

Operator's Manual



Dealer Contact

Model # PS 140

rev.1 (8/13/13)

Lonza

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Product Stewardship

MAKING THE WORLD A BETTER PLACE

Lonza is committed to maintaining and improving our leadership in the stewardship of our products. One of our initiatives 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.

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. All who use and handle products must follow safe and environmentally sound practices.

For more information about the stewardship of our products, contact your Lonza Representative.

The Major Components - How They Work

General Principles of Operation

The three main components of the **Pulsar® 140 Chlorinator** are (from top to bottom) the Briquette Hopper, the manifold spray section and the discharge tank. The water from the pool enters the **Pulsar® 140 Chlorinator** via the inlet port. The spray manifold then distributes the water onto the briquette grid creating a chlorinated solution. The chlorinated solution falls into the discharge tank and is discharged into the pool recirculation system by the evacuation system.

The amount of chlorine discharged from the feeder is determined by the ORP controller and the Timer. **When using an ORP controller with this unit, select “Yes” for the ORP or “No” for use of the internal Timer.**

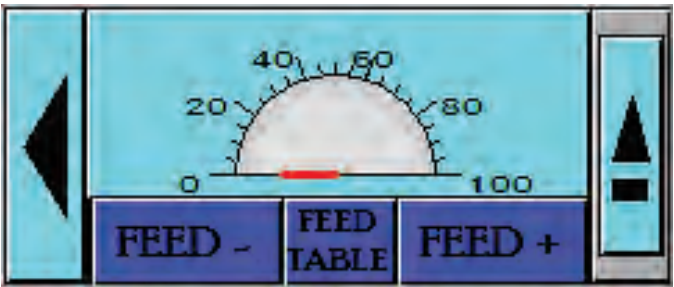


Inlet water pressure of 35 to 45 psi [2.41-3.10 bar] is required to provide sufficient flow into the **Pulsar® 140**. These pressures will result in an inlet flow of 0.75 gallons/minute [2.84 lpm]. The **Pulsar® 140** feed rate settings referred to in the Pulsar System Owners manual (right) are calibrated for this flow rate.

Flow out of the **Pulsar® 140** discharge tank requires a vacuum to drain. A minimum outlet flow-rate of 2.5 gpm [9.46 lpm] ensures that the flow out of the **Pulsar® 140** exceeds the flow in. Once the **Pulsar® 140** is installed, 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.

Figures in Chart below represent Chlorinator Output in Pounds of Available Chlorine per Day

Using the arrows on the touch screen, set the timer to the desired “% output rate”



% output rate	lbs [kg] Av. Cl
100	140 [63.5]
95	133 [60.3]
90	126 [57.2]
85	119 [54.0]
80	112 [50.8]
75	105 [47.6]
70	98 [44.5]
65	91 [41.3]
60	84 [38.1]
55	77 [34.9]
50	70 [31.8]
45	63 [28.6]
40	56 [25.4]
35	49 [22.2]
30	42 [19.1]
25	35 [15.9]
20	28 [12.7]
15	21 [9.5]
10	14 [6.4]
5	7 [3.2]
0	0 [0]

SPECIFICATIONS – Model PS 140

Operational Requirements:

Inlet pressure (Range)	35-45 psi [2.41-3.10 bar]
Ideal	37 psi [2.55 bar]
Outlet vacuum	15-29" Hg. [38.1-73.7cm]
Operating Temperature	40-115°F [4.4° to 46.1° C]

Operational Characteristics:

Inlet flow.	0.75 gpm [2.84 lpm]
Outlet flow	2.5 gpm [9.46 lpm]

Dimensions:

Tubing	1/2" [12.7mm] O.D. Polyethylene
Chlorinator dimensions.	W: 25" [63.5cm] x D: 30" [76.2 cm]
Chlorinator height.	35" [88.9cm]
Chlorinator weight (full).	150 lbs [68.0kg]
Chlorinator weight (empty)	50 lbs [22.7kg]

Capacity:

100 lbs [45.4kg] Pulsar® Plus Dry Chlorinator Briquettes (equivalent to 68 lbs [30.8kg] available chlorine)

