

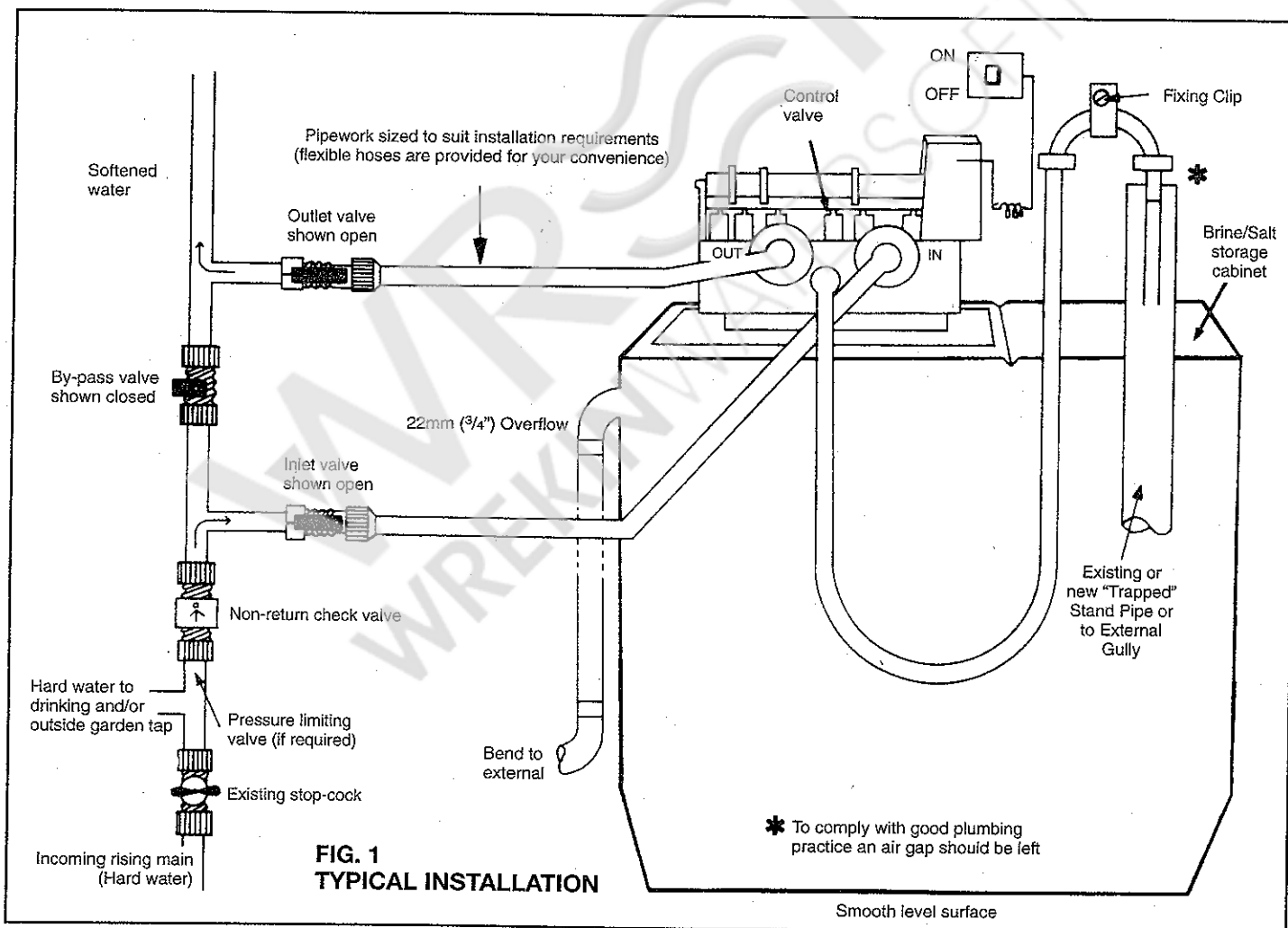


HI-TEC HI-TEC METER MICRO

INSTALLATION, COMMISSIONING, PROGRAMMING & USER INFORMATION

These instructions are designed to give you the customer a complete understanding of how to locate, install, programme and obtain trouble-free running of your AQUA-DIAL WATER SOFTENER.

Whether you intend to install the unit yourself or obtain the services of a tradesman, please spend a few minutes reading through this booklet and the other enclosed details. It will give you a complete understanding of the "SOFT WATER WORLD" that you are about to enter. **PLEASE RETAIN FOR FUTURE REFERENCE.**



LOCATION

The softener should be located as close as practicable to the incoming cold rising main supply. Very often (*but not always*) this main is in the kitchen or utility room. Sometimes the main rises in a downstairs cloakroom, under the stairs, or in the garage. In most cases the softener can be sited in any of these locations as well as outside (*with suitable frost protection cabinet*) or even in the loft space.

REQUIREMENTS

THE SOFTENER REQUIRES

- Mains Water Supply 20-120 p.s.i. (1.36-8.16 Bar) pressure.
- Optimum pressure is 60 p.s.i. (4 Bar).
- A waste connection.
- An electrical point.
- Access for salt filling and service.

PRE-INSTALLATION

INSTALLATION

Your Softener comes complete with a basic 10mm flexible trade installation kit (*see detail sheet with kit*). Alternatively you can disregard the hoses and "hard plumb" the connections in 15mm or 22mm copper tube.

Unvented/direct mains fed plumbing and hot water systems: Disregard the inlet and outlet hoses, valves and non-return check valve. "Hard plumb" using 22mm copper tube and fittings. A 22mm (3/4") non-return check valve will also be required. It must be UK W.F.B.S. listed.

The following are available from Aqua-Dial or your supplier:

1. 22mm (3/4") non-return valve.
2. Pressure limiting valve 3.5 Bar (50 p.s.i.) for high pressure areas.
3. Hardness measuring kit: For accurate testing.
4. Drinking water tap: For hard water drinking point.
5. Drinking water filter kits.
6. 12.5mm inlet/outlet hoses.

