Operator's Manual

for the UK and Ireland

Model 71945

Arch Chemicals Ltd
Wheldon Road, Castleford
West Yorkshire, WF10 2JT

1/10/03

Rev. 7

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

The timer issued with the feeder can be used as a means of controlling the chlorine output from the feeder in the absence of an auto controller. If an auto control is present the timer can still be used in conjunction with it to fine tune chlorine output.

Pounds of Available Chlorine per Day							
Upper Timer Knob Setting	**A**	**B**	**C**	**D**	**E**	**F**	**G**
"Normal" Bottom Knob Setting	25	6	1.5	0.8	0.6	0.5	0.4
"Low" Bottom Knob Setting	40	11	3	1.6	1.1	1.0	0.8
"High" Bottom Knob Setting	55	14	3.4	1.9	1.4	1.1	1.0

General Principles of Operation

The three main components of the Easiflo® 3 Chlorinator are (from top to bottom) the Tablet hopper, the manifold spray section and the discharge tank. The water from the pool enters the Easiflo® 3 Chlorinator via the emergency shutoff valve. The water then splits to feed the spray manifold and the solids removal system. The spray manifold then distributes the water onto the tablet bed creating a chlorinated solution. The chlorinated solution falls into the discharge tank and is discharged into the pool recirculation system. The amount of chlorine discharged is determined by the ORP controller or the Arch Timer Solenoid Assembly.

Inlet water pressure of 17 to 45 psi is required to provide sufficient flow into the Easiflo® 3. These pressures will result in an inlet flow of 6 litres per minute. The Easiflo® 3 feed rate settings referred to in the Easiflo® System Owners manual are calibrated for this flow rate.

Flow out of the Easiflo® 3 Chlorinator requires vacuum to properly evacuate the discharge tank. A minimum outlet flow-rate of 6.4 litres per minute ensures that the flow out of the Easiflo® 3 exceeds the flow in. Once the Easiflo® 3 has been installed the outlet flow can be measured by watching the level in the bottom tank.

If the level is rising as the feeder is running, there is insufficient flow out.

SPECIFICATIONS – Model 71945					
Operational Requirements		Dimensions:		Feed Rate	
Inlet pressure (Range)	17-45 psi	Tubing	1/2" O.D. Polyethylene	Easiflo® Tablets	0.5 – 54kg of Available Chlorine per day
Ideal Inlet Pressure	30 psi	Chlorinator diameter	19"		
Outlet vacuum	5-29" Hg.	Chlorinator height	33"		
Operating Temperature	4 - 55ºC	Chlorinator weight (full)	57 kg		
Operational Characteristics		Chlorinator weight (empty)	12.5 kg		
Inlet flow (gpm)	6.0lts/ min	Hopper Capacity	28kg Easiflo®® Tablets		
Outlet flow (Min)	6.4lts/min				

PRE-START-UP CHECKLIST

Following the procedure outlined below will ensure a smooth start-up of the Easiflo® 3 Chlorinator. For seasonal operation, perform this procedure each spring.

IMPORTANT!!