Feed Rate:

Pulsar® Plus Briquettes: 5-140 lbs [2.3-63.5kg] of Available Chlorine per day

Recommended Pool Size¹:

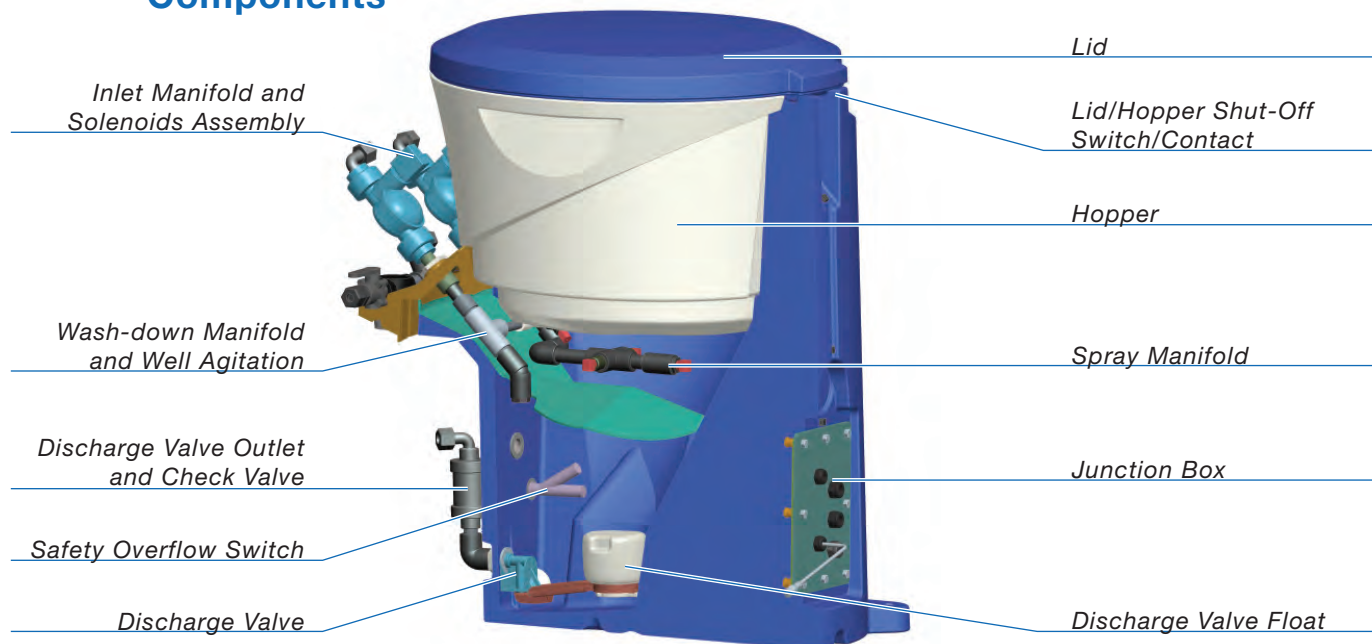
15,000-200,000 gallon [56,781-757,082 liter] un-stabilized¹

50,000-600,000 gallon [189,271-2,271,247 liter] stabilized¹

¹Subject to local health codes

General Principles of The Pulsar® 140

Components



The **Pulsar® 140** employs a “HMI/PLC” electronics package for efficient operation and enhanced safety features. The power to the chlorinator is reduced to 24VDC with the use of a step-down transformer in the Control Box. The **Pulsar® 140** utilizes a PLC Timer with 20 presets for 0-100% control of chlorine output rates. Safety Switches are additionally used to interrupt spray to the nozzles when the lid is opened or when the hopper is removed. The **Pulsar® 140** also incorporates improved maintenance features. Water flow in the unit is designed to remove residue from the chlorinator base. Listed below is a description of each component of the Electronics Package:



Lid Safety Switch:

The **Pulsar® 140** is equipped with a Lid Safety Switch. This switch is designed for safety purposes to interrupt flow to the spray jets when the lid is opened. The design of this feature incorporates a proximity switch so there are no wires connecting the lid to the chlorinator hopper or the hopper to the base. When the hopper is separated from the chlorinator base, power to the solenoid is turned off.



