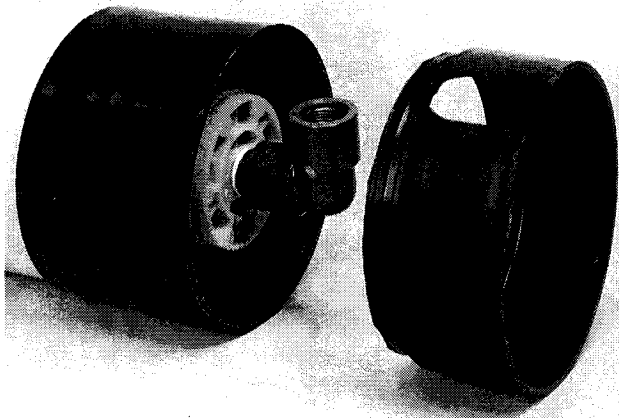


Fig. 8

6. Thread the manifold assembly back into the tank. Wrap threaded end of hose barb with thread tape.
7. Screw it into the tank manifold. Push one end of the 3/8" x 1/4" Tubing onto the hose barb. Cut to proper length and connect the other end of the tubing to suitable to drain. **PROTECT THE TUBING FROM FREEZING.**
8. Place the Aerator/Precipitator into the plumbing scheme. (Fig. 10)

After the pressure tank, cut the line as required to install the Aerator/Precipitator tank assembly. Use unions before and after the tank. The inlet is at the top of the tank and the outlet is at the bottom.

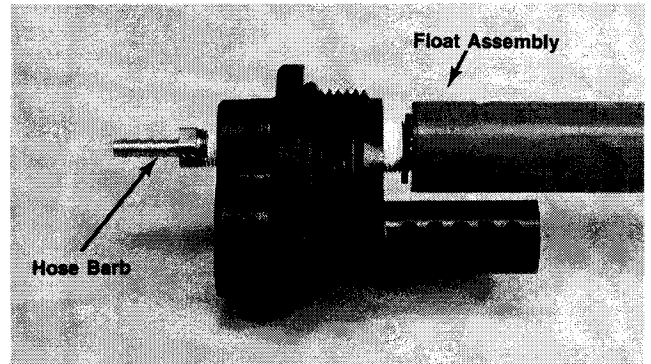


Fig. 9

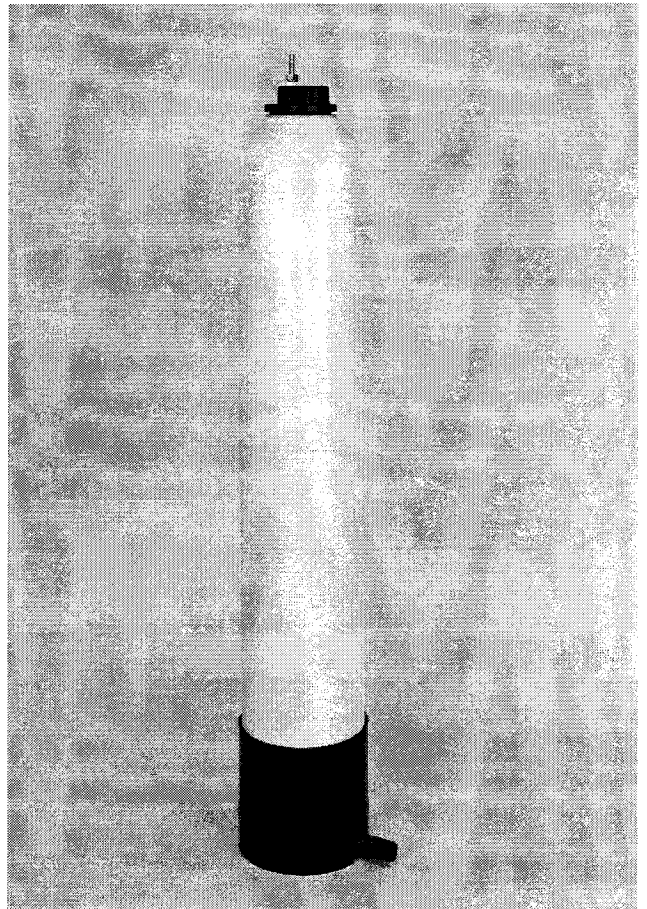


Fig. 10

FILTER TANK FILLING

It is possible to fill the filter tank in the plant. However, because of its weight and handling difficulty, it is advisable to perform this on-site. Proceed as follows:

- 1) Place the distributor tube in the Filter Tank.
- 2) Use a cork or some other appropriate plug and place it into the distributor tube. This will prevent media from entering the distributor during filling.
- 3) Place a funnel in the tank opening and pour several gallons of water into the tank.
- 4) Pour the underbed material into the tank. Then pour the Multi-Blend mineral. When filled the tank should be about two thirds full.
- 5) Fill the tank nearly to the top with water. This will allow the media to become soaked while completing the rest of the installation.

DRAIN LINE CONNECTIONS

A hose clamp is provided to secure the drain line to the drain elbow of the control valve. The drain line is not provided with the unit.

- 1) Slide the hose clamp over the end of the drain line, pushing it to within several inches of the end.
- 2) Push the end of the drain line over the drain elbow and, with a screwdriver, tighten to within 1/4" (6.35 mm) of the end of the tubing to get a tight seal.
- 3) Run the drain line to a suitable waste outlet. Make sure to provide at least a 4" (101 mm) siphon break as required by law in most states. Secure to an immovable object to prevent it being forced out of place during backwash.

CONTROL MOUNTING

Assemble the control valve to the media tank as follows (See Fig. 11):

- Lubricate the O-ring sealing area of the adapter and of the tank with silicone grease.
- Remove the large O-ring from the parts neck (located in the control valve carton) and assemble the O-ring onto the adapter. Be sure that the O-ring is fully seated against the flat undersurface of the adapter.
- Lubricate the large O-ring and the outlet manifold O-ring with silicone grease.
- Thread the control valve into the tank, making certain that the outlet manifold fits securely into the manifold O-ring. A strong hand-tight assembly is sufficient to provide a leak-free seal.

PLUMBING CONNECTIONS

General Instructions

- Follow local plumbing codes. Failure to do so may result in your having to re-do the installation at your expense.
- Take the time to make a clean, professional looking installation. Use flux and solder sparingly when making sweat connections, and avoid excessive use of pipe compound. When using galvanized pipe, clean out excess cutting oil and metal chips before assembly. Foreign objects, if allowed to enter the control valve, can cause operating problems.
- Once the plumbing connections have been made to the Cul-Flo-Valv[®] Bypass, make certain the interior of the valve is clean and free of debris, lubricate the valve stem O-rings with silicone lubricant, reinsert the stem, and replace the red or blue knob. The stem may be inserted in either direction. Set the Cul-Flo-Valv Bypass in the bypass position by pushing the red knob completely inward. The main water supply line may then be reopened so that hard water will be available to the household throughout the remainder of the installation process.
⚠ WARNING: DO NOT REMOVE THE CUL-FLO-VALV BYPASS KNOBS OR STEM WHILE THE UNIT IS UNDER PRESSURE!

Cul-Flo-Valv Bypass Installation

- Remove the two plastic adapters and the four adapter O-rings from the Cul-Flo-Valv Bypass Kit (Fig. 2).
- Lubricate the O-rings with silicone grease and assemble the O-rings to the adapters.
- Press one adapter into each of the two rear ports of the control valve body.

