Operator's Manual

for the UK and Ireland

Model 75876

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Supplier Contact:

Product Stewardship
MAKING THE WORLD A BETTER PLACE

Arch is committed to maintaining and improving our leadership in Product Stewardship. One of the six initiatives outlined under the Chemical Manufacturers Association (CMA) Responsible Care® Program, its purpose is to make health, safety, and environmental protection an integral part of a product's life cycle – from manufacture, marketing, and distribution to use, recycling, and disposal.

Successful implementation is therefore, a shared responsibility. Everyone involved with the product has responsibilities to address society's interest in a healthy environment and in products that can be used safely. We are each responsible for providing a safe workplace, and all who use and handle products must follow safe and environmentally sound practices.

For more information about our Product Stewardship Program, contact your Arch Representative.

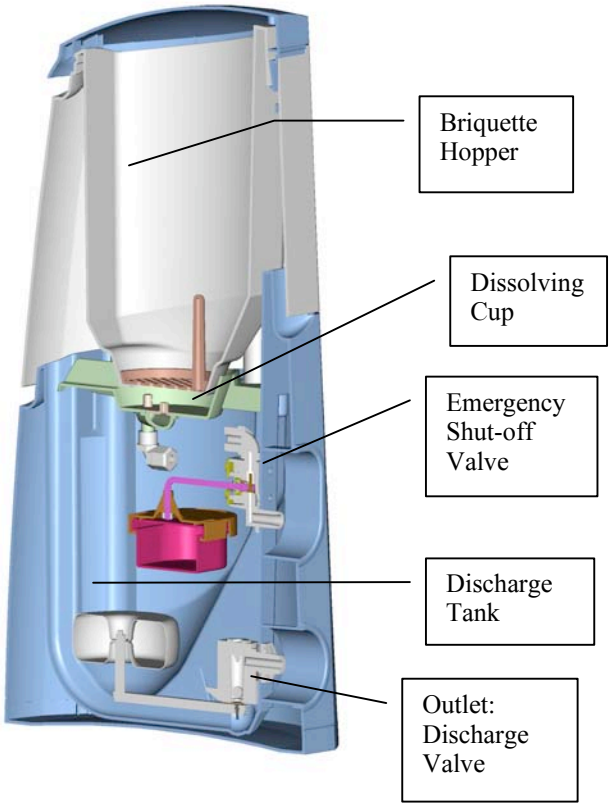
THE MAJOR COMPONENTS - HOW THEY WORK

General Principles of Operation

The three main components of the Easiflo® 1 Chlorinator are (from top to bottom) the briquette Hopper, the Dissolving Cup section and the Discharge Tank. The water from the pool enters the Easiflo® 1 Chlorinator via the emergency shutoff valve. The water then enters the base of the Dissolving Cup where it splits to feed the nozzles for generating the wave to penetrate into the Briquette bed and the solids removal system. The chlorinated solution is directed by a single outlet spout to a channel that directs the solids and chlorinated solution into the discharge tank where it is discharged into the pool recirculation system. The amount of chlorine discharged is determined by the flow rate into the chlorinator. An ORP controller can be used to regulate chlorinator output by installing a solenoid on the inlet flow line.

An inlet water pressure of 2 to 20 psi (0.13 – 1.3 bar) will provide sufficient flow into the Easiflo® 1. These pressures will result in an inlet flow rate of 0.75lt/min - 4 lt/min. The Easilfo® 1 feed rate settings referred to in the Easiflo System Owners manual are calibrated for these flow rates.

Flow out of the Easiflo® 1 feeder requires vacuum to properly evacuate the discharge tank. A minimum outlet flow-rate of 4 litres per minute ensures that the outlet flow of the Easiflo® 1 exceeds the flow in. Once the Easiflo® 1 has been installed the outlet flow is measured by watching the level in the Discharge Tank. If the water level is rising as the feeder is running, the outlet flow out is insufficient.