General Principles of The Pulsar® 140

Safety Overflow Switch:

The **Pulsar® 140** utilizes a Safety Overflow Switch to prevent the unit from overflowing. Outlet flow can be slowed or stopped by many causes, which can ultimately lead to the unit overflowing. The most common cause would be scale buildup in the venturi, discharge valve and/or outlet tubing. The electronic overflow switch will interrupt power to the solenoid if the level in the discharge tank reaches a set height. When power is interrupted, the solenoid will close and shut off the inlet flow to the spray manifold.



Solenoid/Timer Assembly:

The **Pulsar® 140** relies on a timer (PLC) and solenoid to control output rate. The timer uses a 120V power supply (plug in control panel to dedicated 15A circuit breaker) and the solenoid uses on a 24VDC power supply (powered by the control panel). The **Pulsar® 140** can also be used in conjunction with an ORP controller. The yellow male pigtail from the **Pulsar® 140** controller should be plugged into the 120V chlorine pigtail of the ORP controller. The signal from the ORP controller will be relayed to the solenoid to feed chlorine.

Pulsar® HMI/PLC

ORP Controller

Chlorine Pigtail



General Principles of The Pulsar® 140

Test Operation of Electronic Switches:

Note: Close inlet and outlet valves.

Before start up, lift the briquette screen out of the hopper and set aside on a clean surface. Plug the power cord from the **Pulsar® 140** controller into a dedicated 15amp GFIC outlet. The HMI screen should be illuminated. Lift the hopper off the base. An alarm light will come on. This indicates that the lid switch is working properly.



Next, with the hopper off, remove the valve plate and manifolds and place off to the side. Remove the shield and place to the side. Reach into the base and lift the safety overflow switch. An alarm page for High Level should pop up, indicating that the switch is working properly. Replace the shield, valve plate with manifolds and place the hopper on the base. Next lift the lid. The lid alarm light should come on.

This concludes the test procedure. Should the test procedures fail, refer to the Electrical and Control Panel Set-up section (pages 14-17) for more information or contact your Dealer for additional information.

Safety Features

Overflow Port:

In the event that the solenoids fail to close, an overflow port has been incorporated into the **Pulsar® 140** design. PVC pipe should be run from this overflow port to a floor drain. The solenoid should be checked when an abnormally low or high chlorine reading is indicated in the pool or when water is flowing out of the overflow port through the pipe down to the drain.



Overflow Port

Unplug the controller from the outlet or ORP unit and call the dealer. If water continues to flow into the chlorinator, the solenoid is stuck open.

If flow stops when the controller is unplugged, the problem is the electronic overflow switch. In either situation, the inlet ball valve should be closed and the dealer should be contacted for assistance.

General Principles of The Pulsar® 140

Maintenance Features

Well Agitator:

The Well Agitator is designed to keep solids in suspension for removal by the suction created by the venturi. The Well Agitator nozzle can become blocked over time. Remove the well agitator nozzle and clean nozzle orifice if needed.



Drain Port:

The Drain Port is used to clean excess residue and scale buildup from the chlorinator discharge tank. Remove the 3/4" [19mm] plug and flush system as needed.



Drain Port

Wash-down & Shield:

Below is a picture of the shield and wash-down manifold assembly. This assembly is designed to wash loose solids into the base where they are removed with the chlorine solution.



The shield protects the valves, floats and electronic level switches from scale and residue deposits.

Without this shield, scale and residue will increase float weight and decrease buoyancy. In addition, scale buildup can bind pivot points, which could result in valve failure.

Pre-Startup Checklist

Following the procedure outlined below will ensure a smooth start-up of the **Pulsar® 140 Chlorinator**. For seasonal operation, perform this procedure each spring.