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

INLET WATER FLOW

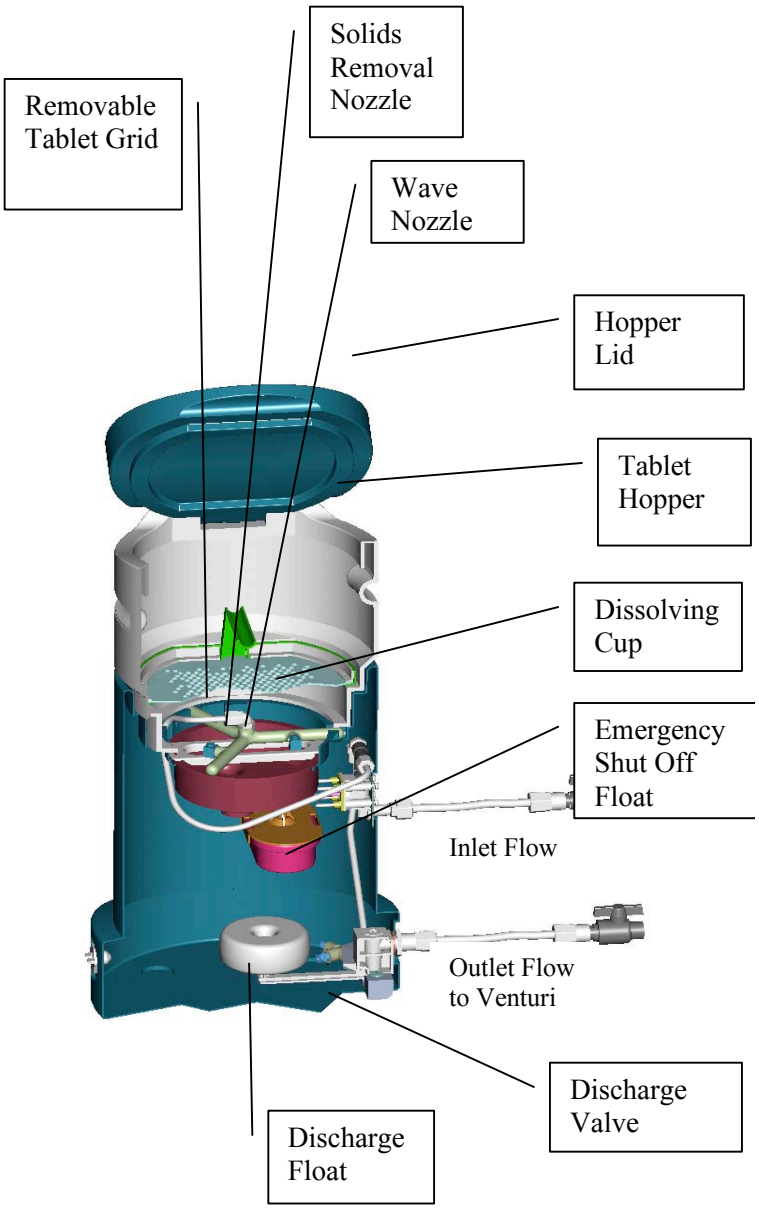
The inlet water flow system is designed to provide a steady side-stream of clean filtered pool water to the chlorinator.

1. Switch on the pool recirculation system, and open all valves to the chlorinator.
2. Check the flow indicator (if present) of the Easiflo® system to see that water is flowing into the chlorinator.
3. Check to see that the three nozzles are spraying water onto the tablet grid and water is flowing from solids removal manifold.
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 pump suction to draw the chlorinated water into the pool's 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 tablet hopper and deflection plate 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® evacuation system (or venturi on 2" or less piping).
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® 3 Chlorinator body that do not move are normal and do not indicate leaks.)
4. Check to see that water is flowing through both nozzles of the solids removal system.
5. 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® 3 Chlorinator is ready for start-up.

Routine maintenance of the EASIFLO® 3 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® 3 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 build-up in chlorinator.

WARNING
Use **ONLY** Easiflo® tablets 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

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1. Fill the tablet hopper with Easiflo® tablets. The tablet hopper holds 28 kgs of tablets.

2. Check the chart below to determine an approximate start-up timer setting for your pool (or be certain that the auto controller is calibrated and the set-points are correct). If using the timer only set the Upper and Lower Timer Knobs at the recommended setting. Note: For best chlorinator performance, use the “normal” bottom timer setting. This will assist in maintaining desired Free Available chlorine level in pool and help maintain chlorinator maintenance.

3. Open all valves to the pool and to the chlorinator.

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 timer setting (or auto controller setting) for your pool. Adjust the chlorine output either up or down according to the table or, adjust the free chlorine set-point on the auto controller.