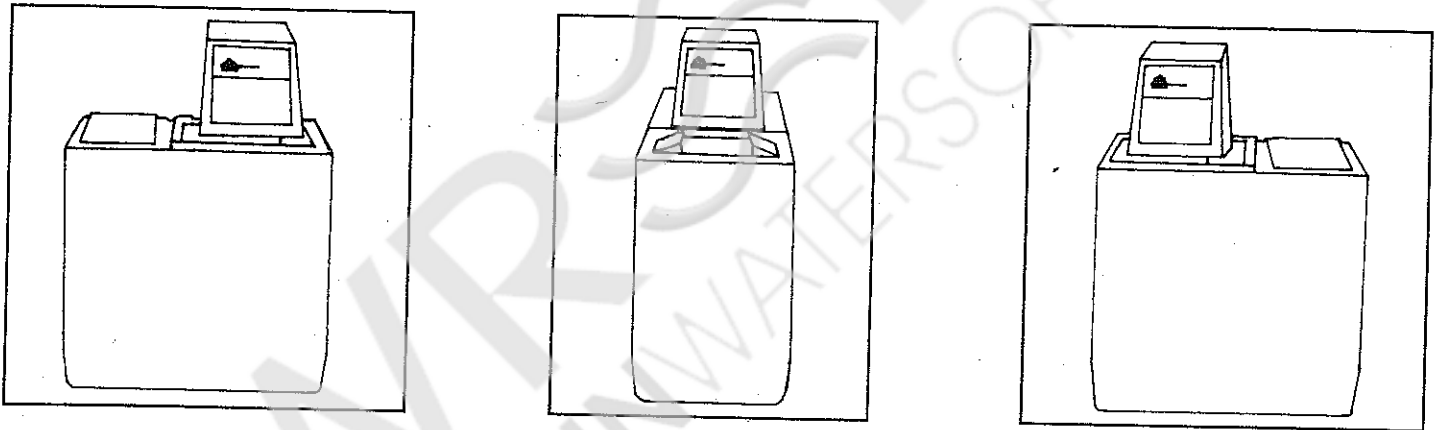


FROM THIS LABEL ON THE
VALVE COVER ESTABLISH WHICH
MODEL YOU HAVE

CHOOSING THE BEST POSITION

By using Aqua-Dial's unique indexing system you can select the easiest valve position to suit your requirements.

FIG. 2



TO ALTER THE VALVE POSITION - ALL MODELS

1. Remove steel transit screws (Fig. 3).
2. Carefully lift the entire valve head pressure vessel and brine pick-up tube assembly. Replace to new position (Fig. 4).
3. Insert the four plastic screws loosely on the top plate – tighten when all four are located.

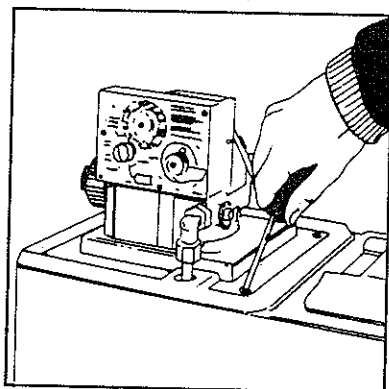


FIG. 3

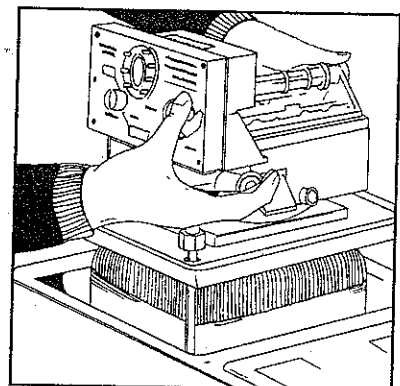


FIG. 4

LOW-HEIGHT - RESTRICTIONS (under low sinks etc)

If you are in a situation where height is a problem, it is possible to mark out the shape of the Softener cabinet and cut out the wooden plinth. Allow the "Cut-Out" to fall through the hole to act as a smooth base for the Softener to sit on. The gap between the Softener and the cut out can be filled with a plastic edging strip.

It is also possible to cut off the back section of the valve cover to allow the cover to pull forward rather than have to be lifted up.

INSTALLATION

1 STARTING THE INSTALLATION - ALL MODELS

Before commencing the installation, ascertain that the water pressure is not too low or high. Optimum operating pressure is 1.4 to 4 Bar (20 to 60 p.s.i.). If daytime pressure exceeds 4 Bar (60 p.s.i.), then a pressure limiting valve should be installed. These are available from your supplier and should be located as shown in Fig. 1. Pressure can be determined by applying a gauge to an outside tap or single pillar tap or by contacting your local Water Board. If water splashes out over the sink when the cold tap is turned fully on, it is a good indication of high pressure.

2 DRAIN THE RISING MAIN

Turn off the existing cold mains supply stopcock and drain down any water in the pipe via the "drain off cock" or kitchen cold tap. To allow air to enter the main via the ballvalve in the loft tank, run a small amount of water from the cold tap in the bathroom. If all your cold supply connections are off the rising main, open a tap at the highest point.

3 INSTALLING THE BY-PASS SET

Cut the rising main and install the inlet, outlet and by-pass valves as shown in Fig. 1. Install the non return check valve and connect hard water supply to kitchen drinking tap and/or outside garden supply (if required). Re-site or install a "drain off cock" as indicated. Fit the pressure limiting valve (if applicable) prior to the hard water inlet to the softener.

Turn the inlet and outlet valves to closed (handle pointing across water flow). Turn the by-pass valve to open (handle pointing with the water flow).

Ensure the "drain off cock" is closed and turn back on the existing stopcock. This will allow hard water to again enter the system.

4 CONNECTING INLET/OUTLET HOSES

From the inlet valve connect a hose to the "PORT" marked IN → on the softener control valve (Fig. 1). Check that the rubber washers (Fig. 5) are in place and hand tighten nut plus half turn with a spanner. Connect outlet hose from outlet valve to softener in the same manner.

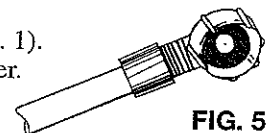
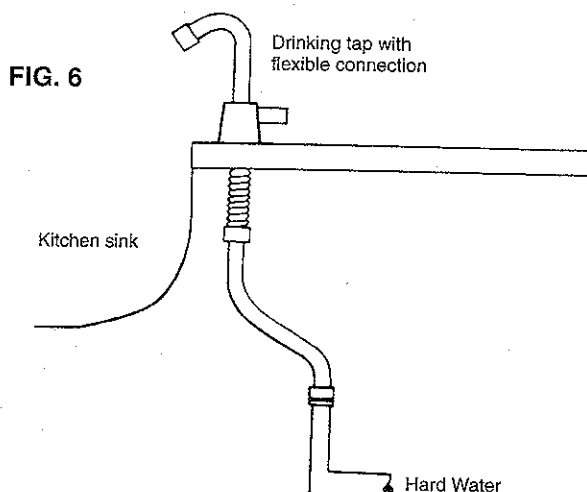


FIG. 5

5 CONNECTING THE HARD WATER DRINKING TAP

The cold supply to the kitchen sink can be left on hard water or alternatively a separate hard water tap can be installed as Fig. 6. Aqua-Dial can supply a hard water drinking tap kit or filter kit (Fig. 7).