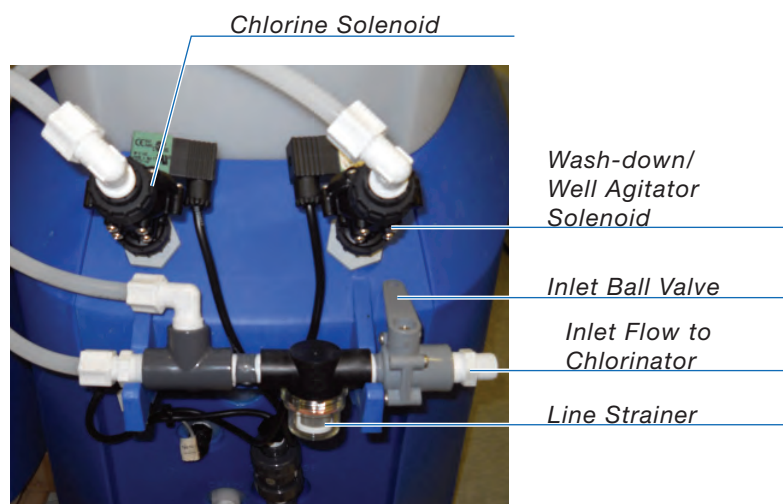
IMPORTANT!!

Do NOT put Pulsar® Plus 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, the **Pulsar®** booster pump, and open all valves to the chlorinator.
2. With lid open, place a metal object over the lid switch to see that the four nozzles are spraying water onto the Briquette-Tank grid.
3. Check all lines leading to the Chlorinator for leaks. Hand tighten all fittings if any leaks are found.
4. Check to make sure Safety Overflow Switch is oriented properly with the float above the switch.

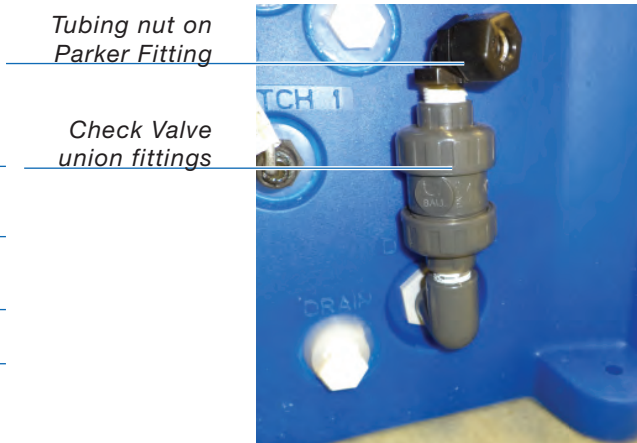


Outlet Water Flow

As the Discharge Tank fills with water, 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. When the water level drops, the float falls, shutting off the valve. There is a Check Valve mounted vertically on the Discharge Valve to prevent pool water from backing up into the Discharge Tank.

Use the following procedure to ensure that the outlet flow system is operating properly.

1. With the Briquette Hopper of the chlorinator temporarily off the discharge tank, use a hose or pail to fill the Discharge Tank with sufficient water to open the Discharge Valve.
2. The float should rise, opening the Discharge Valve, allowing water to be drawn out by the **Pulsar®** evacuation 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 O-ring is properly installed in the fittings. (NOTE: Air bubbles near the **Pulsar® 140 Chlorinator** body that do not move are normal and do not indicate leaks.)
4. Tighten connections on check valve true union fittings and Tubing nut on Parker fitting.



Startup Procedures

After completing the PRE-START-UP CHECKLIST, and establishing that all components of the Chlorinator are operating properly, your **Pulsar® 140 Chlorinator** is ready for start-up.

Routine maintenance of the **Pulsar® 140 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 **Pulsar® 140 Chlorinator**.

NOTE: The use of Carbon Dioxide gas (CO₂) to lower pH will raise the Total Alkalinity significantly. High total alkalinity (over 80 ppm) will increase scale and solids buildup in Chlorinator.

WARNING

Use **ONLY Pulsar® Plus Briquettes** in the Chlorinator. The use of any other treatment chemicals will void the warranty and NSF listing. **DANGER:** Under no circumstances should you 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 **Pulsar® Plus Briquettes**. The Briquette Hopper holds 100 pounds [45.4kg] of **Pulsar® Plus Briquettes**.
2. Check the chart on page 11 to determine an approximate start-up timer setting for your pool.
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 ORP Controller setting) for your pool. Adjust the chlorine output either up or down according to the table or, adjust the ORP set-point.