RECOMMENDED START-UP SETTINGS

Upper Timer Setting	Pool Size in Cubic Metres					
	High Bottom Timer Setting		Low Bottom Timer Setting		Normal Bottom Timer Setting	
	Unstabilised	Stabilised*	Unstabilised	Stabilised*	Unstabilised	Stabilised*
A	1800	900	300	600	200	400
B	325	166	55	110	100	200
C	113	55	33	65	50	100
D	68	35	22	43	--	--
E	45	--	--	--	--	--
F	--	--	--	--	--	--
G	--	--	--	--	--	--

***Do not exceed 25-ppm stabiliser

EASIFLO® 3 CHLORINATOR INSPECTION AND MAINTENANCE

Calcium Hypochlorite by its nature contains a small amount of calcium carbonate. Proper water balance will minimise the build-up of calcium carbonate solids in the Easiflo® 3 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. The operation of cleaning should be carried out in a well ventilated area wearing the appropriate personal protective wear. A risk assessment should be carried out and only trained personnel should be employed to do this.

TABLE OF CONTENTS

SECTION A
Cleaning Easiflo® 3 Chlorinator with dilute hydrochloric acid

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 build-up using a solution of hydrochloric acid and water.

WARNING
Use appropriate personal protective wear and carry out the procedure in a well ventilated area. A risk assessment should be carried out on the procedure.

Maintenance Procedure Steps:

1. Close the inlet and outlet shutoff valves to the chlorinator.

2. Lift the tablet hopper off of the spray manifold section and discharge tank and pour the contents into a clean dry bucket. Be sure to remove all pieces of tablets. If necessary, rinse any solids build-up from the tank before proceeding.

3. Remove tablet grid and place in black bowl (provided with system). Fill with 4.5 litres of water. Slowly add 0.5 litres of hydrochloric acid. Frequent agitation may be required to dissolve solids and scale. Allow acid to dissolve solids and scale, evident by the foaming action. After 5 to 10 minutes, check for presence of scale on grid. If necessary, add more acid to dissolve any remaining scale or scrape with putty knife.

4. Pour the solution from tub into the discharge tank. Dispose of scale with backwash from filter.

5. Place the tablet grid back into bottom of hopper. Rinse the tablet grid thoroughly with water and open the inlet-shutoff valve to allow the spray to rinse the grid from the bottom. The solution from the discharge tank will clean the discharge valve, tubing and venturi when system is restarted.

6. Pour the Easiflo® tablets from bucket back into tablet hopper. Resume operation.

7. Open inlet and outlet shut off valves to the chlorinator.

NOTE: To increase the period between grid cleanings, allow the tablet hopper to completely empty once a week.

