

Culligan®



**CULLIGAN® SUPER S™
WATER FILTER INSTALLATION
AND OPERATING INSTRUCTIONS**

MODELS FROM 1997

CULLIGAN INTERNATIONAL COMPANY/NORTHBROOK, ILLINOIS

CULLIGAN USA DIVISION/NORTHBROOK, IL 60062 — SAN BERNARDINO, CA 92402

CULLIGAN FRANCE S.A./YVELINES, FRANCE — CULLIGAN ITALIANA SpA/BOLOGNA, ITALY

CULLIGAN OF CANADA, LTD./MISSISSAUGA, ONTARIO, CANADA L5K 1A5

CULLIGAN ESPANA S.A./08191 RUBI (BARCELONA), SPAIN — JEBEL ALI FREE ZONE/DUBAI, UNITED ARAB EMIRATES



⚠ 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.

CULLIGAN® SUPER S™ WATER FILTER INSTALLATION AND OPERATING INSTRUCTIONS

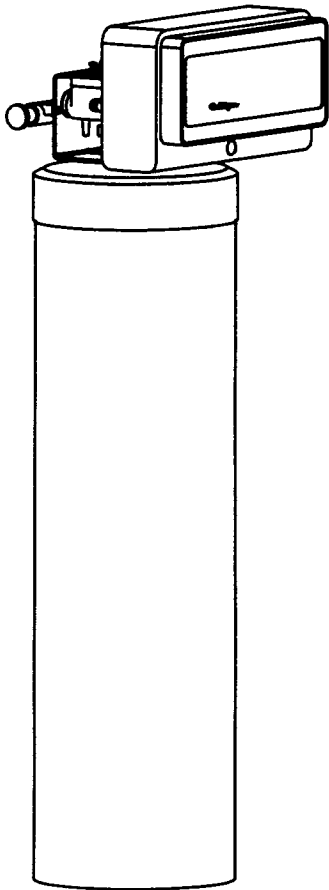


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Introduction

SAFE PRACTICES

Throughout this manual there are paragraphs set off by special headings.

NOTICE: Notice is used to emphasize installation, operation or maintenance information which is important, but does not present any hazard.

Example: **NOTICE:** *The nipple must extend no more than 1 inch above the cover plate.*

⚠ CAUTION: Caution is used when failure to follow directions could result in damage to equipment or property.

Example: **⚠ CAUTION:** *Disassembly while under water pressure can result in flooding.*

⚠ WARNING: Warning is used to indicate a hazard which could cause injury or death if ignored.

Example: **⚠ WARNING! ELECTRICAL SHOCK HAZARD! DISCONNECT THE UNIT FROM THE POWER SUPPLY BEFORE REMOVING THE TIMER MECHANISM OR COVER PLATES!**

SERIAL NUMBERS

- The control assembly serial number is top center on the rear of the timer plate.
- The media tank serial number is on the top of the tank between the fittings (visible only when the control valve is removed).

Do not remove or destroy the serial numbers decals. They must be referenced on requests for warranty repair or replacement.

This publication is based on information available when approved for printing. Continued refinement of design could cause changes that may not be included in this publication.

Specifications

Super S™ Filter

Control Valve	Motorized Plastic
Timer	Automatic
Overall Conditioner Height	52 1/2" (133.4 cm)
Media Tank Dimensions (D x H)	12" x 45" (305 x 1143 cm)
Filter Media, Type and Quantity	Culligan® CIM 1.5 cu. ft. (42 L)
Underbedding, Type and Quantity	Cullsans®, 30 lbs. (12 kg.)
Capacity ¹	22,000 ppm-gal (5800 mg/L-litres)
Freeboard ²	15.75" - 1.75" (400 - 44 m)
Max. Clear Water (Soluble) Iron	20 ppm (20 mg/L)
Max. Hydrogen Sulfide	10.0 ppm (10.0 mg/L)
Minimum Alkalinity ³	100 ppm (100 mg/L)
pH	6.5 - 8.5
Service Flow @ Pressure Drop (Clean Bed)	
Normal	6.2 gpm (23.5 L/min) @ 10 psi (43 kPa)
Maximum	10.0 gpm (38 L/min)
Operating Pressure	20-60 psi (138-414 kPa)
Operating Temperature	33-100° F (1-38° C)
Electrical Requirements	120 Volts AC/60 Hz
Power Consumption, Continuous/Maximum	3 Watts/203 Watts
Drain Flow, Maximum	5 gpm (19 L/min)
Regeneration Time	
Backwash	5 - 20 minutes
Eduction	5 minutes
Fast Rinse	5 - 20 minutes

1 Estimated media life is 750,000 ppm-gal (197,400 mg/L-litres)

2 Measured from top of media bed to top of inlet fitting.

3 Minimum alkalinity is required for efficient removal of iron and hydrogen sulfide.

Preparation

COMPONENT DESCRIPTION

The Super S_™ water filter is shipped from the factory in 5 cartons. Remove all components from their cartons and inspect them before starting installation.

Control Valve Assembly —5 cycle regeneration control valve, timer and compressor assembly. A small parts package contains installation hardware and consumer literature, including an Owners Guide and warranty policy (Fig. 1).