SPECIFICATIONS – Model 75876					
Operational Requirements		Dimensions:		Feed Rate	
Inlet pressure (Range)	2-20 psi	Tubing	1/2" O.D. Polyethylene	Easiflo Briquettes	0.22 – 12.7kg of Available Chlorine per day
Ideal Inlet Pressure	12 psi	Chlorinator dimensions	W13"xD15""		
Outlet vacuum	3-29" Hg.	Chlorinator height	31"		
Operating Temperature	4 - 55ºC	Chlorinator weight (full)	19kg		
Operational Characteristics		Chlorinator weight (empty)	7.7kg		
Inlet flow (gpm)	0.75lt – 4lt min	Hopper Capacity	12.7kg Easiflo® Briquettes		
Outlet flow (Min)	0.92lt/min				

PRE-START-UP CHECKLIST

Following the procedure outlined below will ensure a smooth start-up of the Easiflo 1 Chlorinator. For seasonal operation, perform this procedure each spring.

IMPORTANT!!

Do NOT put Easiflo® Briquettes in the chlorinator during the start-up operation.

INLET WATER FLOW

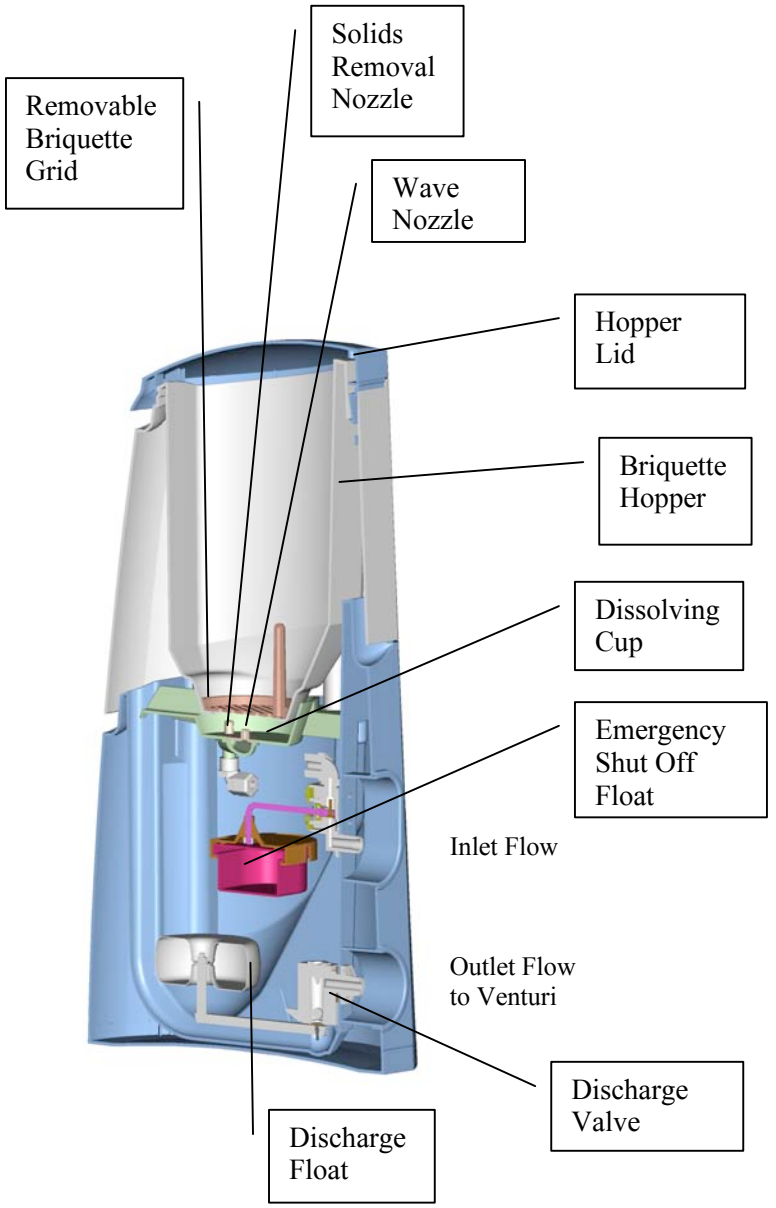
The inlet water flow system is designed to provide a steady side-stream of clean filtered pool water to the chlorinator.