SECTION B
TROUBLESHOOTER'S GUIDE

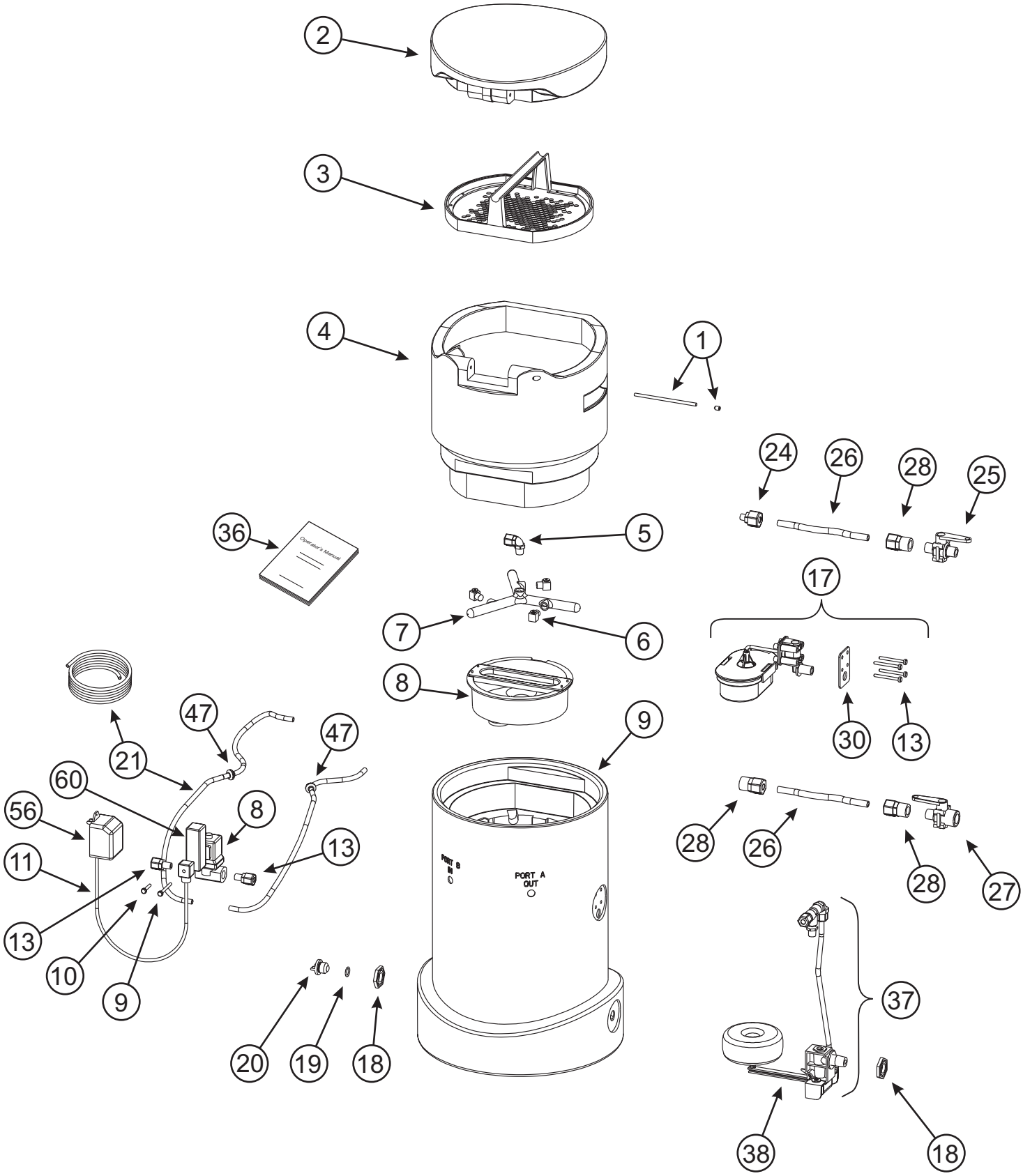
PROBLEM	CAUSE	SOLUTION
Insufficient water flow to chlorinator	Check water flow through spray nozzles	Clean spray nozzles with compressed air. Do not use mechanical cleaning method.
	Inlet shutoff valve closed	Open inlet shutoff valve
	Emergency shut off valve in closed position	If ESV is stuck, lower gently to reset
	Solenoid valve not operating	Check with dealer
Insufficient chlorine in pool	Feed rate/output too low	Increase feed rate/output on timer or auto control
	Chlorinator empty	Refill tablet hopper with Easiflo® tablets
	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
	Tablets stuck together	Tap side of tablet hopper to loosen
	Clogged tablet grid	Refer to Section A
	Clogged venturi system	Remove venturi – soak in tub with 10/1 mixture of water and 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/output on timer
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 dilute 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

Easiflo® 3 Commercial Pool Chlorinator

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.