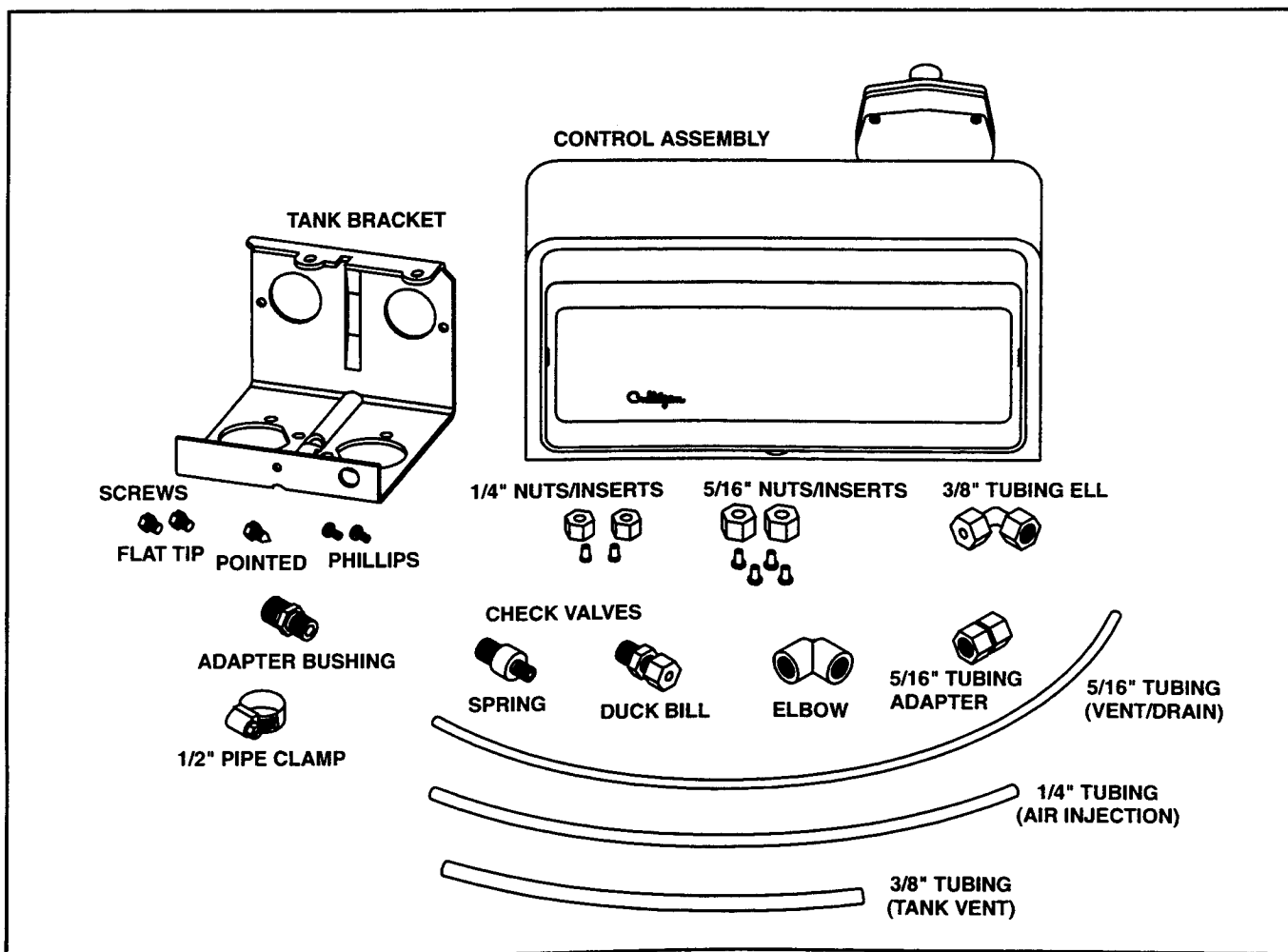


FIG. 1

Media Tank — Tripl-Hull™ media tank complete with fittings. A plastic inlet manifold (Fig. 2) should be installed inside the gray fitting. Check to see that it is there.

Eduction Valve — Allows for eduction of bleach solution.

IN-PLANT PREPARATION

Media — One package of 1.5 cu. ft. of CIM filter media and a 30 lb. (14 kg) package of Cullsan® underbedding.

Culligan CIM media and underbedding must be put into the tank, ideally in the dealership, proceed as follows:

1. Connect tank to backwash funnels.
2. Pour underbedding into funnel and drop into tank.
3. Pour CIM media into funnel.
4. Backwash in funnel until clean.
5. Drop media into tank from funnel.

TOOLS AND MATERIALS

All Installations

- Safety goggles
- Slotted screwdrivers, medium and large tip
- Phillips screwdrivers, small and medium tip
- Pliers, standard or locking groove
- Gauge Assembly (PN 00-3044-50 or equivalent, Fig. 3)
- Silicone lubricant (PN 00-4715-07 or equivalent) — **DO NOT USE PETROLEUM-BASED LUBRICANTS**
- Lubricating swabs (PN 00-5916-10, carton of 10)
- Thread sealing tape
- A bucket, preferably light-colored
- Towels

Special Tools

- Torch, solder and flux for sweat copper connections
- Threading tools, pipe wrenches and thread sealer for threaded connections
- Saw, solvent and cement for plastic pipe connections

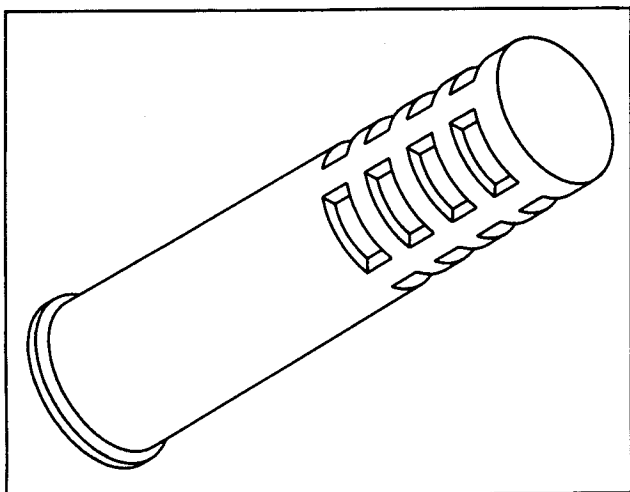


FIG. 2

- Snap-ring pliers, external, for three-valve bypass (see following section)
- For testing the compressor, a gauge (PN 00-4486-21) and elbow (PN 00-4416-13)

Materials

- 5/16" plastic brine tubing (PN 00-3031-28 or equivalent); Super S™ filter only
- Drain line, 1/2" (PN 00-3030-82, gray, semi-flexible; or PN 00-3319-46, black, semi-rigid; or equivalent)
- Pressure reducing valve (if pressure exceeds 60 psi [414 kPa], PN 00-4009-00 or equivalent)
- Pipe and fittings suited to the type of installation
- Bleach, 5-1/4%, 1 gallon [3.8 litres]

NOTICE: If a softener will follow the filter, replace the softener's wide slot inlet manifold with a fine slot manifold PN 00-2320-05.

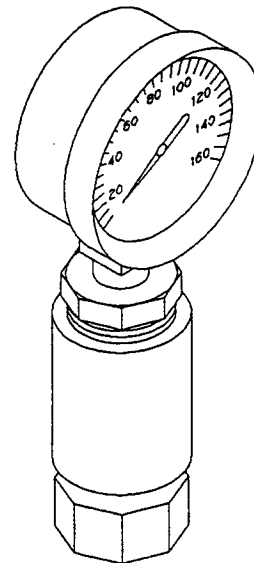


FIG. 3

BYPASS VALVES

Provide a manual bypass to permit water flow to service in the event the water conditioner must be removed or disconnected.

Cul-Flo-Valv[®] Bypass

The Cul-Flo-Valv bypass connects directly to the control valve bracket

00-3314-42	Cul-Flo-Valv Bypass	3/4" Sweat
00-3314-43	Cul-Flo-Valv Bypass	1" NPT
00-3314-46	Cul-Flo-Valv Bypass	3/4" NPT

Three-Valve Bypass

A three-valve bypass is an alternative bypass method that requires three hand-operated valves and interconnecting pipes or fittings (obtain locally), and a Sweat Adapter Kit (order separately). Refer to diagram, Fig. 4.

00-3314-44	Sweat Adapter Kit	3/4" Sweat
00-3314-45	Sweat Adapter Kit	1" Sweat

APPLICATION

Water quality — Verify that raw water iron, hydrogen sulfide and alkalinity are within the limits stated in the specifications.