1. Switch on the pool recirculation system, and open all valves to the chlorinator. Leave lid closed.
2. Adjust Inlet flow on flow indicator to 1.5lt/min. Wait 10 seconds and open lid slowly.
3. Check to see that the wave nozzle is making a wave that rises into the Briquette grid. Remove the grid to see if water is flowing from the Solids Removal Nozzle.
4. Check all lines leading to the Chlorinator for leaks. Hand tighten all fittings if any leaks are found.

OUTLET WATER FLOW

The float on the Discharge Valve rises with the water level and allows the venturi suction to draw the chlorinated water into the pool recirculation system as the Discharge Tank fills with water. When the water level drops, the float falls, shutting off the valve. The Discharge Valve also contains a check valve to prevent pool water from backing up into the Discharge Tank. Use the following procedure to ensure that the outlet water flow system is operating properly.

1. With the briquette hopper and dissolving cup of the chlorinator temporarily out of the way, fill the Discharge Tank with sufficient water to open the Discharge Valve – use a hose or pail.
2. The float should rise, opening the Discharge Valve, allowing water to be drawn out by the Easiflo® venturi system.
3. Check the system for leaks. If small air bubbles are visibly moving, there may be an air leak. Tighten the connectors and make sure that the tubing was properly installed in the fittings. (NOTE: Air bubbles near the Easiflo® 1 Chlorinator body that do not move are normal and do not indicate leaks.)
4. Check for air leaks after the Discharge Valve closes.



START-UP PROCEDURES

After completing the PRE-START-UP CHECKLIST, and establishing that all components of the chlorinator are operating properly, your Easiflo® 1 Chlorinator is ready for start-up.

Routine maintenance of the Easiflo® 1 Chlorinator is minimized when proper pool water balance is maintained. Maintain pool water chemistry as follows:

Total Alkalinity	60-80ppm
Calcium Hardness	200-1800ppm
pH	7.2-7.6

Adherence to these recommendations at all times will ensure the most effective and economical performance from the Easiflo® 1 Chlorinator.

NOTE: The use of CO_2 to lower pH will raise Total Alkalinity. High total alkalinity (over 80 ppm) will increase scale and solids buildup in chlorinator.

WARNING
Use **ONLY** Easiflo® Briquettes in the Chlorinator. The use of any other treatment chemicals will void the warranty. **DANGER:** Under no circumstances mix calcium hypochlorite with other forms of concentrated chlorine or other chemicals. Fire and/or explosion may result. Caution must be used when refilling dispenser.

KEEP OUT OF REACH OF CHILDREN

1. Fill the Briquette Hopper with Easiflo® Briquettes. The Briquette Hopper holds 12.7kg of briquettes.

2. Open all valves to the pool and the outlet ball valve of the chlorinator.

3. Check the chart below to determine an approximate start-up Inlet Flow setting for your pool (or be certain that the Auto Controller is calibrated and the set-points are correct). Set the Flow Indicator at the recommended setting using the inlet ball valve. Note: For best chlorinator performance with an ORP controller, set the flow indicator for a pool 30% larger than the one at your facility. This will assist in maintaining desired Free Available chlorine level in pool without overshooting ORP set point.

4. Monitor the water flow to the chlorinator daily to ensure that a proper flow is being maintained.

5. During the first few days of operation, check chlorine level in the pool frequently to establish the best Inlet Flow setting (or Auto Controller setting) for your pool. Adjust the chlorine output either up or down according to the table, or adjust the chlorine setpoint.