Easiflo 3 Feeder Detailed View



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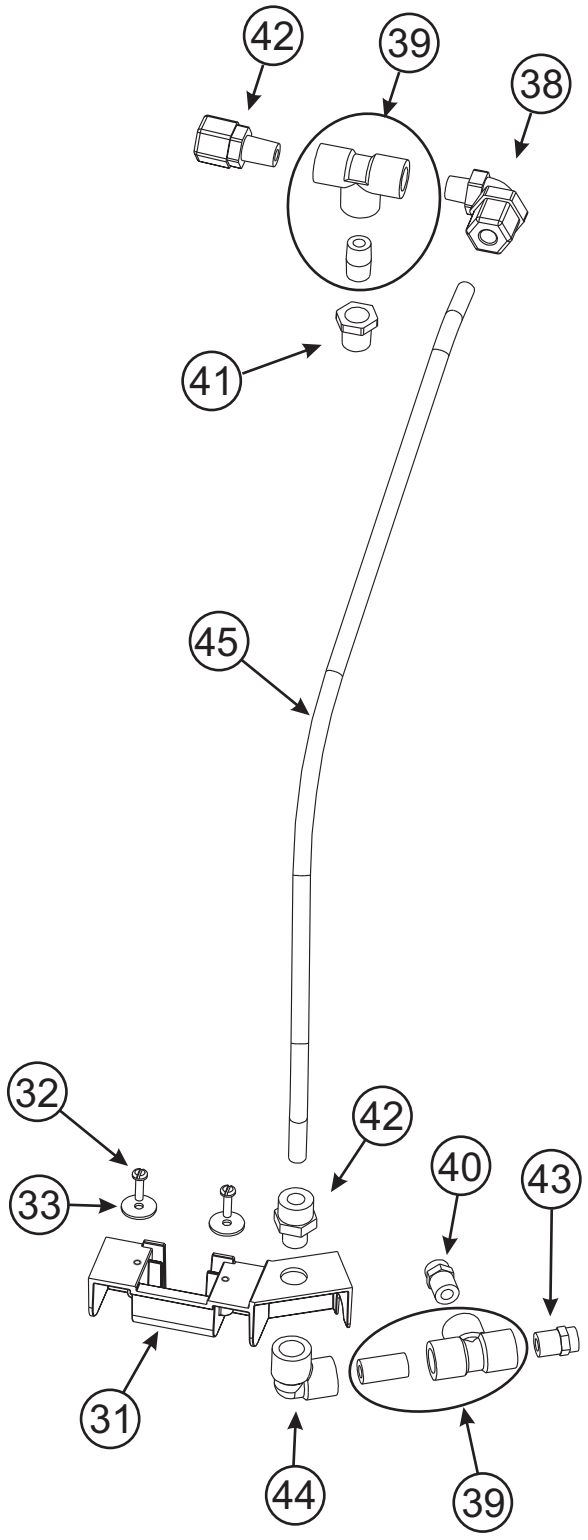
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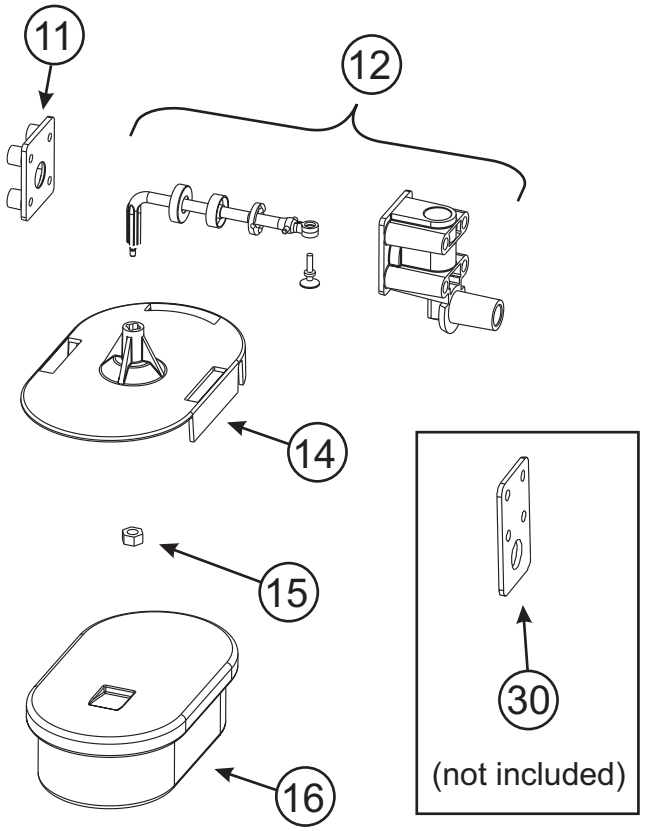