NOTE - IMPORTANT!

Softening water increases the sodium content of raw water. Anybody on a sodium free or low sodium diet should not drink softened water. Do not use softened water in artificial baby feeds as the powdered milk will already contain the correct level of sodium.

The Aqua-Dial
Drinking Water
Filter Kit.

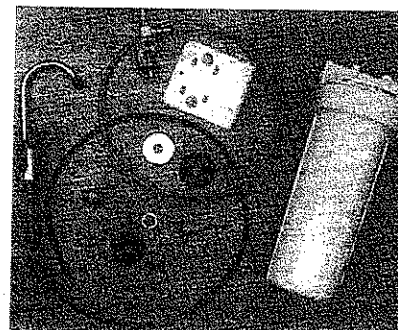


FIG. 7

A complete kit to give you clear fresh tasting drinking water. Available from your Aqua-Dial supplier.

6 PLUMBING THE DRAIN CONNECTION

The drain outlet for the softener is located between the inlet and outlet port. See Fig. 1. The drain operates under mains pressure during regeneration. White flexible drain hose is supplied with a pre-jointed elbow. The drain hose may be run into an existing or new "stand-pipe" (as in a washing machine installation) or directly into an external gully. If the drain hose is exposed to the outside, the part outside should be insulated to prevent freezing.

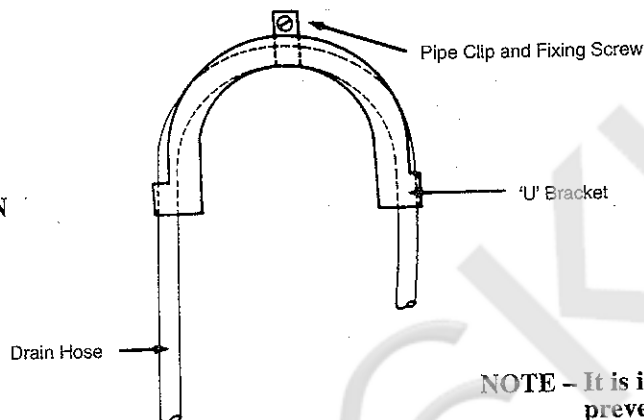
The drain can be connected to a soil stack via a deep-seal trapped connection and "stand-pipe".

As the drain is under pressure, it may be elevated as in cellar or under stair type installations.

Always leave an air gap between water level and hose outlet when discharging into a stand-pipe. **Secure the hose at stand pipe to prevent "kinking" and accidental removal or "blow out" of the hose.** Using the plastic 'U' bracket and the pipe clip supplied in the kit.

FIG. 8

TO PREVENT DRAIN HOSE KINKING



NOTE - It is important that the pipe clip is used to prevent the hose slipping out.

7 OVERFLOW CONNECTION

The overflow connection is located at the rear of the softener. It is *not* under pressure and **cannot be elevated. The overflow pipe must run downhill** and terminate either outside the building or into an internal stand-pipe. Use 22mm rigid plastic overflow pipe in conjunction with the elbow supplied. See Fig. 1. Always try to have a vertical drop as shown.

The 22mm rigid plastic overflow pipe can be obtained from your supplier. It is also suitable for long runs.

The overflow bend supplied on the Softener can be adapted to "OSMA" or similar "solvent weld" system by purchasing a suitable adaptor.

8 ELECTRICAL CONNECTION

The low voltage adaptor should be plugged into a 13 amp socket. The electrical connection is simply plugged in at the timer end.

POWER FAILURES

In the event of an electrical power failure it will be necessary to reset the time displayed - see section 10. For Hi-Tec and Micro or section 13 for Hi-Tec Meter.

9 COMMISSIONING THE SOFTENER

Hi-Tec and Micro, follow Sections 9,10 and 11.
Hi-Tec Meter, go straight to Sections 12 and 13.

COMMISSIONING SOFTENER HI-TEC AND MICRO

1. Remove white control valve cover.
2. Depress and turn pointer knob 'H' (Fig 10) on the control, anticlockwise using broad headed screwdriver, to the backwash position. Assist this movement by simultaneously turning the camshaft with your other hand. (Fig. 13 Part 1B).
3. Close the by-pass valve as Fig. 1. Open inlet valve partially by turning. The blue (resin) vessel should now be heard to fill with water. Air in the resin vessel and valve will be evacuated out of the drain pipe.
4. When water starts running from the drain, open the inlet valve fully and allow to run for three minutes.

5. Depress and turn pointer knob 'H' anticlockwise to a point just before the brine re-fill and purge position.
6. Switch on power supply. Check that clock motor can be heard running.
7. Allow clock to run pointer knob anticlockwise to softened water position. Allow approximately 15 minutes. Ensure that brine storage cabinet (Fig. 1) stops filling, approximately 1 gallon (4.5 litres) of water.
8. Fill brine storage tank with salt to a level not exceeding 3 inches (75mm) below top of the tank. Granular or tablet salt is suitable. The salt will be dissolved and gradually used by the machine. A visual check should be carried out on a 3 to 6 weekly interval (depending on usage). Re-fill when salt is at a level of approx. 5" (125mm) remaining or before.
9. Fully open outlet valve and check the by-pass valve is closed. Fig. 1. You now have softened water.
10. Set clock and regeneration days required (see Adjustment of Timer).

10 ADJUSTMENT OF TIMER HI-TEC AND MICRO

1. Set time arrow 'D' (Fig 10) to correct time of day by grasping timer knob 'E', pulling outwards and rotating in either direction until the actual time of day on the 24hr. time dial lines up with time arrow 'D'. Release timer knob 'E' and ensure that cogs relocate.
2. Rotate skipper wheel 'B' until the day of the week faces the day arrow 'C'.
3. From the "regeneration chart" decide how often you wish to regenerate. Your local water supply company will give you the hardness of your water in p.p.m. (parts per million as CaCO₃) or mg/l. These are the same. Hi-Tec Example: Hardness 300 p.p.m. 3 people. Regenerate every 3 days, on skipper wheel 'B' pull all skipper pins 'A' out and push in Friday pin and Monday pin. This will allow a 3 and 4 day regeneration at 3 a.m.

If regeneration is required every two days push in Friday pin, Sunday pin, Tuesday pin. This always leaves Wednesday, Thursday and Friday (low usage days).