Pressure — If pressure exceeds the maximum specified (60 psi [414 kPa]), install a pressure reducing valve (see materials checklist). On private water systems, make sure the minimum pressure (the pressure at which the pump starts) is greater than 20 psi (130 kPa). Adjust the pressure switch so that the minimum pressure is greater than 20 psi (138 kPa).

Temperature — Do not install the unit where it could freeze, or next to a water heater or furnace, or in direct sunlight.

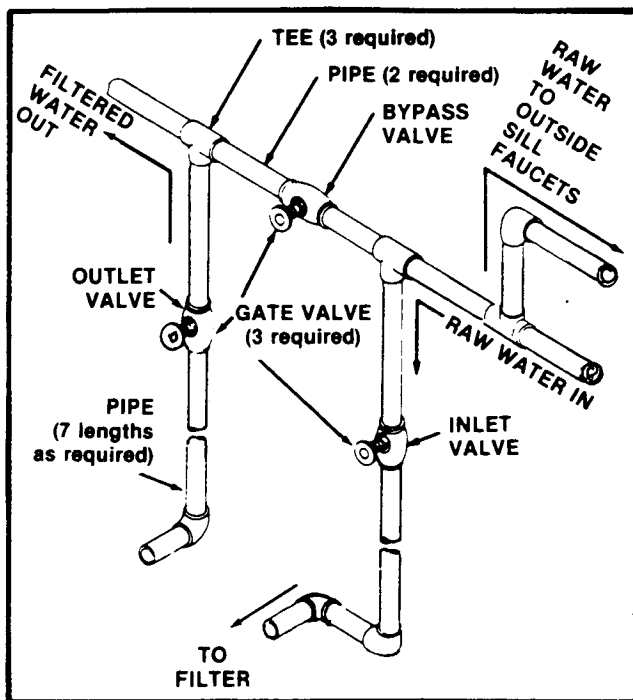


FIG. 4

LOCATION

Refer to Fig. 5.

Space requirements — Allow 6 - 12 inches (152 - 305 mm) behind the unit for plumbing and drain lines and 4 feet (1.3 metres) above for service access.

Floor surface — Choose an area with a solid, level floor free of bumps or irregularities.

Drain facilities — Choose a nearby drain that can handle the rated drain flow (floor drain, sink or stand pipe). Refer to the Drain Line Chart, Table 1, page 11, for maximum drain

line length. Most codes require an anti-siphon device or air-gap.

Electrical facilities — A 6-foot (1.8 metres) grounded cord is provided. The customer should provide a 3-prong grounded receptacle, preferably one not controlled by a switch that can be turned off accidentally. Observe local electrical codes.

⚠ WARNING! ELECTRICAL SHOCK HAZARD! DO NOT REMOVE THE GROUNDING PRONG! IF THE RECEPTACLE IS DESIGNED ONLY FOR 2-PRONG PLUGS, OBTAIN A 3-PRONG ADAPTER AND GROUND IT SECURELY TO THE RECEPTACLE. DO NOT USE EXTENSION CORDS.

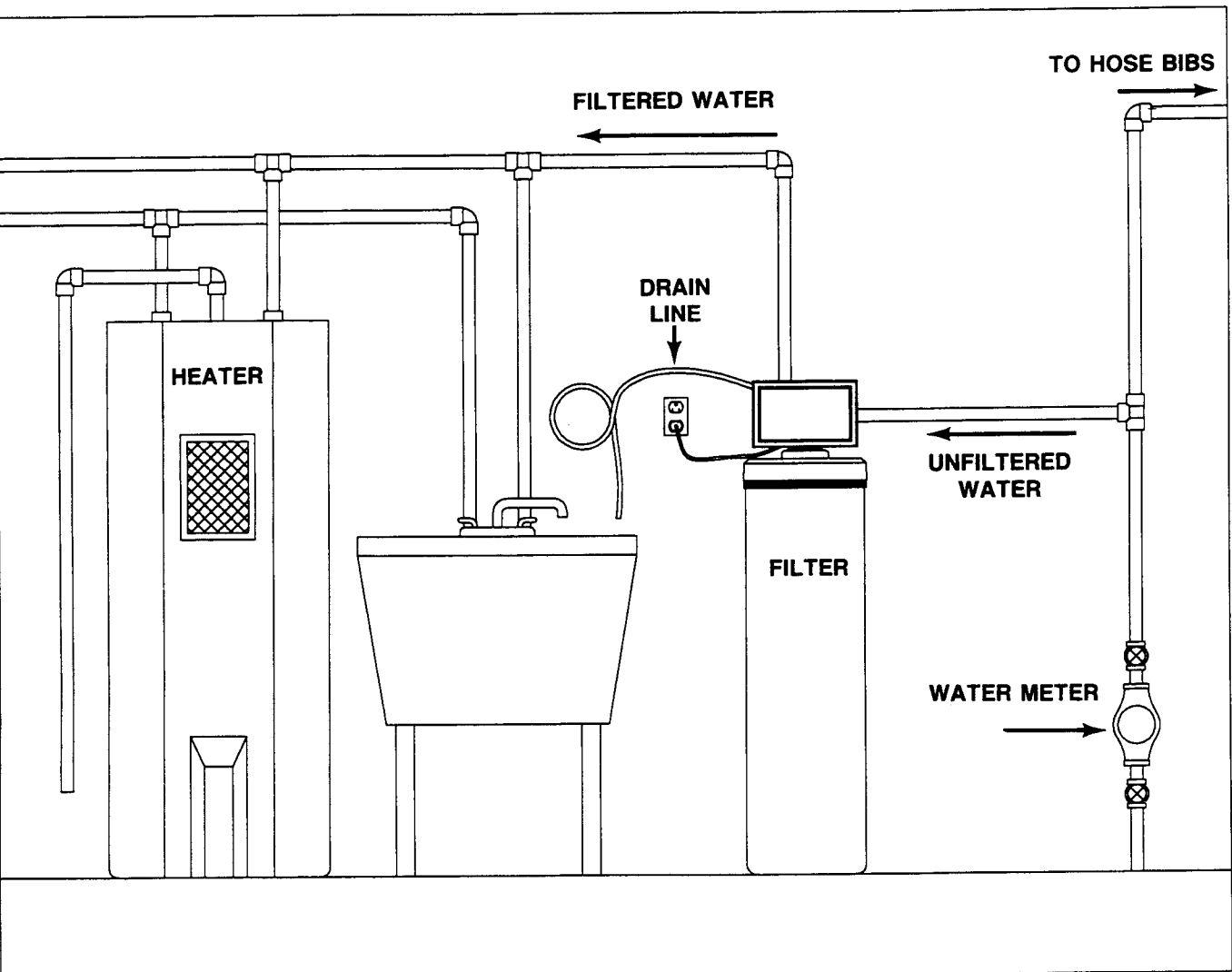


FIG. 5

Installation

PLACEMENT

Set the media tank on a solid, level surface near water, drain and electrical facilities.

PREPARE THE MEDIA TANK

- Remove and discard the hex plug from the center opening.
- In the small parts pack find a 3/8" x 1/4" brass reducer bushing.
- Apply thread sealing tape to both ends of the bushing.
- Thread the fitting into the center hole in the media tank.