Startup Procedures

RECOMMENDED START-UP SETTINGS

*Do not exceed 25-ppm stabilizer

Control Panel Feed Rate	Pool Volume (Gallons [Liters])	
% Output	Stabilized Pool	Un-Stabilized Pool
100	N/A	N/A
95	N/A	N/A
90	N/A	N/A
85	N/A	N/A
80	N/A	N/A
75	N/A	N/A
70	N/A	N/A
65	N/A	N/A
60	N/A	N/A
55	N/A	N/A
50	N/A	N/A
45	630,000 [2,384,550]	210,000 [794,850]
40	560,000 [2,119,600]	186,667 [706,533]
35	490,000 [1,854,650]	163,333 [618,217]
30	420,000 [1,589,700]	140,000 [529,900]
25	350,000 [1,324,750]	116,667 [441,583]
20	280,000 [1,059,800]	93,333 [353,267]
15	210,000 [794,850]	70,000 [264,950]
10	140,000 [529,900]	46,667 [176,633]
5	70,000 [264,950]	23,333 [88,317]
0	0 [0]	0 [0]

Pulsar® 140 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 **Pulsar® 140 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

Suggested Inspection Frequency	Section	Contents
As Needed	Section A	Use of Pulsar® Plus Acid Cleaner 50 to remove solids and scale from the Pulsar® 140 Chlorinator
As Needed	Section B	Electrical and Control Panel Set-up

Pulsar® 140 Chlorinator Inspection and Maintenance

SECTION A

Cleaning Pulsar® 140 Chlorinator with PULSAR® Plus Acid Cleaner 50

Inspection: The residue build-up and cleaning frequency required for the unit will depend on the amount of **Pulsar® Plus Briquettes** used and the pool water chemistry. Described below is the easiest way to remove residue and minor scale buildup using the **Pulsar® Plus Acid Cleaner 50**.

WARNING

DO NOT use Muriatic Acid to perform the following procedures. Chlorine gas may evolve causing serious injury or possible death.

Maintenance Procedure Steps

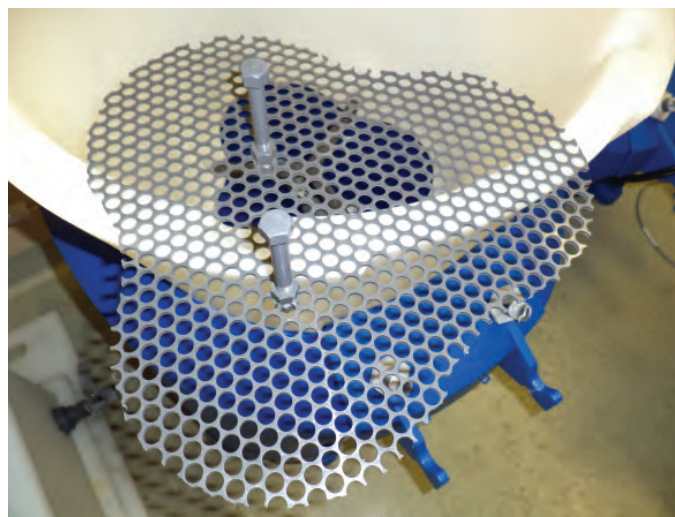
1. Close the inlet and outlet shutoff valves to the chlorinator.
2. Lift the Briquette Hopper off of the Discharge Tank. Remove the Briquette Grid and put the contents into a clean dry bucket. Be sure to remove all pieces of **Pulsar® Plus Briquettes**. Rinse off residue buildup on spray manifolds, deflection plate, floats, etc. with a hose and flush out discharge tank using the Drain Valve before proceeding. Close the Drain Valve.
3. Place the briquette grid in a shallow tub. Fill with 2 gallons [7.57 liters] of water. Slowly pour 1 quart [.95 liters] **Pulsar® Plus Acid Cleaner 50** into tub. Fill the discharge tank 1" [2.54mm] below overflow port and add 1 quart [.95 liters] **Pulsar® Plus Acid Cleaner 50**.