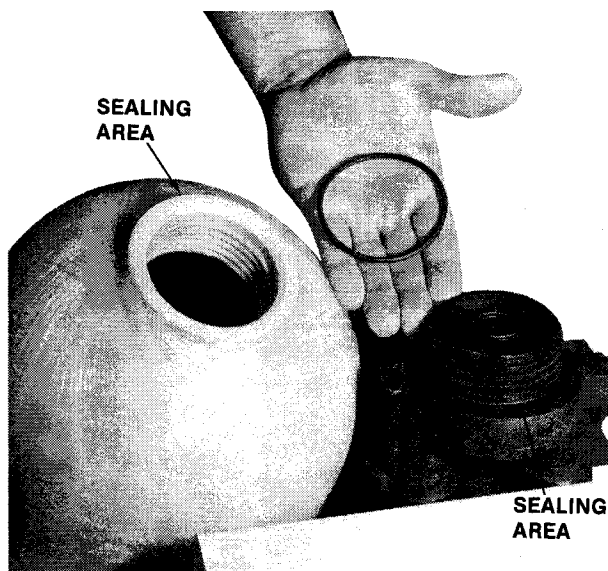


Fig.11

- Using a small open-end wrench, assemble the Cul-Flo-Valv[®] Bypass to the mounting bracket with the two screws provided. Note that the Cul-Flo-Valv Bypass can be mounted in one position only (Fig. 12).
- Rough-in the plumbing up to the Cul-Flo-Valv Bypass, but do not solder them into the Cul-Flo-Valv Bypass at this time. This step establishes the proper plumbing height.
- Remove the two screws that hold the mounting bracket to the control valve body, raise the U-clip about 1/2", (12.7 mm) and remove the mounting bracket/Cul-Flo-Valv Bypass assembly from the control, leaving the two plastic adapters in the rear of the valve body (Fig. 13).
- Remove the Cul-Flo-Valv Bypass stem by removing one of the knobs (either red or blue, but not both) and pull the stem straight out. Set the stem aside in a clean place.
- Complete the plumbing connections to the Cul-Flo-Valv Bypass at this time. Observe the IN and OUT markings on the Cul-Flo-Valv Bypass.
- Move the conditioner into position against the mounting bracket/Cul-Flo-Valv Bypass assembly, making certain that the plastic adapters fully engage into the Cul-Flo-Valv Bypass.
- Push the U-clip down, making certain that it fully engages the two holes in the lower tab of the mounting bracket (Fig. 14), insert the two mounting bracket screws and tighten the screws into the valve body.

Sweat Adapter Installation

- Remove the sweat adapters and O-rings from the Sweat Adapter Kit (Fig. 3). Set the snap-rings aside for later use.
- Lubricate the O-rings with silicone grease and assemble the O-rings to the sweat adapters.
- Press one adapter into each of the two rear ports of the control valve body.

- Rough-in the plumbing up to the sweat adapters, but do not solder into the sweat adapters at this time. This step establishes the proper plumbing height.
- Remove the two screws that hold the mounting bracket to the control valve body, raise the U-clip about 1/2" (12.7 mm) and remove the mounting bracket from the control (Fig. 15).
- Remove the O-rings from the sweat adapters and assemble the sweat adapters to the mounting bracket using a snapping plier to open the snap-rings. Be certain that the snap-rings rest in the groove of each adapter.

NOTICE: Be certain to orient the snap-rings, as shown in Fig. 16, such that the narrow portion of both snap-rings faces in towards the center of the mounting bracket, otherwise the snap-rings will interfere with proper assembly of the bracket to the control valve body.

- Complete the plumbing connections to the sweat adapters at this time. Note the IN and OUT markings on the rear of the control valve body.
- Assemble the O-rings to the sweat adapters and lubricate the O-rings.
- Move the conditioner into position against the mounting bracket/sweat adapter assembly, making certain that the sweat adapters fully engage into the valve body ports.