NOTICE: The nipple must extend no more than 1 inch (25 mm) above the stainless steel cover plate on the tank (Fig. 6)

- Turn the media tank so that the black tank fitting is to the left.
- In the small parts pack, find two stubby, slotted, hex-headed screws with flat tips. Do not take a similar screw with a pointed tip, or the Phillips head screws; they will be used later.
- Place the tank bracket on the tank as shown and secure it with the two screws (Fig. 7).
- Find the 1/4" NPT x 3/8" plastic elbow in the parts pack. Place it on the end of the nipple and position the elbow as shown in Fig. 8.

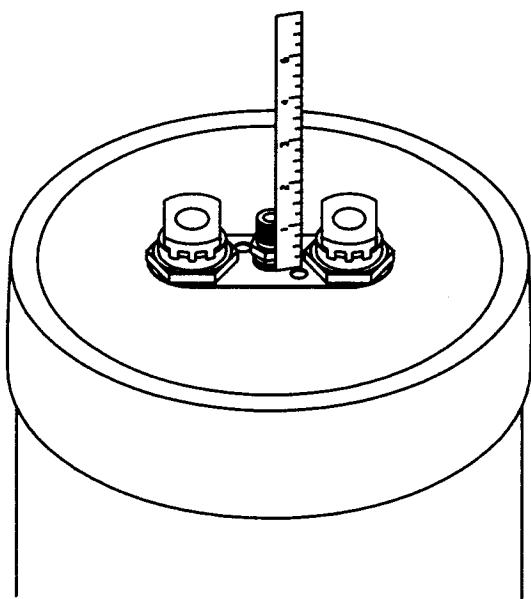


FIG. 6

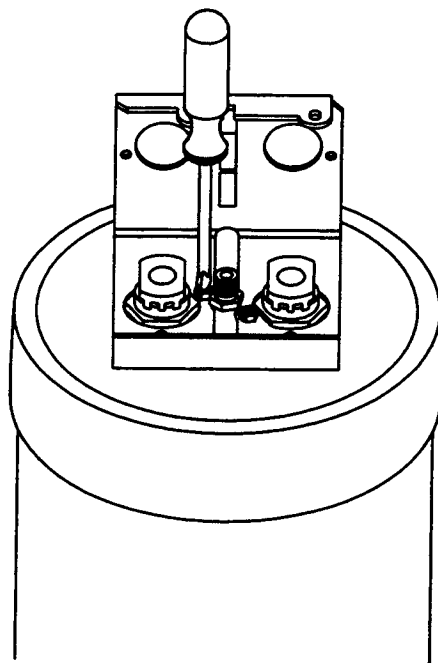


FIG. 7

INSTALL THE BYPASS

⚠ WARNING! CLOSE THE INLET SUPPLY LINE AND RELIEVE SYSTEM PRESSURE BEFORE CUTTING INTO THE PLUMBING!

⚠ CAUTION: If making sweat connections, protect the tank top and fittings from marring or contamination with spattered flux and solder!

Cul-Flo-Valv[®] Bypass

- Remove one of the knobs and pull the stem from the valve body. Set them aside.
- Fasten the bypass valve body to the rear of the tank bracket with two screws provided with the bypass valve.
- Make the plumbing connections to the Cul-Flo-Valv bypass.
- When the connections are finished, lubricate the bypass valve bore sparingly with silicone lubricant using a swab.
- Reassemble the Cul-Flo-Valv bypass stem and knob.
- Find the two plastic couplings and four O-rings that came

with the bypass valve. Lubricate the O-rings sparingly and slip them into the grooves on the adapters.

- Insert the adapters with their O-rings into the Cul-Flo-Valv bypass as shown (Fig. 9).
- Shift the valve into the Bypass position (red knob pushed toward the valve body).

NOTICE: *At this point the tank assembly should be rigidly attached to the plumbing. Provide additional plumbing support if the tank or connecting plumbing is wobbly or shaky.*

TEST FOR LEAKS

With the bypass open (Cul-Flo-Valv bypass in the “Bypass” position), slowly open the main supply valve to pressurize the system. If leaks appear, close the supply valve and relieve system pressure. Repair and repressurize.

⚠ WARNING! DO NOT REMOVE THE CUL-FLO-VALV BYPASS STEM WHILE THE SYSTEM IS PRESSURIZED!

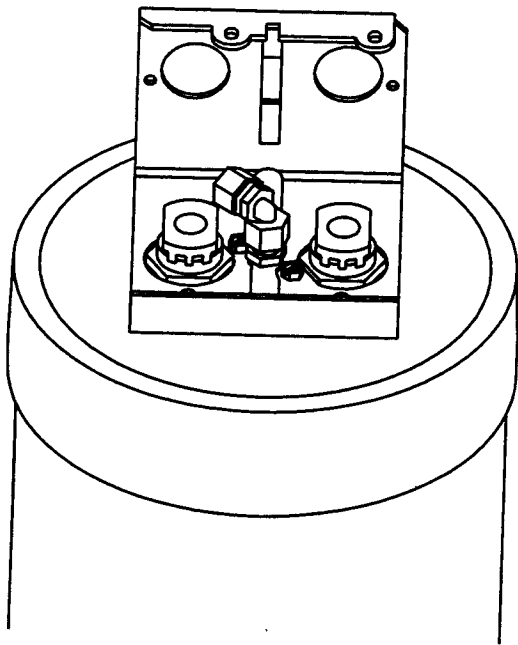


FIG. 8

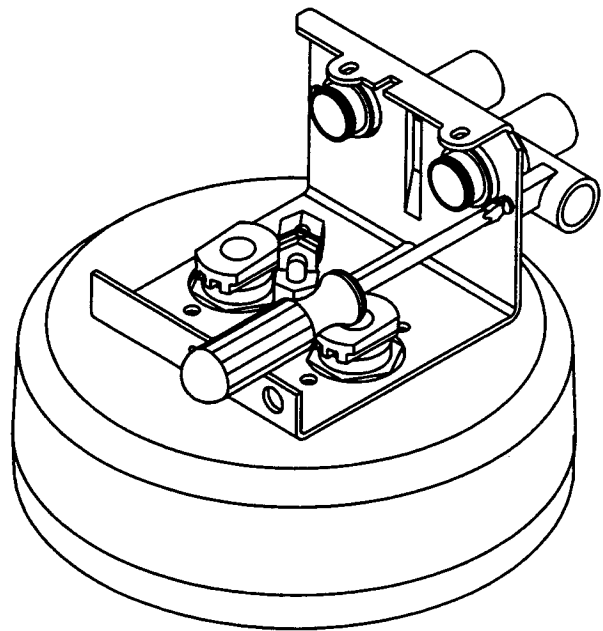


FIG. 9

- Wrap Teflon tape around the 1/4" NPTE end of the duckbill check valve. Screw into the elbow.
- Connect the 1/4" tubing between the duckbill check valve and the nipple on the top of the control using the 1/4" nut and inserts. Tighten the nuts.