Frequent agitation may be required to dissolve residue and scale. Allow acid to dissolve residue and scale, evident by the foaming action. After 30 minutes, check for

presence of scale on grid. If necessary, add additional **Pulsar® Plus Acid Cleaner 50** to dissolve any remaining scale or scrape with putty knife.

4. Dispose solution from tub with backwash from filter.
5. Place Briquette Hopper on top of discharge tank; place the Briquette grid back into bottom of hopper. Rinse the Briquette grid thoroughly with water and open the inlet-shutoff valve and press the feed start button to allow the spray to rinse the grid from the bottom. The solution from the Discharge tank will clean the discharge valve and tubing when the system is restarted.
6. Pour **Pulsar® Plus Briquettes** from bucket back into Briquette Hopper. Resume operation.
7. Open inlet and outlet shut off valves to the chlorinator.

NOTE: To increase the period between Grid cleanings, allow Briquette Hopper to completely empty once a week.



Pulsar® 140 Chlorinator Inspection and Maintenance

SECTION B

Electrical and Control Panel Set-up

Welcome To Your New Pulsar® System.

Prior to powering on the control panel, please be sure that you have properly installed the auxiliary equipment.

Step 1: Booster pump motor wiring should be connected through the cable glands on the bottom of the control box. The Line and Neutral wires should connect to the Orange terminal blocks at the bottom, with the ground wire connecting to the Green/Yellow terminal block adjacent to the orange ones.

Step 2: Install the flow switch into the pool return line (see installation manual). There is 15 feet [30.5cm] of lead cable on the control box that will connect to the flow switch. Please make sure that the flow switch is mounted to connect to the cable, otherwise, a patch cable will be needed. The flow switch requires a 1/2" [12.7mm] NPT pipe connection. This should be installed horizontally on the side of the pipe. If installing on the top of the pipe, ensure that the line will be completely full, and water will contact the flow switch. This flow switch prevents the booster pump from running when there is no water in the line, so it cannot be run dry and inadvertently damage the pump. **Without the flow switch, the system will not work.**

Step 3: Connect the orange lead cable from the control box to the flow switch quick-connection.

Step 4: Decide on how you will run the chlorine feed system.

For 110V from ORP – use extension cord and plug in yellow male NEMA 5-15 plug on Control Panel into 110V plug from ORP chlorine signal.

For field dry contact – applying NO voltage – Certified Electrician ONLY - Open Control Panel and remove yellow cord wiring from internal relay terminals and remove cord from control panel enclosure. Use the existing cable gland to run new chlorine demand wiring through the wall of the enclosure. Be sure to tighten down the cable gland nut to ensure that moisture cannot enter and corrode internal components. Using the black terminal blocks, connect one side of the external relay to TB-REQ1 and the other end to TB-REQ2. This will send a 5V signal through your wiring and dry contact (relay), and back to the control box for switching on the chlorine feed cycle.

Step 5: Connect the quick-connect cable from the feeder to the control box. The quick connect receptacle on the left side of the bottom of the control box is keyed so that the gray cable from the feeder body can only fit in one way. **DO NOT FORCE.** Gently turn the connector until it slides on the receptacle, then tighten the nut to ensure a secure connection.

Step 6: If you have a remote shutdown or power off device, you may use the red terminals to connect a dry contact relay. **APPLY NO VOLTAGE.** This will shut down the system when not in use. The red jumper cable will need to be removed when installing new wiring for external shutdown.

Pulsar® 140 Chlorinator Inspection and Maintenance

SECTION B

Electrical and Control Panel Set-up

Starting Up The System For The First Time

When you first power on the control panel, you should see this screen.



This means that the system is booting. It will take 5 seconds to startup and go to the control screen.

The control screen is the main screen for the system, and the one that you will see when running normally.



ALARM OK – This is a signal light as well as a button. When pressed, the Alarm page is brought up. This will show you your active alarms, and allow you to troubleshoot directly from that page. Instructions are included for troubleshooting on the screen.