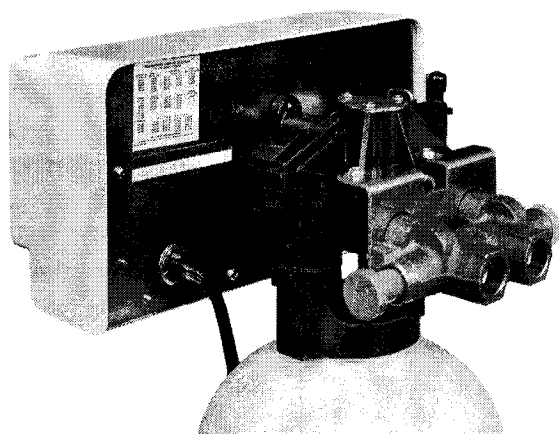


Fig. 12

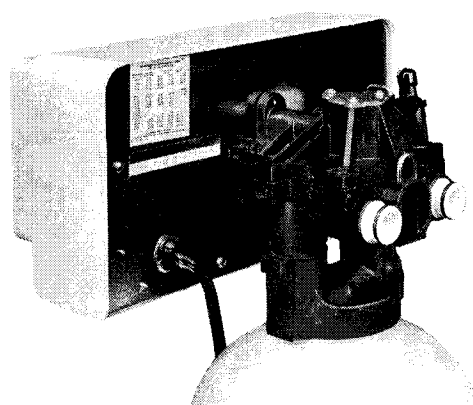


Fig. 13

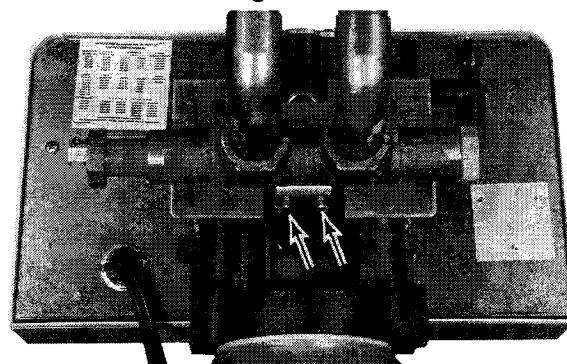


Fig. 14

- Push the U-clip down, making certain that it fully engages the two holes in the lower tab of the mounting bracket (Fig. 17), insert the two mounting bracket screws, and tighten the screws into the valve body.

BACKWASH FLOW CONTROL

The RM-10 and RM-10D require a backwash flow control to prevent expulsion of media at the drain. Refer to Fig. 18 and proceed as follows:

- Locate the two flow controls from the small parts pack. The flow control for the RM-10 is marked with a #4 while the RM-10D has a #5.5. Also notice the larger diameter for the 5.5 flow control.
- Remove the U-clip from the drain elbow and pull the elbow from the valve assembly.
- Insert the flow control with the number toward the control valve (Fig. 18).
- Replace the drain elbow and the U-clip.

Drain Line

- Locate the hose clamp in the small parts pack and the length of 1/2-in. drain line tubing (not furnished with the conditioner).
- Slide the hose clamp over the end of the drain line.
- Push the end of the drain line over the drainline fitting, move the hose clamp to within 1/4" (6.35 mm) of the end of the drain line at the drain fitting, and tighten the hose clamp with a screwdriver.
- Run the drain line to a suitable waste outlet, such as a laundry tub, floor drain, or stand pipe. To prevent back-siphoning of drain contents, an air gap is desirable and is required by law in most states. **PROTECT THE DRAIN LINE FROM FREEZING TEMPERATURES!**