For regeneration 1 day per week, push in Friday pin.

4. Manual Regeneration. If you need an extra amount of softened water at any time, a manual regeneration can be started by:

Pushing in the pointer knob 'H' and turning anticlockwise to start. A regeneration will take 60 minutes on the Micro and 90 minutes on the Hi-Tec.

N.B. Any water used during the regeneration will be replaced with hard water in the plumbing system.

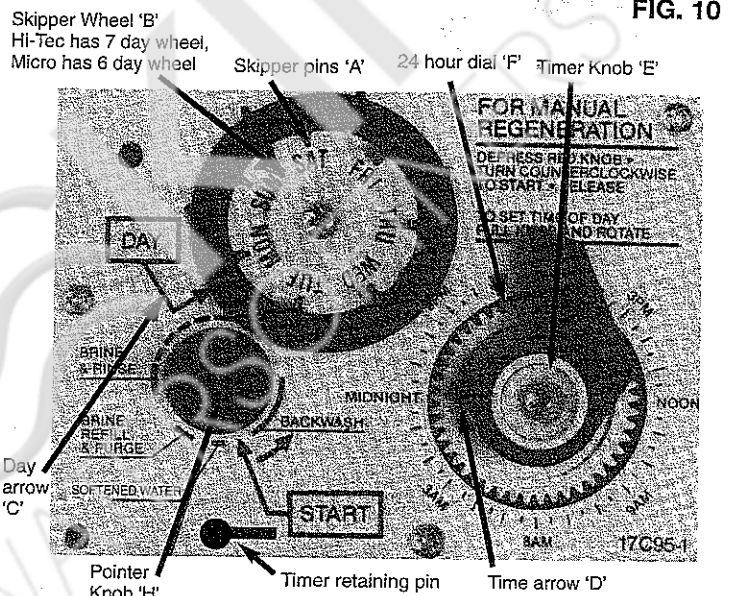


FIG. 10

REGENERATION CHART HI-TEC

Hardness in°	Hardness in p.p.m.	Litres per regeneration	Persons in household						
			2	3	4	5	6	7	
10°	150	4570	7	7	7	3-4	3-4	3-4	
14°	200	3430	7	7	3-4	3-4	3-4	3-4	
17°	250	2740	7	3-4	3-4	3-4	2	2	
20°	286	2395	7	3-4	3-4	2	2	2	
21°	300	2285	7	3-4	3-4	2	2	2	
24°	350	1960	3-4	3-4	3-4	2	2	1	
28°	400	1715	3-4	3-4	2	2	1	1	
30°	430	1595	3-4	3-4	2	1	1	1	

DAYS BETWEEN REGENERATION

REGENERATION CHART MICRO

Hardness in°	Hardness in p.p.m.	Litres per regeneration	Persons in household		
			1	2	3
10°	150	2060	6	6	3
14°	200	1545	3	3	3
17°	250	1235	6	3	2
20°	286	1080	6	3	2
21°	300	1030	6	3	2
24°	350	880	3	2	1
28°	400	770	3	2	1
30°	430	715	3	2	1

DAYS BETWEEN REGENERATION

11 DECIDING WHEN TO REGENERATE HI-TEC

The regeneration chart is a guide to capacities and usage based on the industry standard 160 litres of water per person per day. Naturally everyone's usage will vary and regeneration can be altered to suit. If towards the end of the interval between regenerations the water starts to get hard, re-programme the softener to regenerate more frequently. Capacities are shown in p.p.m. (parts per million) as CaCO₃ equivalent. One degree (Clark or English) = 14.29 p.p.m. EXAMPLE: 21° (300 p.p.m.) hardness, 4 people in family, machine regeneration every 3-4 days or 2 times per week.

- 11a Deciding when to regenerate Micro follow section 11 but refer to the regeneration chart Micro.

12 COMMISSIONING SOFTENER HI-TEC METER

1. Carefully remove the control valve cover by lifting gently under the front edge.
2. Depress and turn black pointer knob 'H' (Fig. 11) on the control, anticlockwise using broad headed screwdriver, to the backwash position. Assist this movement by simultaneously turning the camshaft (Fig. 13, Part 1B) with your other hand.
3. Close the by-pass valve as Fig. 1. Open inlet valve partially by turning. The blue resin vessel should now be heard to fill with water. Air in the resin vessel and valve will be evacuated out of the drain pipe.
4. When water starts running from the drain, open the inlet valve fully and allow to run for three minutes.
5. Turn pointer knob 'H' anticlockwise to a point just before the FAST RINSE REFILL position.
6. Switch on power supply. Check that clock motor can be heard running.
7. Allow motor to run pointer knob anticlockwise to SOFTENED WATER position. Allow approximately 10 minutes. Ensure that brine storage cabinet stops filling (Fig. 1).
8. Fill brine storage tank with salt to a level not exceeding 3 inches (75mm) below the bottom of the salt lid opening. Granular or tablet salt is suitable. The salt will be dissolved and gradually used by the machine. A visual check should be carried out on a 3 to 6 weekly interval (depending on usage). Re-fill as necessary. Always ensure a minimum salt level of 5" (125mm) above the base of cabinet.
9. Fully open outlet valve as Fig. 1. You now have softened water.
10. Set the time of day (see Adjustment of Timer).

13 ADJUSTMENT OF TIMER HI-TEC METER

1. Open the access door 'D' (see Fig. 11).

Important note: The hardness and capacity have been set at the factory. Unless you need to alter the hardness for your area (it is set to 17 GPG or 290 p.p.m.), no further adjustment should be made.

If for any reason you should wish to alter the time or hardness proceed as follows. **NOTE:** The use of a small needle, nose pliers or tweezers will aid in moving the jumper.

2. With the "jumper" on the top 2 pins next to the word "TIME" (Fig. 11/2), set the time-of-day to the closest hour by depressing the black TIME SET BUTTON 'E'.
3. If you need to adjust the hardness, pull the jumper off the top 2 pins and place it on the next set of pins next to the word HARDNESS (Fig. 11/1). Depress the black TIME SET BUTTON 'E' until the correct hardness is displayed. The hardness range is from 1 to 99 grains per gallon.