DRAIN LINE CONNECTION

- Refer to Table 1 for drain line length and height limitations.
- Route a length of 1/2" drain line from the drain line fitting on the control valve to the drain.
- Find the 1/2" pipe clamp in the small parts pack. Fasten the drain line to the fitting (Fig. 120).
- Secure the drain line to the drain line to prevent its movement during regeneration.

⚠ CAUTION: Observe all plumbing codes! Most codes require an antisiphon device or air gap at the discharge point!

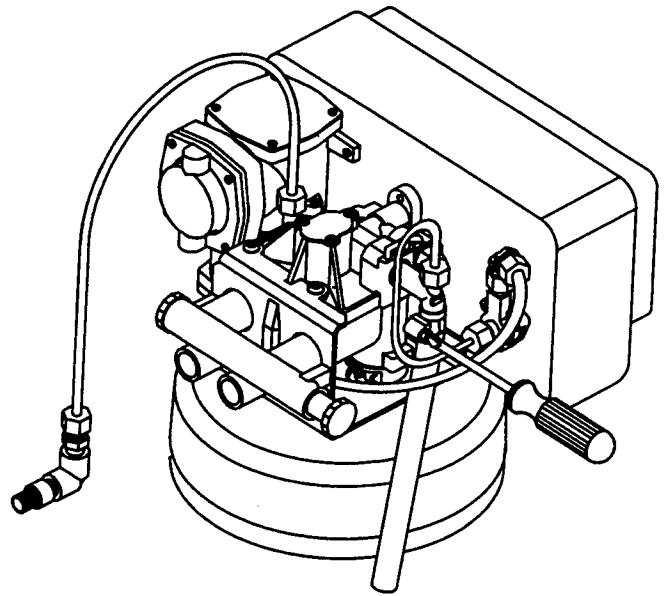


FIG. 12

TABLE 1

Average Water Pressure	Height of Drain Discharge Above Floor Upon Which Filter Sets										
	4 in. (0.1 m)	1 ft. (0.3 m)	2 ft. (0.6 m)	3 ft. (0.9 m)	4 ft. (1.2 m)	5 ft. (1.5 m)	6 ft. (1.8 m)	7 ft. (2.1 m)	8 ft. (2.4 m)	9 ft. (2.7 m)	10 ft. (3.1 m)
30 psi (207 kPa)	44 ft. (13.4 m)	38 ft. (11.6 m)	28 ft. (8.5 m)	18 ft. (5.5 m)							
50 psi (49 kPa)	103 ft. (31.4 m)	97 ft. (29.6 m)	87 ft. (26.5 m)	77 ft. (23.5 m)	67 ft. (20.4 m)	57 ft. (17.4 m)	47 ft. (14.3 m)	37 ft. (11.3 m)	27 ft. (8.2 m)	17 ft. (5.2 m)	7 ft. (2.1 m)

Settings

The microprocessor settings are adjustable. Set the timer according to water conditioners and customer preferences.

⚠ WARNING! SHOCK HAZARD! REMOVE ALL POWER FROM THE CONTROL BEFORE PROCEEDING.

⚠ CAUTION: The control system circuit board is attached to the front of the enclosure and connected to the rest of the control with wires. DO NOT allow the enclosure to drop, or the wire connectors may be broken.

Component Location

Locate the following components on the rear of the circuit board (Fig. 13):

1. Power (JP1). Connected to the transformer at the factory.
2. Piston Motor Output (JP2). Connected to the piston motor at the factory, and powered by the 10 amp relay immediately to the right.
3. Compressor Output (JP6). Connected to the compressor at the factory, and powered by the 10 amp relay immediately to the left.
4. Capacitor. Holds the program in memory for up to two days in the event of a power outage.
5. Cam Input (JP3). Connected to the motor cam microswitches at the factory.
6. DIP Switches. Ten rocker or slide switches will be set during installation according to the type of application.

Setting DIP Switches

The DIP switches on the circuit board are used to select the operating mode of the unit(s). See FIGURE 14 and use TABLE 2 to choose the settings required for the unit and application.

PROGRAMMING

Upon plugging in the Culligan® Super S™ control, the display will flash "8888" (default). To access the programming mode, press the status button. Refer to Page 13 for the programming sequence.

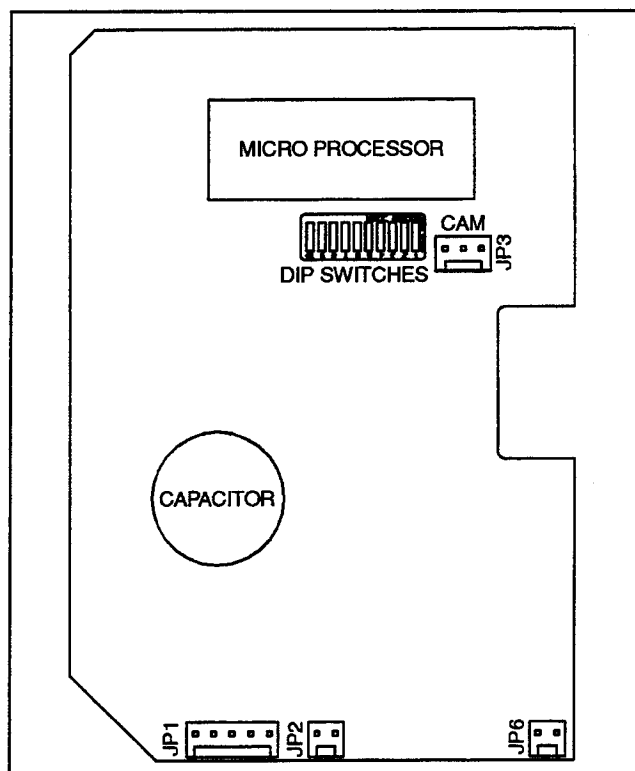


FIG. 13

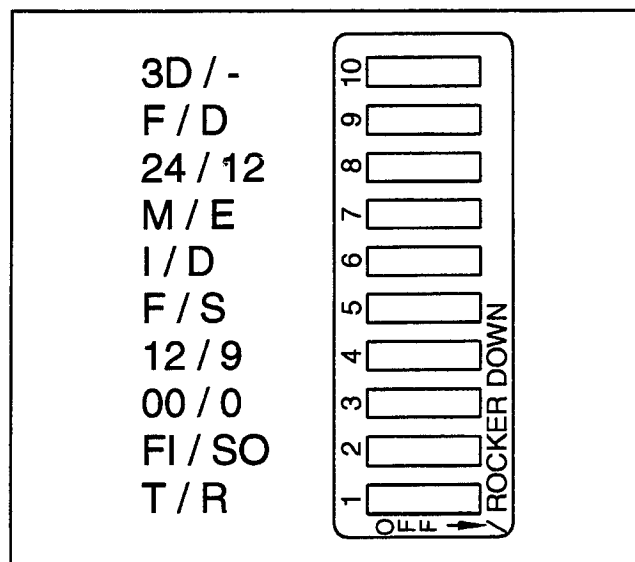


FIG. 14

TABLE 2 DIP Switch Settings

FUNCTION	SWITCH	ON	OFF	COMMENTS
Test / Run	1	Test	Run	Diagnostics
FI / SO	2	Filter	Softener	Unit Type
00 / 0	3*	Not Used	Not Used	Set OFF
12 / 9	4	12" Tank	9" Tank	
F / S	5	Not Used	Not Used	Set OFF
I / D	6	Immediate	Delayed	Regeneration Type
M / E	7	Metric	English	Liters or Gallons
24 / 12	8	24 Hour Time	12 Hour (AM & PM)	
F / D	9	Not Used	Not Used	Set OFF
3D / -	10**	Regen Every 3 Days	Regen by Signal	Set OFF

1. Plug in.

Press status.
12:00 will appear.