Output Rate and Start-up Settings for Commercial Pools and Spas Vs. Inlet Flow Rates

Inlet Flow Rate lt / min	Av Cl kg / day	Indoor or stabilised pool (M3)	Outdoor pool unstabilised (M3)
0.75	0.22	19	4.7
0.95	0.72	60	15
1.14	1.00	83	21
1.33	1.50	125	30
1.5	2.00	170	42
1.7	2.50	208	52
1.9	3.10	265	83
2.08	3.40	290	102
2.27	3.80	320	117
2.46	4.00	350	125
2.65	4.40	380	133
2.83	4.70	410	148
3.02	5.20	450	161
3.21	6.00	500	180
3.4	6.50	540	199
3.6	6.80	575	217
3.8	7.00	600	236

EASIFLO 1 CHLORINATOR INSPECTION AND MAINTENANCE

Calcium Hypochlorite by the nature of its manufacture contains a small amount of calcium carbonate. Proper water balance will minimize the buildup of calcium carbonate solids in the EASIFLO 1 Chlorinator, however, periodic cleaning of chlorinator components is normal and recommended. The following is a list of the parts to be cleaned and the proper procedures to do so.

TABLE OF CONTENTS

SECTION A

Cleaning EASIFLO 1 Chlorinator with Hydrochloric Acid

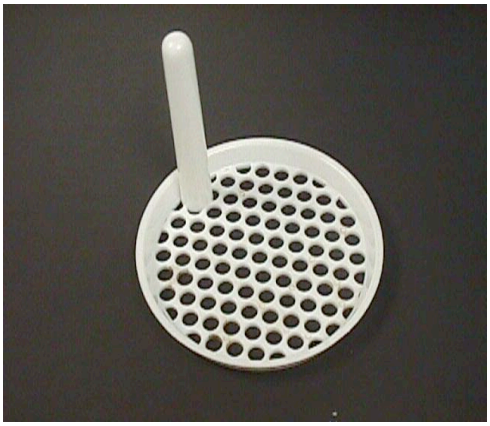
Perform cleaning operation in a well ventilated area. Chlorine gas may evolve causing serious injury or possible death. Use proper protective equipment per MSDS when handling chemicals. Use caution when handling feeder parts and solution as they contain chlorine that can bleach clothing or cause injury

Inspection: The solids build-up and cleaning frequency required for the unit will depend on the amount of tablets used and the pool water chemistry. Described below is the easiest way to remove solids and minor scale buildup using dilute Hydrochloric Acid.

Maintenance Procedure Steps:

1. **Note the inlet flow setting.** Close the inlet and outlet shutoff valves to the chlorinator.
2. Lift the Briquette Hopper away from the Discharge Tank and pour the contents into a clean dry bucket. Be sure to remove all pieces of briquettes. If necessary, rinse any heavy solids buildup from the hopper before proceeding.
3. Lift out dissolving cup, pour contents into a bucket and rinse out solids.
4. Remove briquette grid and place in cup (provided with system). Fill with 0.25 litres of water. Slowly pour 0.25 litres of prepared 10 parts water to 1 part acid into cup. Pour 5 litres of water and $^{1}/_{2}$ litre of acid solution into discharge tank. Frequent agitation may be required to dissolve solids and scale. Allow acid to dissolve solids and scale, evident by the foaming action. After 10 to 20 minutes, check for presence of scale on grid. If necessary, add additional acid solution to dissolve any remaining scale or scrape with putty knife.
5. Replace the Dissolving Cup in Base.
6. Pour the contents from the cup with grid into dissolving cup and allow 10 minutes for scale to dissolve.
7. Put the hopper back on the base and the Briquette grid back into the bottom of the hopper. Rinse the Briquette grid thoroughly with water.
8. Pour Easiflo® Briquettes from bucket back into Briquette Tank.
9. Open inlet and outlet shut off valves to the chlorinator. **Adjust inlet flow to desired setting.**
10. Dispose of chlorinated solution from step 2 either into pool or skimmer.

NOTE: To increase the period between cleanings, allow briquette hopper to completely empty once per week.