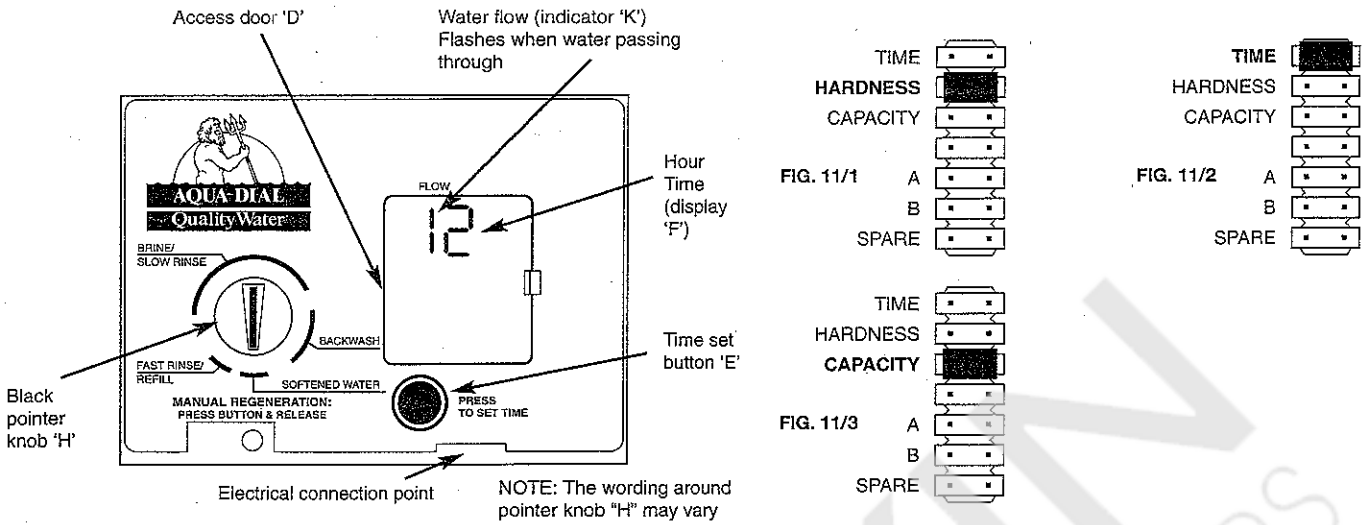
To change the water hardness from parts per million or mg/l to grains per gallon as displayed use this formula:
$$\text{p.p.m.} \div 17.1 = \text{G.P.G.}$$

4. Capacity is pre-set - do not alter.
5. Return the jumper to the top set of pins next to the word "TIME" and close the access door. The bottom 3 sets of pins are used for factory testing and are not used in normal operation. The jumper must NOT be left on any pins other than the top pair next to the word "TIME". Failure to do this will cause the unit not to operate.

In the event that the hardness or capacity setting must be changed, simply follow steps 1 through 6. The new information will be entered when the jumper is returned to the top 2 pins next to the word "TIME".

6. Manual Regeneration. Push in black pointer knob 'H', Fig. 11, until click is heard. This will start a regeneration. It takes approx. 90 minutes to complete a full regeneration.

FIG. 11

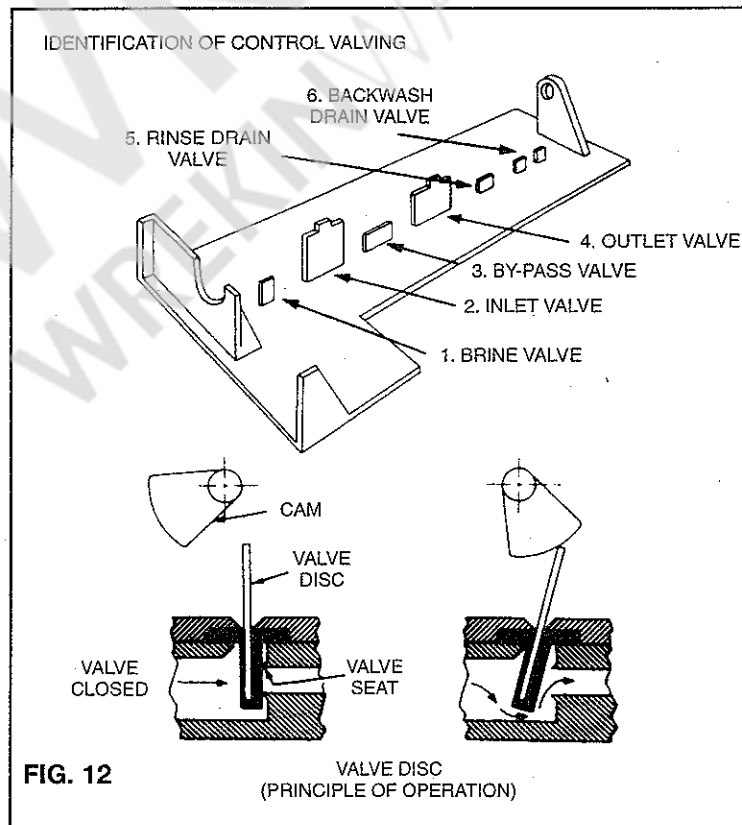


14 POWER FAILURE

In the event of a power failure the hour time display 'F' will be lost and any water used will not be recorded. When power is restored, re-set time of day by depressing "Time set button 'E'".

If a substantial quantity of water has been used during power stoppage include an additional manual regeneration by depressing pointer knob 'H'. Any water used during the regeneration will be replaced with hard water in the plumbing system.

15 VALVE DISC OPERATION



16 USER MAINTENANCE

1. Inspect and clean Brine Tank and Screen Filter on end of brine pick-up tube **once a year**, or when sediment appears in the bottom of the Brine Tank.
2. In areas which suffer high turbidity or sediment in the water supply clean Injector Screen (11B) and Injector (28F) **once a year**, (Fig. 12).
 - a. Unplug electric cord.
 - b. Shut-off water supply or put by-pass valve(s) into by-pass position.
 - c. Relieve tank pressure by opening valve No. 6 (at rear) with a screwdriver or finger pressure (Fig. 13).
 - d. Using screwdriver, unscrew Cap and Screen (11B).
 - e. Remove Cap and Screen (11B).
 - f. Clean Screen using a fine brush. Flush until clean.
 - g. Lubricate O-ring (6F) with silicone lubricant and reassemble.
 - h. Using screwdriver, unscrew Cap (8F).
 - i. Using needlenose pliers, pull Injector (28F) straight out.
 - j. Clean and flush Injector.
 - k. Lubricate all Injector O-rings with silicone lubricant.
 - l. Reinstall Injector and push all the way in small end first. Tighten Cap.
 - m. Plug electric cord into outlet; re-set Timer.
 - n. Open water supply valve or re-turn by-pass valve(s) to soft water position.