Press ▲ to increase or
▼ to decrease

Displays flashing

Set **Time-of-Day**.

2. Press status.



Press ▲ to increase or
▼ to decrease

Set **Recharge Time**.

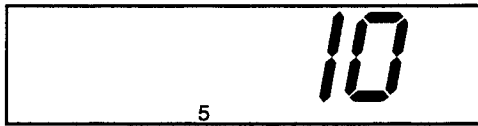
3. Press status.



Press ▲ to increase or
▼ to decrease

Set **Compressor OFF Time** (5 to 120 minutes).

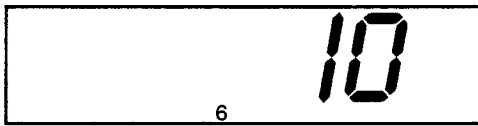
4. Press status.



Press ▲ to increase or
▼ to decrease

Set **Backwash Time**
(5-40 minutes). **ALL MODELS.**

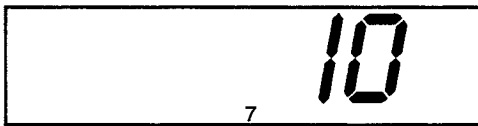
5. Press status.



Press ▲ to increase or
▼ to decrease

Set **Regenerant Draw Time** (1-15 minutes).

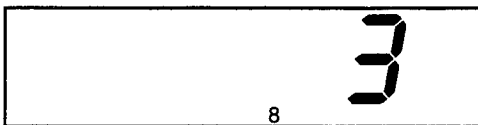
6. Press status.



Press ▲ to increase or
▼ to decrease

Set **Fast Rinse** (5-30 minutes).

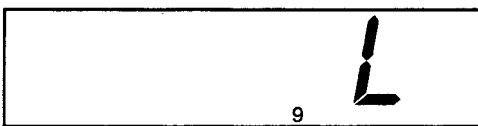
7. Press status.



Press ▲ to increase or
▼ to decrease

Set **Regeneration Interval** (1-42 days).

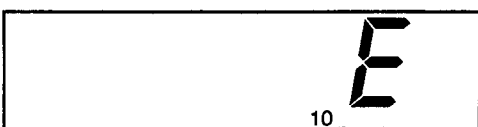
8. Press status.



Press ▲ simultaneously
▼

Set **LOCK** or **UNLOCK** feature to prevent
tampering with settings.

9. Press status.



Press ▲ enable or disable

Set **ENABLE** or **DISABLE** feature to allow
constantly illuminated display or a blank
display after 1 minute.

TYPICAL DIP SWITCH SETTINGS

All switches are in the off position, EXCEPT #2 and #4 in the on position.

COMPRESSOR SETTING

Refer to Table 3 for Compressor OFF Time Setting.

TABLE 3 OFF TIME SETTING

Iron-ppm (mg/L)	Approx.	Time
3 or Less	75-120	min.
4-7	45-90	min.
8-11	30-60	min.
12 or more	8-15	min.

The on time is fixed at 30 seconds.

Note: The time settings are recommendations. Timer settings may vary depending on the application & usage.

RECHARGE FREQUENCY

Refer to Table 4 for Frequency of Regeneration

BACKWASH

Factory-set at 10 minutes, backwash is adjustable from 5 to 20 minutes. Backwash should last only long enough for the water at the drain to run clear.

REGENERANT DRAW CYCLE

The Super S_™ filter uses one gallon of 5-1/4 percent chlorine bleach during the regeneration cycle. A fresh bottle must be in place before each regeneration.

RAPID RINSE

Rapid rinse settles the media bed and flushes turbidity to drain before the start of the next service run. Factory set at 5 minutes, rapid rinse can be extended to as long as 30 minutes.

TABLE 4 - FREQUENCY OF REGENERATION (Gallons)

PPM H ₂ O	PPM IRON					
	0	1 - 2	3 - 5	6 - 10	11 - 15	16 - 20
0	NA	11,250	4,500	2,250	1,500	1,125
1 - 2	5,625	2,250	1,125	550	NR	NR
3 - 5	2,250	1,125	450	450	NR	NR
6 - 8	1,400	700	NR	NR	NR	NR
9 - 10	1,125	550	NR	NR	NR	NR

⚠ CAUTION: *The media must be soaked for at least 12 hours before start-up (see "Preparation"). Filling the tank without presoaking will likely cause media loss!*

- Close the main supply valve.
- All faucets in the installation site should be closed. Ask the customer not to use water for the next 30 minutes or so.
- Set the bypass valve(s) to bypass.
- Direct the drain line discharge into a bucket where flow can be observed.
- Remove the timer face plate and set it aside.
- Remove the two screws which hold the timer cover and set the cover aside.
- Disconnect harness wire from JP6 on the circuit board. This will keep the compressor from running during the initial filling.
- Replace the timer cover.
- Plug the unit into a 120 Volt, 60 Hertz, 1 phase grounded, 3-prong receptacle (or 2-prong receptacle with grounded 3-prong adapter), wait for unit to complete homing cycle.
- Open the main supply valve slowly.
- On the timer, push the Regen button twice. This should shift the control into the backwash position.
- Shift the Cul-Flo-Valv[®] bypass toward the "Soft Water" position until water flows. On three-valve bypass installations, close the bypass valve and slowly open the inlet valve.
- Allow the unit to fill slowly until water flows from the drain line.
- When water flows to drain, open the inlet valve fully. Watch the drain discharge for media particles. If media particles appear, reduce the flow. Increase the flow again when media particles no longer appear in the discharge.
- When the unit is filled with water, return the timer to the service position.
- Disconnect the control from the power supply.
- Remove the cover and connect harness wire to JP6 on the circuit board.

VERIFY PERFORMANCE

Air Injection Check Valve

With water pressure on the unit, observe the free end of the air injection check valve. Water should **not** flow from the fitting. When this has been verified:

- Close the main supply valve and depressurize the unit.
- Remove the air injection check valve from the end of the tubing.
- Install the check valve into the threaded opening at the bottom of the compressor and reconnect the tubing. (Fig. 15).
- Open the main supply valve and continue with the installation.