SECTION B

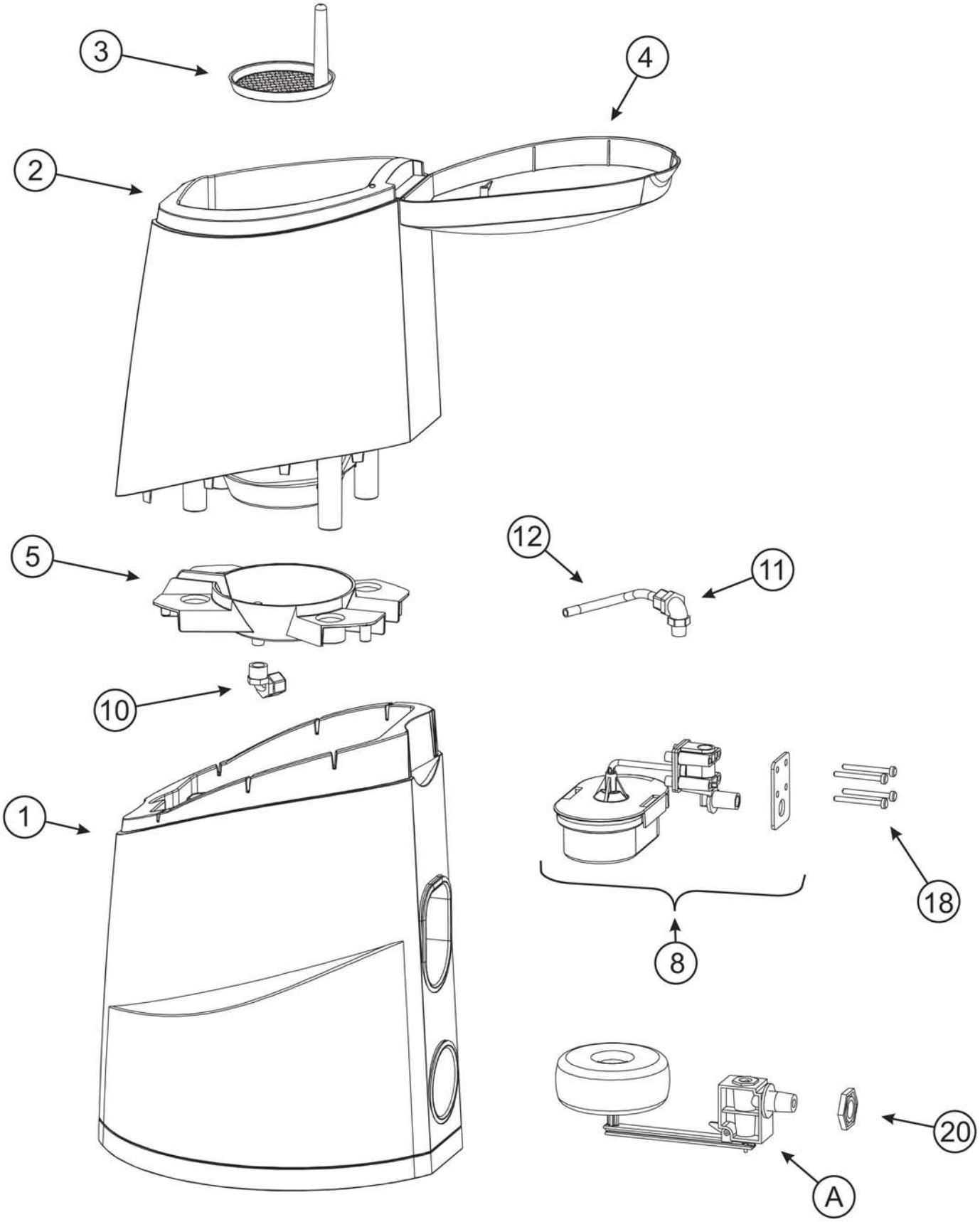
TROUBLESHOOTER'S GUIDE

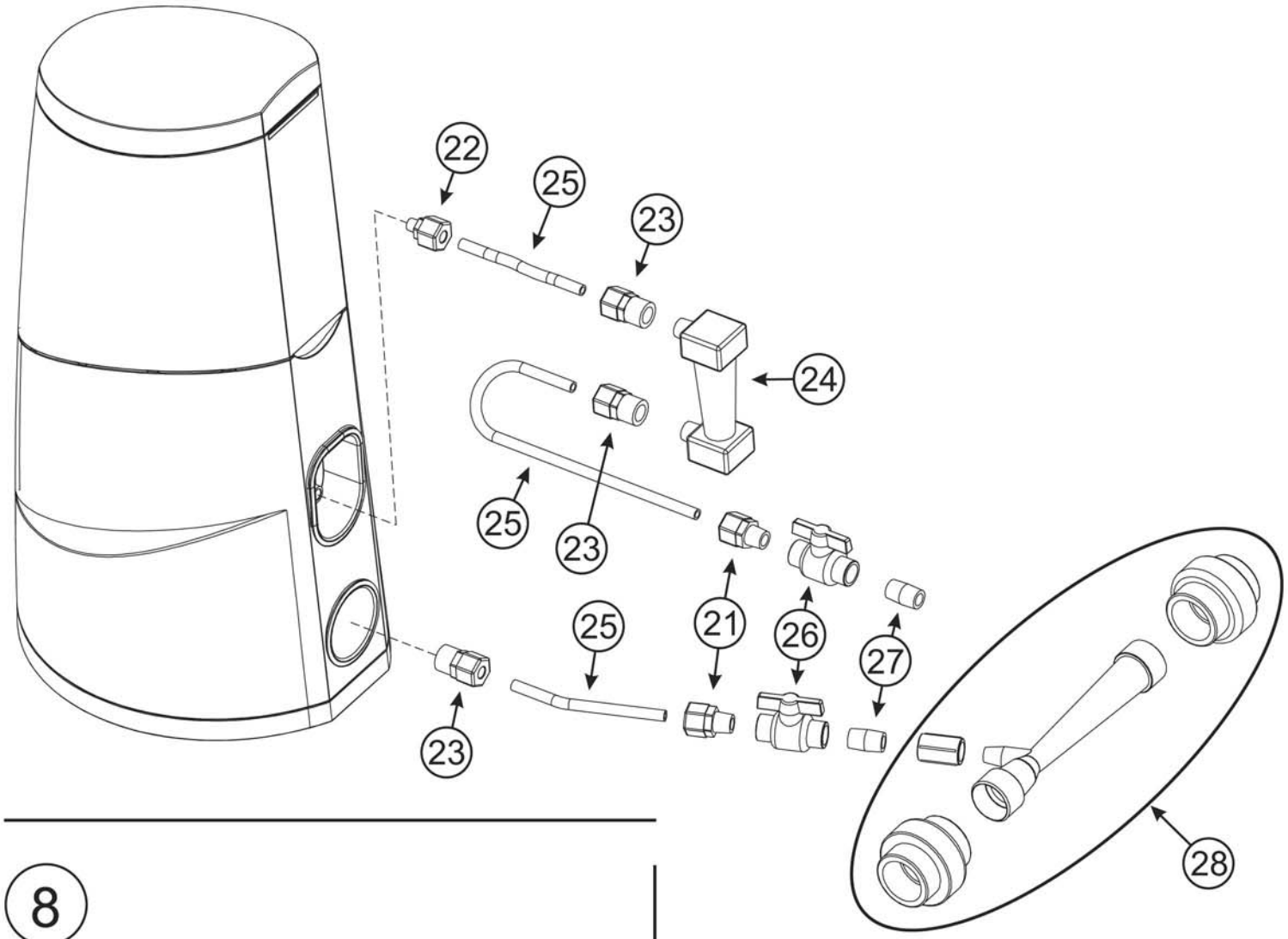
PROBLEM	CAUSE	SOLUTION
Insufficient water flow to chlorinator	Check water flow through nozzles. If there is scale build-up perform de-scale operation	Rinse out dissolving cup, soak in a 2 parts water to 1 part hydrochloric acid and allow scale to dissolve.
	Inlet Shutoff Valve closed	Open Inlet Shutoff Valve
	Emergency Shut Off Valve in closed position	If ESV Valve is stuck, lower gently to reset
	Solenoid Valve not operating (auto control system only)	Check with Dealer
Insufficient chlorine in pool	Feed rate/output too low	Increase feed rate by increasing inlet flow.
	Chlorinator empty	Refill Briquette Hopper with Easiflo® Briquettes
	No inlet water flow	See insufficient water flow section
	Outlet/Shutoff Valve closed	Open Outlet Shutoff Valve
	Clogged Discharge Tubing	Refer to Section A or Replace discharge tubing
	Briquettes stuck together	Tap side of Briquette Tank to loosen
	Clogged Briquette Tank Grid	Refer to Section A
	Clogged Venturi System	Remove venturi – soak in tub with mixture of 10 parts water and 1 part hydrochloric acid solution.
	Closed valves in venturi system	Open venturi system valves
Excess chlorine in pool	Automatic Controller Problem	Refer to automatic controller manual
	Feed rate/output too high	Decrease feed rate by reducing inlet flow
Air leaks	Discharge Tubing not properly installed in fittings	Reinstall Discharge Tubing
	Discharge Valve seat failure	Replace Discharge Valve Arm.
	Scale prevents Discharge Valve from properly seating	Remove Discharge Valve Assembly and soak in solution of 2 parts water to 1 part hydrochloric acid to remove scale
	Pinched O-rings in Tubing Connectors	Inspect O-rings on discharge side of feeder
Chlorinator overflow	Discharge Tubing clogged	Refer to Section A or Replace Discharge tubing.
	Clogged venturi system	See clogged venturi system solution
	Insufficient outlet suction	Check with Dealer
	Emergency shutoff valve failure	Check with Dealer