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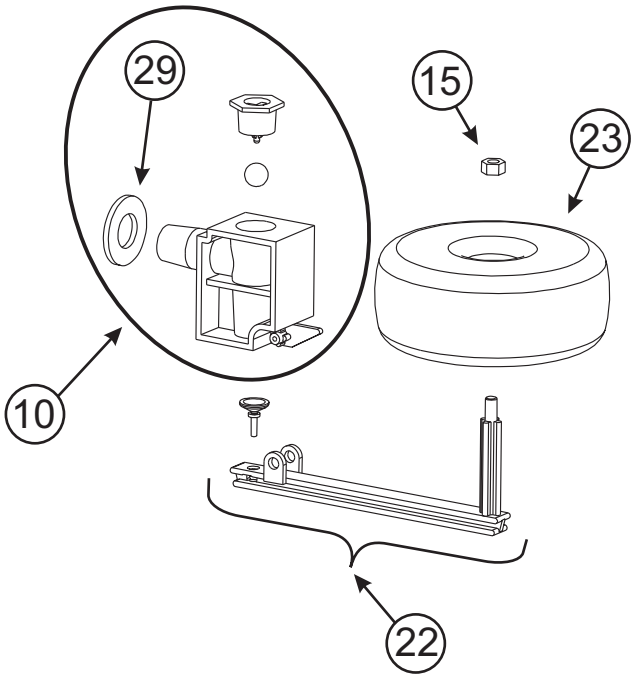
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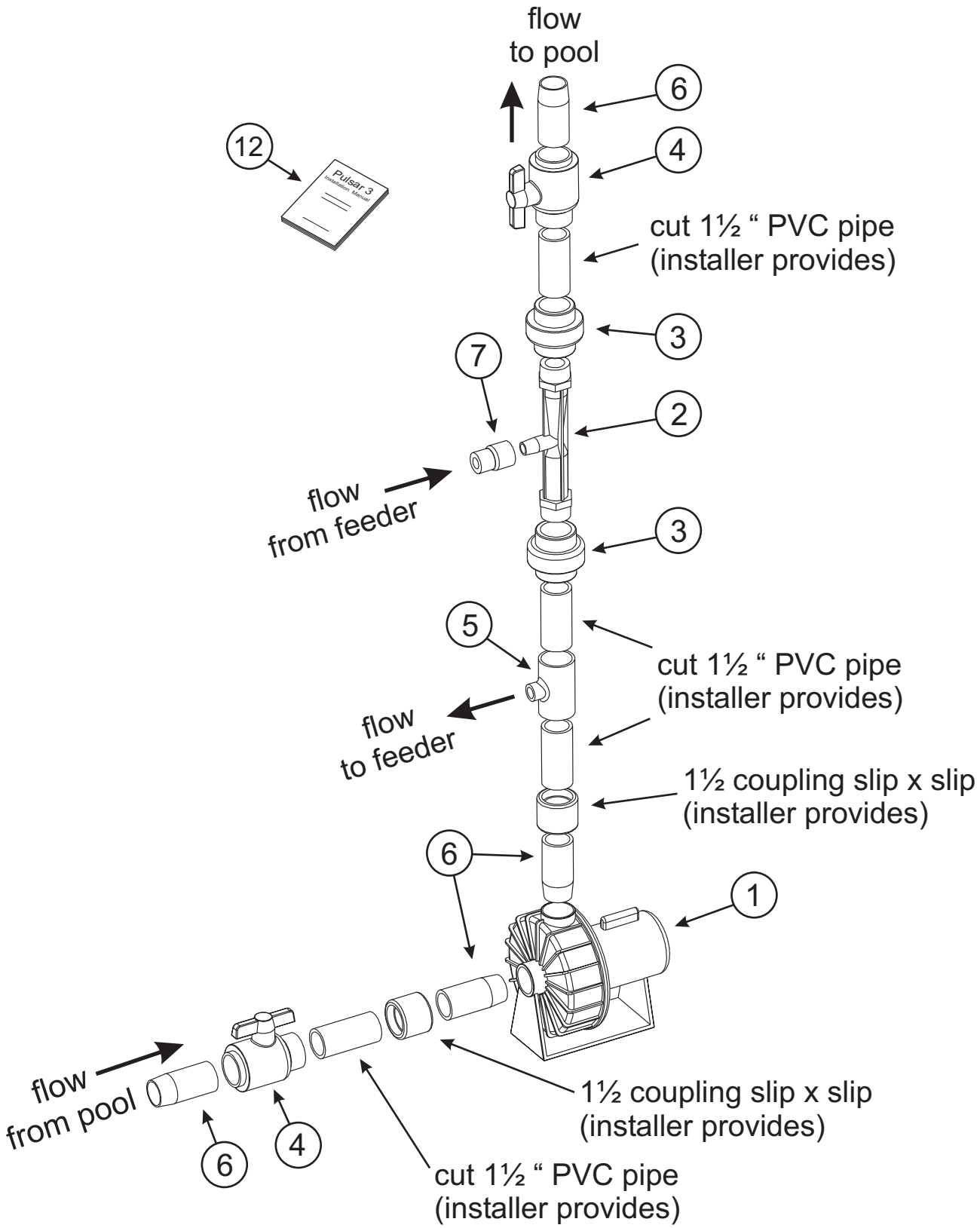
Installation Kit