Air Relief Solenoid

- Disconnect the control from the power supply.
- Remove the timer cover.
- Set the microprocessor "Compressor Off Time" to the "minimum" setting.
- Place the drain line into a bucket of water so that the discharge is submerged.
- Start the compressor by plugging in the power cord. The compressor will run about 30 seconds. If more run time is needed, briefly unplug, then plug in again. Repeat as needed to run the compressor through successive cycles.
- The drain line should bubble vigorously.

NOTICE: *The compressor may have to run for several cycles before air appears at the discharge.*

Installation is now complete. Before leaving the installation site:

- The water heater will hold unconditioned water for several days. To ensure conditioned hot water immediately, drain the water heater and allow it to refill with filtered water.
- Explain the operation of the filter and bypass valve to the customer. Give the customer the Owner's Guide and warranty policy. Make sure the customer knows that there will be new sounds associated with the operation and recharging of the unit. Advise the customer to replenish the bleach supply after each recharge (Super S filter only).
- Clean up the unit and the installation site, removing any soldering or pipe threading residues from the equipment with a damp towel.

Operation, maintenance and service instructions follow. The material is intended for Culligan trained technicians only.

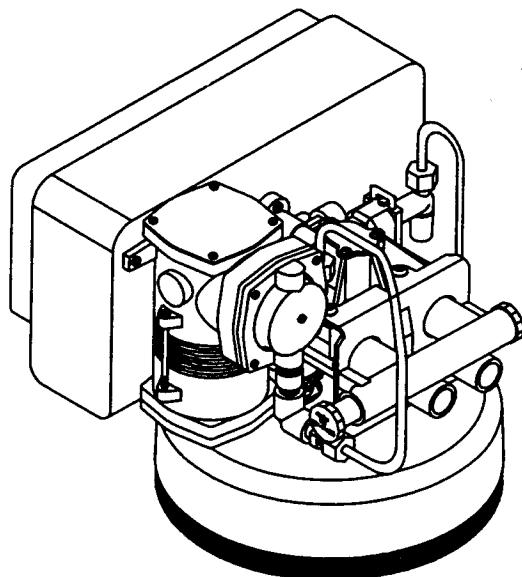


FIG. 15

Operation, Care and Maintenance

Compressor

The air compressor cycles in a regular pattern 24 hours a day whether water is used or not. The compressor does not operate during the recharge cycle, except briefly as the control shifts positions and at the end of the cycle.

NOTICE: *Instruct the customer to unplug the unit if water will not be used for an extended period, such as during a vacation.*

Recharge

The filter can recharge automatically as often as daily. The recharge cycle must be started manually if the filter is to be recharged less frequently. Once started, however, recharge proceeds without further attention.

Super S_m filters require bleach as a regenerant. Place the education valve into an open gallon bottle of common household bleach (5-1/4%) prior to every recharge. (Fig. 16)

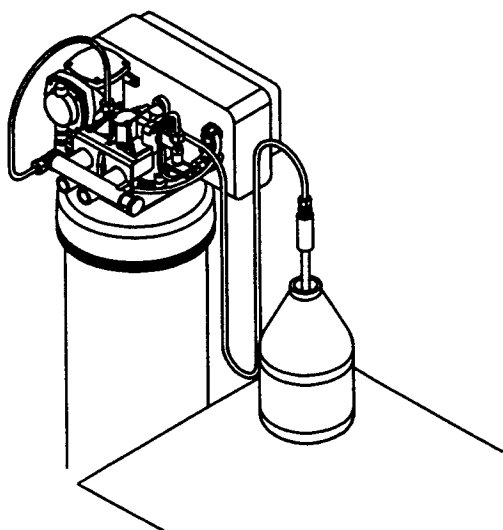


FIG. 16

MAINTENANCE

Because of the water quality the Super S water filters are used on, routine maintenance is essential.

Air Injection Check Valve

The injection check valve prevents water backup into the compressor. Water intrusion can cause scaling and corrosion leading to compressor failure.

Inspect monthly tube connecting the compressor and the injection fitting. Water laying in the lowest part of the tube may indicate check valve failure.

The customer may perform this inspection but should be instructed to call the dealer for service. Refer to the "Service" section for service procedures.

Air Relief Solenoid Valves

The air relief solenoid valve bleeds excess air from the media tank. It opens whenever the compressor runs. In the Super S filter, the valve is exposed to iron-bearing water and it can become fouled with iron particles.

Inspect the air relief as follows:

- Shut off the inlet water supply and open a faucet to relieve system pressure.
- Disconnect the plastic tubing from the inlet and outlet fittings of the air relief solenoid valve.
- Remove the 3 screws mounting the relief valve to the back plate.
- Remove any iron deposits from the valve body and diaphragm. A dilute solution of Culligan® Sofner-Gard_m chemical can be used to help clean the body. **Observe the precautions of the Sofner-Gard chemical container.**

- Reassemble the relief valve and tubing and repressurize the system.
- Test the air relief valve as described during “Start-Up”, page 13.

Media Life

Super S_m media estimated life is 750,000 ppm-gal (197,400 mg/l-liters).

SERVICE

The Super S filters rely on the action of air and the special CIM filter media to efficiently remove iron and hydrogen sulfide. A failure in the air delivery and venting system will cause a general failure of the filter.

Refer to the troubleshooting guide on page 18 and the following service procedures.

⚠ WARNING! DISCONNECT ELECTRICAL POWER AND RELIEVE SYSTEM PRESSURE BEFORE DISASSEMBLING ANY PART OF THE UNIT!

Air Injection Check Valve

The injection check valve protects the compressor from water intrusion. Should water backup occur, clean or replace the injection check valve and inspect the compressor:

- Close the main supply and depressurize the unit.
- Disconnect the tubing from the injection check valve and remove the injection check valve from the compressor.
- Inspect the check valve for debris, deposits or deterioration.
- Clean or replace as needed and reassemble.
- Test the valve as described during “Start-Up”, page 13.

Air Compressor

The compressor may need replacement or rebuilt if it: a) fails to deliver air to the media tank or, b) makes excessive noise.

To test the compressor.

- Remove the tubing and check valve from the outlet side of the compressor.
- Screw in an elbow (PN 00-4416-13) and pressure gauge (PN 00-4486-21). (Fig. 17)
- Start the compressor by plugging the unit into the power supply.

Pressure should be at least 65 psi when the compressor is working properly. If the pressure is lower, replace the compressor as follows.