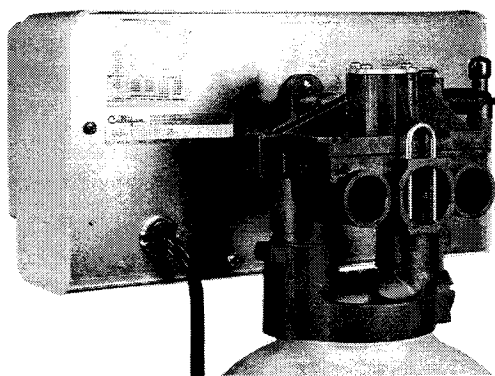


Fig. 15

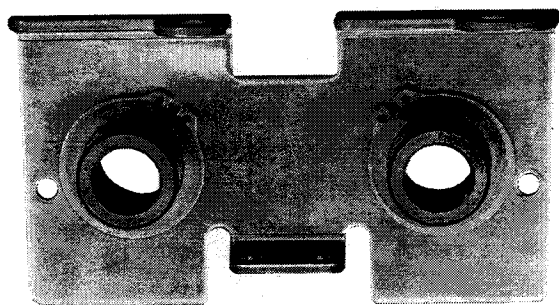


Fig. 16

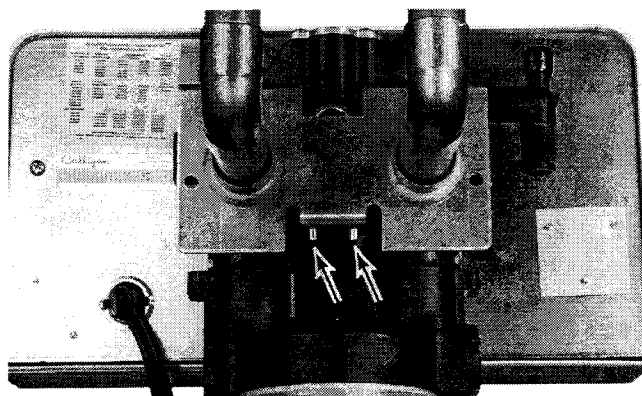


Fig. 17

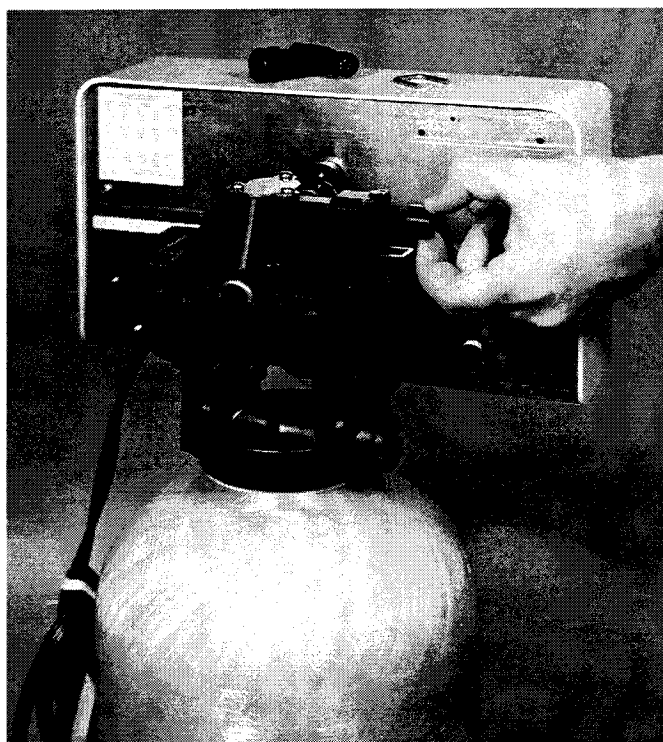


Fig. 18

- Cut the drain line to the required length, observing the drain line length limitations in Table 1.
- Secure the end of the drain line to an immovable object to prevent its being forced out of place during the drain cycle (Fig. 19).

TABLE 1

Drain line length limitations.

Average Water Pressure Psi	Height of Drain Discharge Above Floor on Which Filter Sits							
	4"	1 Ft.	2 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.
30	56	50						
50	112	106	96	86	76			
70	143	137	127	117	107	97		
90	153	147	137	127	117	107	97	
120	159	153	143	133	123	113	103	93