WARRANTY POLICY

The Easiflo Chlorine Feeder comes with a 12 month warranty from the date of installation. In order for the warranty to be validated the Warranty Registration Document W2 must be completed and returned to Arch Water Products, Wheldon Road, Castleford WF10 2JT

Feeder Detailed View





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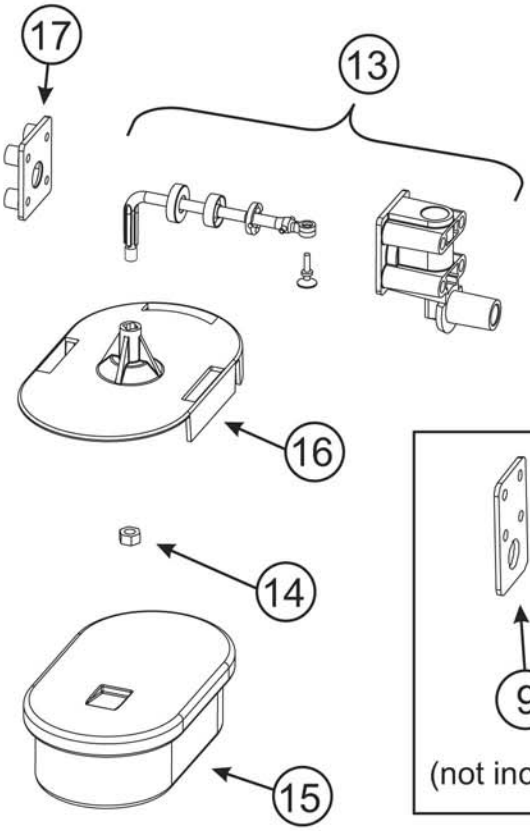