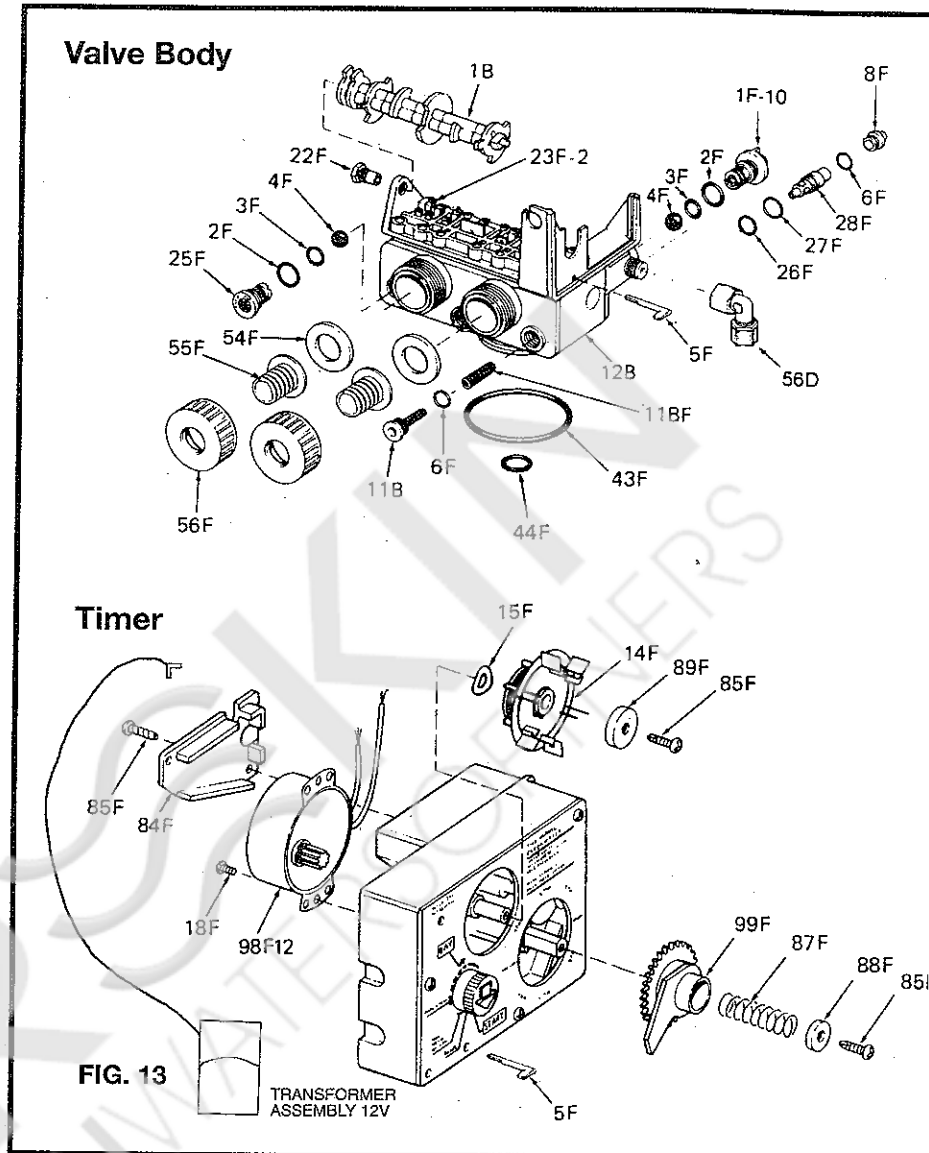


FIG. 13

17 SPARE PARTS EXCLUSIVE TO HI-TEC METER

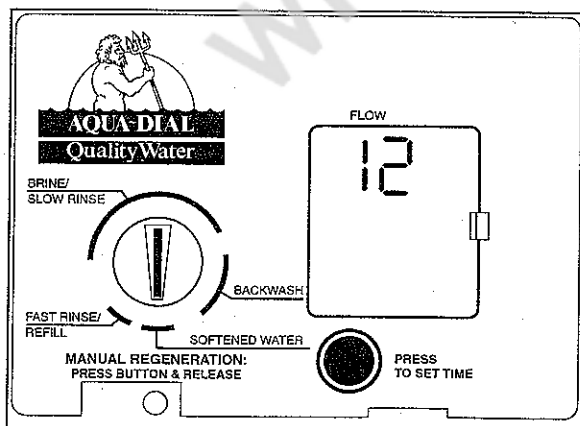


FIG. 14 Due to Modular Design no User Serviceable Parts.
Re-order 460i Timer Complete

THE TURBINE METER

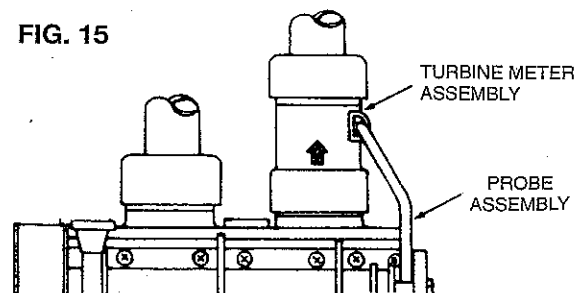


FIG. 15 The Turbine Meter assembly is located on the soft water outlet at the back, side of the control valve.

PARTS LIST

VALVE BODY

Item	Description	No. Required	Item	Description	No. Required
1B	Multi Part Cam Shaft	1	23F-2	Valve Spring	7
1F-10	Brine Control assembly 1-10 Settings	1	12B	Control Body	1
2F	O-Ring	2	25F	Backwash assembly	
3F	O-Ring	2		6" Diameter Mineral Tank	1
4F	Ball	2	26F	O-Ring	1
5F	Timer Locking Pin	1	27F	O-Ring	1
6F	O-Ring	2	28F - G25	Injector	1
11B	Injector Cap & Screen	1	43F	O-Ring	1
11BF	Injector Cap & Screen - Fine	1	44F	O-Ring	1
8F	Injector Cap	1	155A 152	Valve Disc Kit (Not Shown)	1
20M	Cover (Not Shown) - White	1	3B	Nut	1
11B WS	Cam Shaft Assembly - Micro	1	54F	Gasket	2
11B WSXS	Cam Shaft Assembly - Hi-Tec Monosphere	1	55F	Tube Adaptor, 3/4" BSP	2
22F	Cam Shaft Bearing	1	56D	3/8" Brine Elbow Assembly	1