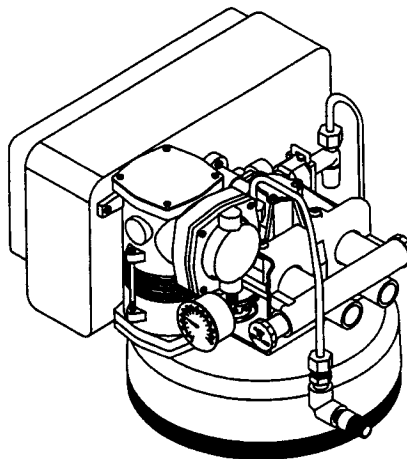


FIG. 17

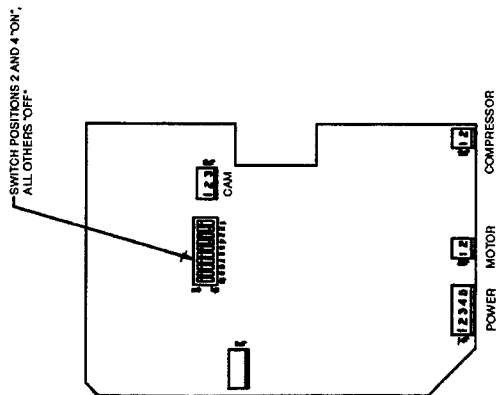
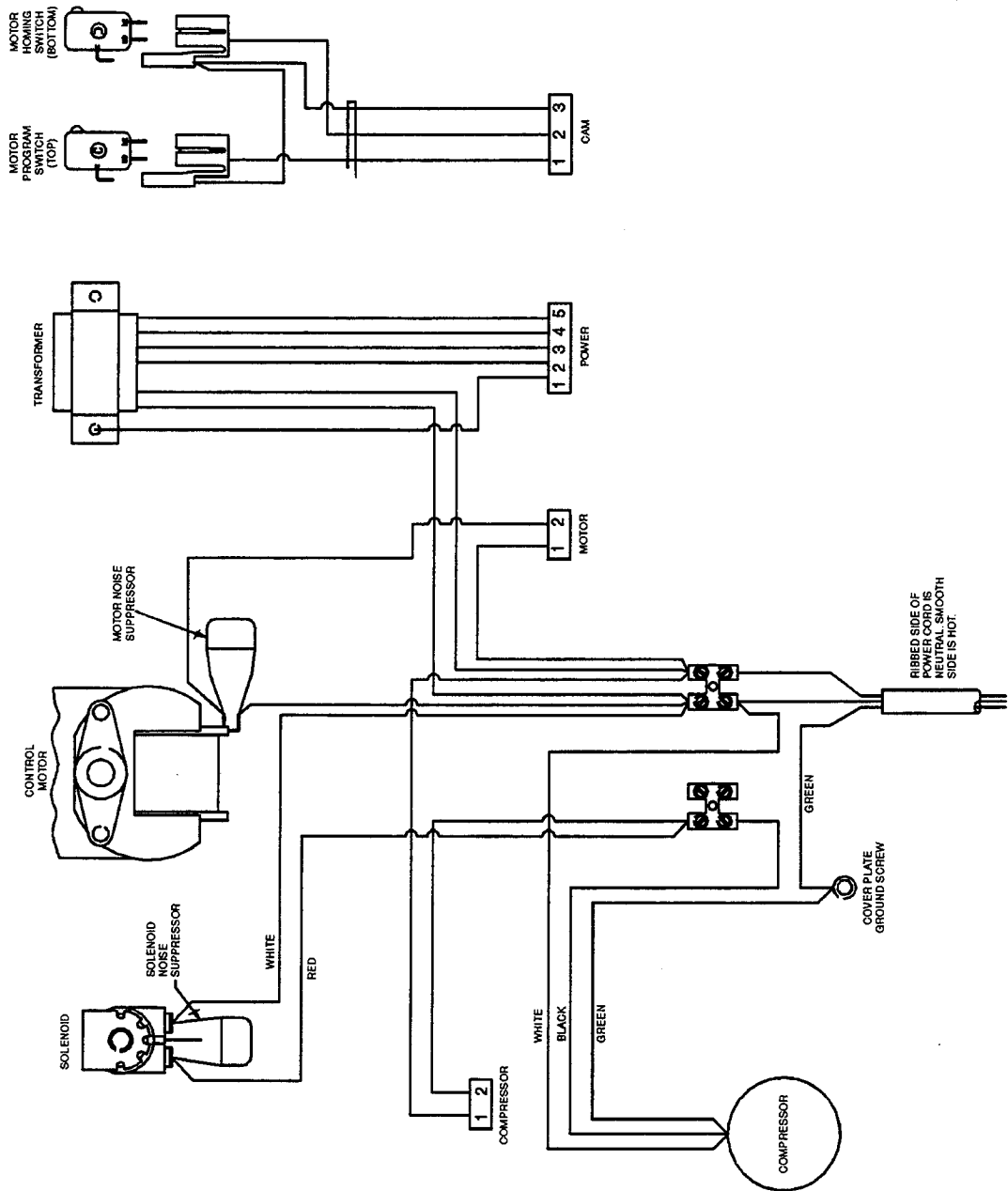
⚠ WARNING: DISCONNECT THE UNIT FROM THE POWER SUPPLY BEFORE DISASSEMBLING!

- Remove the timer cover.
- Remove the screws holding the timer assembly and move the timer out of the way.
- Disconnect the compressor leads from the terminals. Remove the ground screw.
- Remove the 3 screws which hold the compressor to the backplate.
- Replace and reconnect the compressor to the unit.
- Verify compressor operation before restoring the unit to service.

Troubleshooting Guide

PROBLEM	PROBABLE CAUSE	REMEDY
1. Compressor doesn't run	A. compressor unplugged B. system in regeneration C. settings incorrect D. bad circuit board	A. plug it in B. set timer to service C. set correctly D. replace circuit board
2. Compressor runs with excessive noise	A. dead head pressure is 65 psi B. dead head pressure is less than 65 psi	A. consult factory B. rebuild compressor
3. Compressor runs continuously	A. incorrect settings B. bad relay	A. set settings correctly (see Page 14) B. replace circuit board
4. Iron to service	A. unit needs backwashing B. compressor not working C. iron in another form besides soluble D. seal leak E. unit in bypass F. O-rings of Cul-Flo-Valv [®] Bypass stem are cut G. outlet manifold damaged	A. backwash unit B. see 1. C. consult Problem Water Reference manual for proper treatment D. replace seal pack E. shift bypass valve F. replace O-rings G. replace outlet manifold
5. Hydrogen Sulfide to service	A. unit needs regeneration B. compressor not working C. seal leak D. unit in bypass E. O-rings of Cul-Flo-Valv Bypass are cut F. outlet manifold damaged	A. regenerate unit B. see 1. C. replace seal pack D. shift bypass valve E. replace O-rings F. replace outlet manifold
6. Leaks to drain	A. seal leak B. fouled air relief solenoid	A. replace seal pack B. clean air relief solenoid
7. Air to Service	A. fouled air relief solenoid B. compressor runs continuously	A. clean air relief solenoid B. see 3.

Wiring Diagram



PIN NO	WIRE COLOR	WIRE COLOR	WIRE COLOR	WIRE COLOR	WIRE COLOR
1	GREEN	BLACK	YELLOW	BLACK	BLACK
2	RED/WHITE	BLACK	RED	RED	RED
3	RED	RED	BROWN		
4	YELLOW				
5	YELLOW/BLACK				
CONNECTOR	POWER JP1	MOTOR JP2	CAM JP3	COMPR JP6	