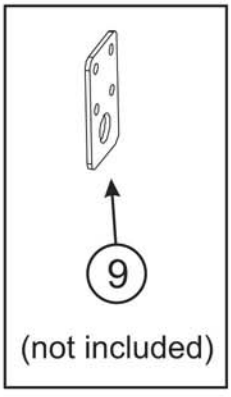

No.29 Cleaning Pan not shown

A

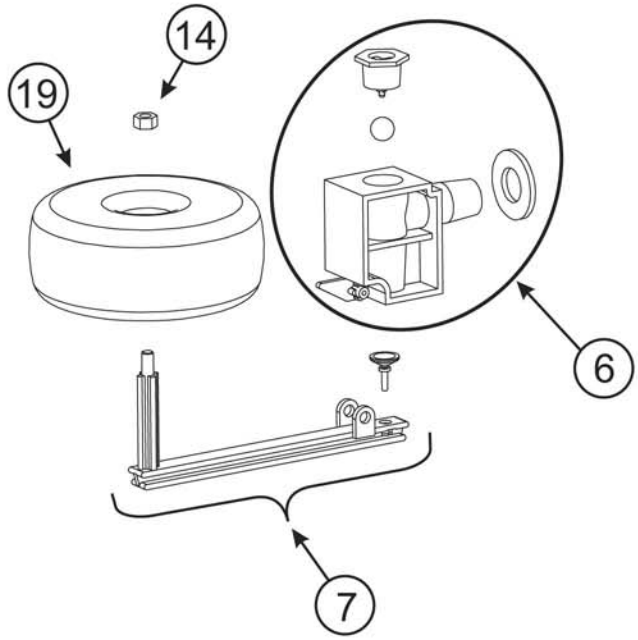

Diagram Number	Part Number	Qty	Description
0	75876	1	Easiflo 1 Feeder
1	74066	1	E1 Base
2	74065	1	E1 Hopper
3	74068	2	E1 Grid
4	75872	1	E1 Lid
5	74062	1	E1 Dissolving Cup with Nozzles Assembly
6	71615	1	Discharge Valve Body with Plug, Ball & Gasket
7	71584	1	Discharge Valve Arm with Suction Cup
8	71496	1	Emergency Shut Off Valve Assembly - Part 71910 Not Included
9	71910	1	Rubber Gasket for Emergency Shut Off Valve
10	74059	1	Parker Fitting W6FE4
11	71619	1	Elbow (W6ME6) 3/8" For Feeders 30991 & P3, P1
12	71618	1	3/8" PE Tubing (2 ft)
13	71535	1	Emergency Shut Off Valve with Arm Only
14	71538	2	Emergency Shut Off Float Plate PVC Nut/Discharge Arm Nut
15	71540	1	Emergency Shut Off Overflow Float
16	71539	1	Emergency Shut Off Float Plate
17	71536	1	Emergency Shut Off Mounting Plate
18	71537	1	Emergency Shut Off Mounting PVC Screws(1/4x20x2 1/4)
19	71585	1	Discharge Valve Float
20	71583	1	Discharge Valve Locknut
21	71890	2	Parker Fitting, W8MC8 (also for solenoid)
22	71614	1	Tube Connector (P8MC4) for P3
23	71588	3	(5008) 1/2" X 1/2" Female Connector (P8FC8)
24	74060	1	Flow Indicator - P1
25	71626	1	20' 1/2" O.D. PE Tubing(P4 only need 3 inch piece)
26	74061	2	1/2" FNPT x 1/2" FNPT PVC Ball Valve
27	71611	2	1/2" X close PVC Nipple
28	71974	1	ORP/Below Grade Installation Kit for Small Feeder
29	74145	1	E1 Cleaning Pan

ISSUE 1 SPRING 2003

EMERGENCY RESPONSE PROCEDURE FOR ARCH WATER PRODUCTS CUSTOMERS

1 In the event of a Health Safety or Environmental Emergency involving Arch Water products.

This includes
- Injury to persons requiring medical treatment
- Loss of containment of product to the environment
- Involvement of the Emergency Services (Police, Fire, Medical)
- Involvement of the Environmental agencies
- Major damage to property

FIRST TELEPHONE + 44 (0)1865 407333

This will connect you with the NCEC (National Chemical Emergency Centre) who support the Arch Emergency Response. *(It operates 24 hours a day, 365 days a year).*

THEN Phone your local Arch Water Products Office *(during office hours)*

2 NCEC will provide initial assistance and advice *(in English)*.

3 NCEC will also contact Arch Water Products Head Office.

4 When calling the Emergency No. have the following information available *(use your Emergency Response Procedure Checklist)*:
- Your name
- Your job title
- Your company name and location
- The Telephone (and fax) number that you can be contacted on
- The Product Name
- The Product Code
- The nature of the emergency
- The action you have taken
- Are the emergency services involved?
- Are the environmental agencies involved?

***PLEASE* ALWAYS CONTACT NCEC IN THE EVENT OF A HEALTH, SAFETY OR ENVIRONMENTAL EMERGENCY INVOLVING ARCH WATER PRODUCTS**
BUT
***PLEASE* ONLY USE THIS NUMBER FOR HEALTH, SAFETY AND ENVIRONMENTAL EMERGENCIES (as defined above).**