TIMER HI-TEC AND MICRO

Item	Description	No. Required	Item	Description	No. Required
14F-6	Skipper Wheel, 6-Day	1	87F	Compression Spring	1
14F-7	Skipper Wheel, 7-Day	1	88F	Gear Retainer	1
15F	Friction Washer	1	89F	Day Dial Washer	1
18F	Motor Mounting Screw	2	97F 12	Timer Assembly - 440 Timer 12V Motor (Specify 6- or 7-Day, 59 or 90 mins)	1
84F	Cover Plate - Timer	1	98F 12	Motor - 440 12V	1
85F	Screw	3	99F	Tripper Arm	1

TIMER HI-TEC METER

Item	Description	No. Required
Timer	460i Timer complete	1
Turbine Meter	Turbine Meter Assembly	1
Meter Elbow	Turbine Meter Elbow (Not Shown)	1

18 GUARANTEE (UK ONLY)

All Aqua-Dial automatic domestic water softeners are covered by a full one year parts and labour guarantee against faulty materials or workmanship.

Aqua-Dial have full service back-up covering the United Kingdom. For help, advice or service please phone the technical services department.

19 TEN YEAR WARRANTY (UK ONLY)

Aqua-Dial offer a "Peace of Mind" guarantee covering all parts, labour and call-out charges, available for a small yearly premium. Please complete and return the section on the reverse side of the guarantee card.

HELP LINE

If you require any help in using this manual or require further information please contact Aqua-Dial on ~~020 8549 7812~~. Thank you for choosing Aqua-Dial.

01376 334200

20 FAULT FINDING AND SERVICE PROBLEMS HI-TEC AND MICRO

Before contacting your supplier or our service department, always run a complete check on this page. History shows that the major percentage of service call-outs are due to owner misuse. Service visit can very often be avoided by studying the information below or alternatively discussing the problem over the phone. Always check your salt level at a regular (at least monthly) interval and top up as necessary.

The technology upon which the HI-Tec control is based is well established and proven in service over many years. However, should a problem or question arise regarding the operation of the system, the control can be easily serviced.

Problem	Possible Cause	Solution
1. Control will not regenerate automatically	<ul style="list-style-type: none"> a. Electric cord unplugged b. Defective timer motor c. Skipper pins not down on timer skipper wheel (Item 14F) d. Binding in gear train of timer 	<ul style="list-style-type: none"> a. Connect power. b. Replace motor. c. Depress pins for days regeneration required. d. Replace clock.
2. Control regenerates at wrong time of day	<ul style="list-style-type: none"> a. Timer set incorrectly 	<ul style="list-style-type: none"> a. Make correct setting according to instructions.
3. Control will not draw brine	<ul style="list-style-type: none"> a. Restricted drain line b. Injector plugged c. Injector defective d. Valve disc 2 or 4 not closed 	<ul style="list-style-type: none"> a. Change drain to remove restriction. b. Remove injector and flush it and injector screen (Items 11B and 28F). c. Replace both injector and injector cap (Items 28F and 8F). d. Flush out foreign matter by manually operating valve stem.
4. Intermittent or irregular brine draw	<ul style="list-style-type: none"> a. Defective injector 	<ul style="list-style-type: none"> a. Replace both injector and injector cap (Items 28F and 8F).
5. No soft water after regeneration	<ul style="list-style-type: none"> a. Unit did not regenerate b. No salt in brine tank c. Plugged injector 	<ul style="list-style-type: none"> a. See 1a. b. Add salt to brine tank. c. Remove injector and flush it and injector screen (Items 28F and 11B).
6. Control backwashes at excessively low or high rate	<ul style="list-style-type: none"> a. Incorrect backwash controller used (Item 25F) b. Foreign matter affecting controller operation c. Valve disc 1 held open 	<ul style="list-style-type: none"> a. Replace with correct size controller. b. Remove controller and clean it and ball. c. Flush out foreign matter by manually operating valve system.
7. Flowing or dripping water at drain or brine after regeneration	<ul style="list-style-type: none"> a. Drain valve (5 or 6) or brine valve (1) held open by foreign matter or particle b. Valve stem return spring on top plate (Item 23F) weak 	<ul style="list-style-type: none"> a. Manually operate valve stem to flush away obstruction. b. Replace spring.
8. Hard water leakage during service	<ul style="list-style-type: none"> a. Improper regeneration b. O-Seal around riser tube damaged 	<ul style="list-style-type: none"> a. Repeat regeneration making certain correct salt dosage used. b. Replace O-Ring (Item 44F).
9. Brine tank overflow	<ul style="list-style-type: none"> a. Brine valve disc 1 being held open b. Uncontrolled brine refill flow rate c. Valve disc 2 or 4 not closed during brine draw causing brine refill d. Air leak in brine line to air check e. Salt overflow f. No brine draw (see problem 3) 	<ul style="list-style-type: none"> a. Manually operate valve stem to flush. b. Remove variable salt controller to clean it and ball (Items 1F and 4F). c. Flush out foreign matter holding disc open by manually operating valve stem. d. Check all connections in brine line for leaks. Refer to instructions.
10. System using more or less salt than salt control (Item 1F) is set for	<ul style="list-style-type: none"> a. Inaccurate setting b. Foreign matter in controller causing incorrect flow rates c. Defective controller 	<ul style="list-style-type: none"> a. Make correct setting. b. Remove variable salt controller and flush out foreign matter (Items 1F and 4F). Manually position control to brine draw to clean controller (after so doing position control to "purge" to remove brine from tank). c. Replace defective part.

21 FAULT FINDING AND SERVICE PROBLEMS HI-TEC METER

Additional information to section 20.

Problem	Possible Cause	Solution
1. Clock does not display time of day	<ul style="list-style-type: none"> a. Electric cord unplugged b. No electric power at outlet c. Defective transformer d. Defective circuit board 	<ul style="list-style-type: none"> a. Connect power. b. Repair outlet or use working outlet. c. Replace transformer. d. Replace timer.
2. Clock does not display correct time of day	<ul style="list-style-type: none"> a. Outlet operated by switch b. Incorrect voltage or frequency (Hz) c. Power outages 	<ul style="list-style-type: none"> a. Use outlet not controlled by switch. b. Replace timer with one of correct voltage and frequency (Hertz). c. Reset clock.
3. Time display continues to advance	<ul style="list-style-type: none"> a. Defective time set switch 	<ul style="list-style-type: none"> a. Replace timer.
4. Time display shows something other than time of day	<ul style="list-style-type: none"> a. Electrical interference b. Defective circuit board 	<ul style="list-style-type: none"> a. Disconnect power to unit. Restore power and reset time of day display. b. Replace timer.
5. No water flow display when water is flowing or no soft water	<ul style="list-style-type: none"> a. Bypass valve open b. Meter probe disconnected or not fully connected to meter housing c. Restricted meter turbine rotation due to foreign material in meter housing d. Defective meter probe e. Defective circuit board 	<ul style="list-style-type: none"> a. Shift bypass valve into service (closed) position. b. Fully insert probe into meter housing. c. Remove meter housing, free up turbine and flush with clean water. (Do not disassemble turbine from meter housing.) Turbine should spin freely. If not, replace meter. d. Replace timer. e. Replace timer.
6. Control regenerates at wrong time of day	<ul style="list-style-type: none"> a. Power outages b. Clock set incorrectly 	<ul style="list-style-type: none"> a. Reset clock to correct time of day. b. Reset clock to correct time of day.