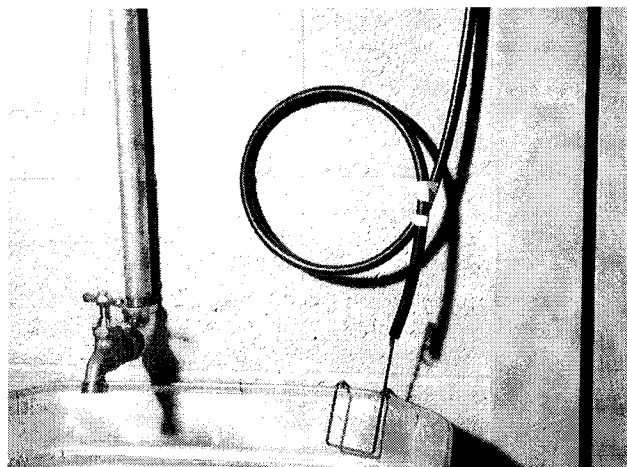


Fig. 19

Start-Up Procedure

Plug the control valve into an unswitched 115 volt receptacle. Turn power on to the pump. Place the control to the backwash position. Make sure that the bypass valve is in the service position. Slowly open the main supply valve. Opening too fast may result in the expulsion of media to the drain. The tanks will be filled with water when you notice water flowing at the drain of the control valve. Place the control valve into the fast rinse position and then open the main water supply valve fully. Allow the filter to rinse until the water at the drain is clear. Check for any leaks. Fill up the water heater and turn it back on.

SETTINGS

Backwash

To set the backwash, refer to Fig. 20.

1. Grasp the front cover by the slots and carefully pull forward. Lay the cover aside.
2. Loosen screw (A) in the center of the rapid rinse dial (R). DO NOT LOOSEN SCREW (B).
3. Hold the cam gear (beneath the backwash dial) and rotate the backwash dial (C) until the desired backwash time lines up with the center-line of the indicator mark (D). Fifteen minutes should be sufficient to backwash the filter.
4. Re-tighten screw (A).

RECHARGE FREQUENCY

The Rust Master™ Iron Filter should only require backwashing once a week. Set the frequency as follows:

1. Pull out all the pins on frequency wheel (F).
2. Push in the pin with the #1 next to it. If more frequent regenerations are needed, refer to the following table.
3. An optional 7 day frequency wheel is available, PN 00-3300-01.

PIN NUMBER	RECHARGE FREQUENCY
1	Every six days
1 & 4	Every three days
1, 3 & 4	Every other day
All pins	Every day

TIME OF RECHARGE

The timer is factory set to recharge about 2:00 a.m., a time when water usage is at a minimum for most families. If water is used during recharge, unfiltered water will be automatically bypassed to service. If it would be convenient to have the filter recharge at a different time of day, the setting may be changed as follows, referring to Fig. 20:

- 1) The position of the small peg (H) in relation to the time-of-day dial (J) determines the time when the unit will initiate a regeneration.
- 2) Loosen set screw (S)
- 3) Pull the time-of-day dial (J) straight out and rotate it until the desired time of recharge is opposite the peg (h). NOTICE: *Whenever the time of recharge is changed, the time of day setting must also be changed.*

Operation, Care and Maintenance

USE OF BYPASS VALVE

Depending on where the particular installation was made, the outside sill cocks may or may not be served by conditioned water. Ideally, all lines not requiring soft water should be taken off upstream of the softener. This is not always possible, however, due to the construction of the house, or the difficulty or expense of rearranging the piping in older homes.

You should bypass the conditioner:

- If the outside lines do not bypass the water softener and the water is to be used for lawn sprinkling or other outside uses.
- If water is not used for several days (e.g., during vacation periods).
- If you wish to inspect or work on the valve or salt container.
- If a water leak from the valve is evident.

Cul-FLo-Valv.® Bypass

With the blue knob pushed fully inward (knob up against the barrel of the valve), water is routed through the water conditioner where it is softened. Water may be bypassed around the conditioner by pushing the red knob fully inward. Avoid "slapping" the valve stem when shifting from one position to another.

CARE AND CLEANING

Protect the operation and appearance of the water conditioner by following these precautions:

- Do not place heavy objects on top of the conditioner cover.
- Use only mild soap and warm water to clean the exterior of the unit. Never use harsh abrasive cleaners or compounds which contain acid or bleach.
- Protect the conditioner and drain line from freezing temperatures.
- Reset the timer as soon as possible after any interruption of electrical power to keep the unit on its normal schedule.