Easiflo 3

Diagram Number	Part Number	Qty	Description
0	71528	1	Easiflo 3 System, PS 5000-Includes Installation Kit
1	71608	1	Hinge Rod W/Set Screw for E3 Hopper
2	71607	1	Lid for E3
3	71609	1	Briquette Screen Assembly for E3
4	71606	1	Hopper without Lid for E3
5	71619	2	Elbow (P6ME6) 3/8" For Feeders 30991 & E3
6	71617	3	Spray Nozzle for E3
7	71616	1	Manifold for E3
8	71620	1	Deflection Plate Assembly
9	71610	1	Base without assembled parts for E3
10	71615	1	Discharge Valve Body with Plug, Ball & Gasket
11	71536	1	Emergency Shut Off Mounting Plate
12	71535	1	Emergency Shut Off Valve with Arm Only
13	71537	4	Emergency Shut Off Mounting PVC Screws(1/4x20x2 1/4)
14	71539	1	Emergency Shut Off Float Plate
15	71538	1	Emergency Shut Off Float Plate PVC Nut/Discharge Arm Nut
16	71540	1	Emergency Shut Off Overflow Float
17	71496	0	Emergency Shut Off Valve Assembly - Part 71910 Not Included
18	71583	2	Discharge Valve Locknut
19	71613	1	(4026) O-Ring #115 - Used in Plug
20	71612	1	Plug for Feeder Body for E3
21	71558		3/8" O.D. Polyethylene Tubing - 20'
22	71584	1	Discharge Valve Arm with Suction Cup
23	71585	1	Discharge Valve Float
24	71614	1	Tube Connector (P8MC4) for E3
25	71621	1	1/2" Ball Valve MM (Inlet)
26	71626	1	20' 1/2" O.D. PE Tubing(P4 only need 3 inch piece)
27	71627	1	1/2" Ball Valve MF (Outlet)
28	71588	3	(5008) 1/2" X 1/2" Female Connector (P8FC8)
29	71611	1	1/2" X close PVC Nipple
30	71910	1	Rubber Gasket for Emergency Shut Off Valve
31	72863	1	Discharge Valve Enhancement Adaptor
32	71925	2	8 - 32X5/8" PVC Screws
33	72865	2	Custom Washer for Discharge Valve Adapter
34	71373	1	Cleaning pan for Briquette Grid (Easiflo 3)

1/8/2003

Note: Items 29 through 32 are not shown

Easiflo 3

Diagram Number	Part Number	Qty	Description
35	71598	1	(8001) Scoops (Easiflo Accessory)
36	71622	1	Operators Manual for E3 System
37	72864	0	E3 Enchancement Kit
38	71900	1	Parker fitting W6ME4
39	71968	2	1/4" Threaded PVC Tee with Nipple
40	72862	1	Spray Nozzle (Lechler 632.364.5E.BC)
41	71572	1	(3045) Reducing Bushing (3/8"x1/4") For Feeder 30025 (PPI)&E3 Enhancement K
42	71582	2	(4014) Parker Fitting P6MC4
43	72861	1	Spray Nozzle (Lechler 632.564.5E.BC)
44	71563	1	(3002) PVC Elbow For Feeders 30025, 30991and P3 Enhancement Kit
45	71574	1	(3103) 3/8" P.E. Tubing E-64-0500 (13.5")

Note: Items 29 through 32 are not shown

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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).**