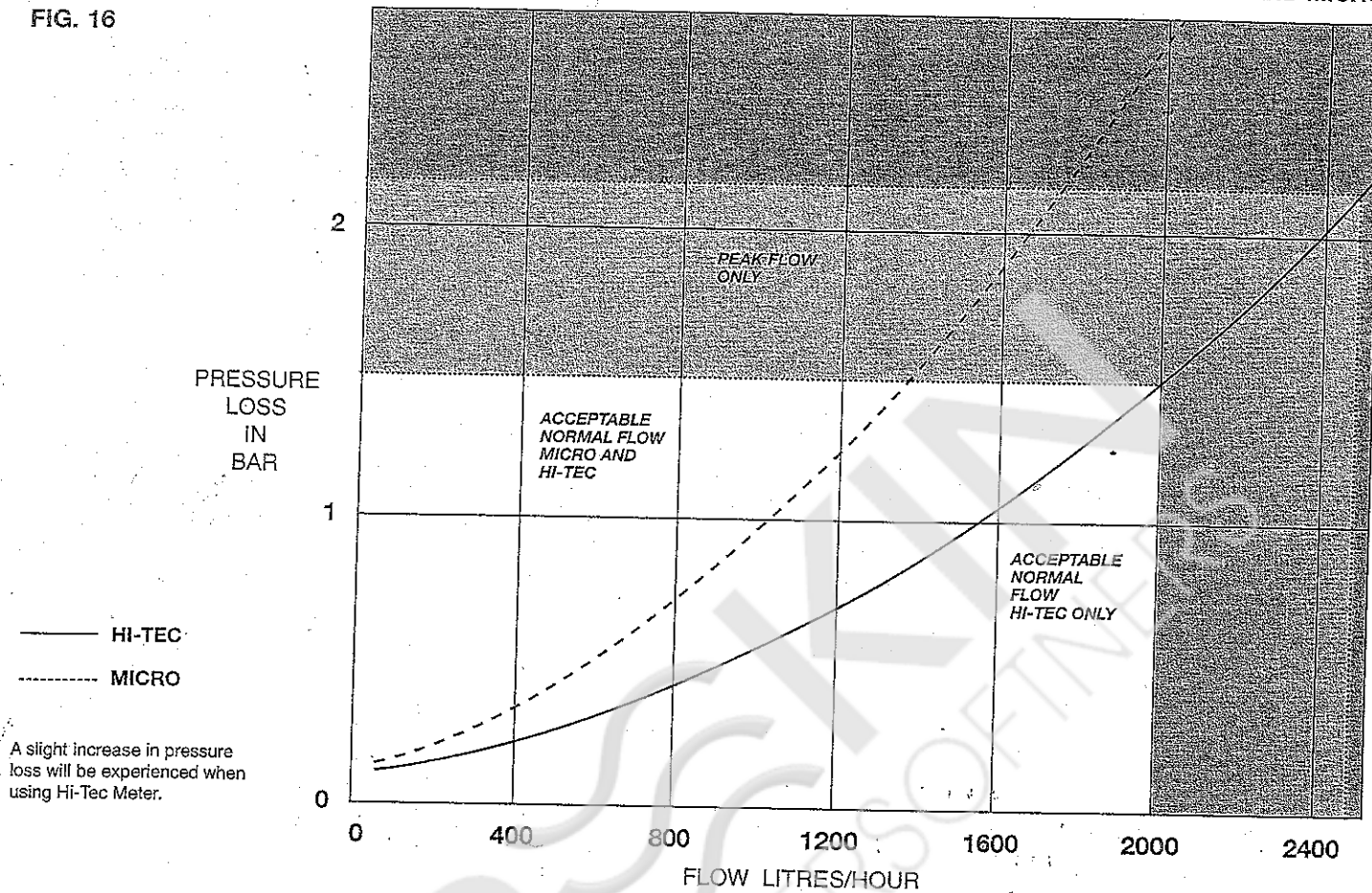
NOTES

1. For manual regeneration see "Adjustment of timer" section 10 or 13.
2. For minimum and maximum salt levels see page 6, section 12 paragraph 8.
3. Regeneration takes place at 2am on Hi-Tec Meter and 3am on Hi-Tec and Micro and lasts up to 90 minutes.

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FIG. 16



22 SALT

Salt is essential to make the water softener work. It is dissolved in water to make a concentrated brine solution, which is washed over the resin to recharge it. The salt never enters the household water.

You should use only granular or tablet salt specially made for water softeners. Product quality does vary from one manufacturer to another, with some products containing damaging impurities or being liable to fall apart (mush). That is why we recommend Care Crystals or Care Cubes, which are made to the highest quality standards and come in 25kg bags and are usually available from the company that supplied your water softener.

For filling instructions see Paragraph 8, Section 12, Page 6.

Softened water has a higher sodium content than mains water and the Department of Health currently recommend that it should not be used for drinking and cooking. In fact the level of sodium in softened water is typically less than one quarter of that in milk. After installation of your water softener you will still have an unsoftened mains tap. It is particularly important that this unsoftened water is used for mixing powdered milk for babies, as the powdered milk will already contain the correct level of sodium.

Serial No.

Model Hi-Tec Hi-Tec Meter Micro

Date Installed

Regeneration Set Every Days

Purchased From

AQUA-DIAL

Culligan International (UK) Ltd
Suite 3, Unit F
Warners Mill, Silks Way
Braintree, Essex CM7 3GB
Tel: 01376 334200 / Fax: 01376 334201



As part of the Aqua-Dial policy of continuous improvement all specifications are subject to change without prior notice.

PLEASE RETAIN THIS MANUAL