1. **NO FLOW** – This is your flow indication. When RED, no flow is being detected by the flow switch. When GREEN, flow is good and the system will be allowed to run.
2. **PUMP OFF** – This indicates the state of the booster pump start signal.
3. **FEED OFF** – This indicates the state of the FEED valve.
4. **WASH OFF** – This indicates the state of the WASH valve.
5. **E-STOP OK** – This is a button which will turn off all outputs when pressed. (The PUMP will turn OFF, the FEED and WASH valves will CLOSE).
6. **FEED START** – This button toggles the feed process, ON or OFF.
7. **WASH TIMER** – This button goes to the WASH TIMER page where you can set up the after-feed wash time. Default is 5 minutes.
8. **SET UP** – This page goes to the system set up pages. All settings on following pages should be set up initially, then verified after any power outage.

Pulsar® 140 Chlorinator Inspection and Maintenance

SECTION B

Electrical and Control Panel Set-up

INITIAL PROGRAMMING SETUP

Press SET UP button from Main control screen.

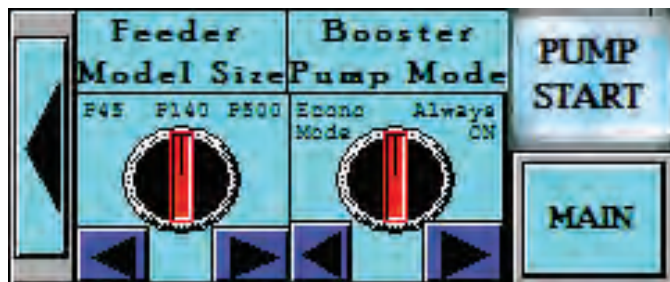
The following ORP/FEED Screen will appear. The box in the top center of the screen will show the feeder size that the control box is set up for. If it reads P000, then the feeder size needs to be set up on the subsequent page. See SETTING FEEDER SIZE section below. The DILUTION Button allows the WASH valve to activate simultaneously with the FEED valve. This is a permanent ON setting with the P45, but can be toggled ON/OFF with the P140 and P500 feeders. The GREEN color means that it is set to run both valves. RED means that only FEED will run when FEED is requested.



Select whether you would like to feed chlorine based on an ORP input or based on a given feed rate (+/- 10%). When ORP is selected YES, then the FEED RATE Button is disabled. Only one method of chlorine feeding can be selected at any given time. When ORP is selected NO, then the FEED RATE Button is enabled. See SETTING FEED RATE section below.

SETTING FEEDER SIZE

Press the RIGHT PAGE button.



Use the dark blue buttons to toggle the switch to select Pulsar® Model Size based on the unit installed.

SETTING UP BOOSTER PUMP

Use the dark blue buttons to select the Booster Pump Mode.

ECONO MODE (Default) – Runs the Booster Pump for 5 minutes after the last valve activation (whether FEED or WASH), then shuts off the Booster Pump to conserve energy.

ALWAYS ON – Runs the Booster Pump continuously while the FEED is ON, when the alarm state is OK

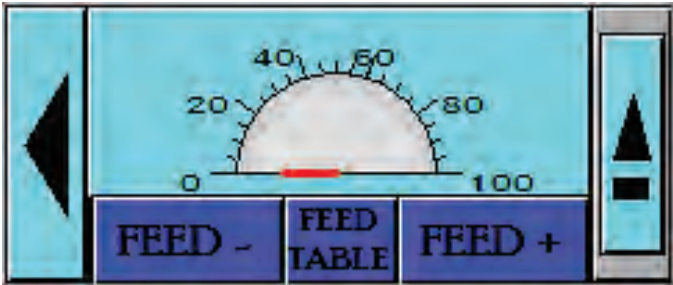
*Remember that the E-STOP and FLOW SWITCH preempt any activation of the pump. If the E-STOP is activated (manually pressed), or the FLOW SWITCH (doesn't sense flow), then the pump will not turn ON.

Pulsar® 140 Chlorinator Inspection and Maintenance

SECTION B

Electrical and Control Panel Set-up

SETTING FEED RATE



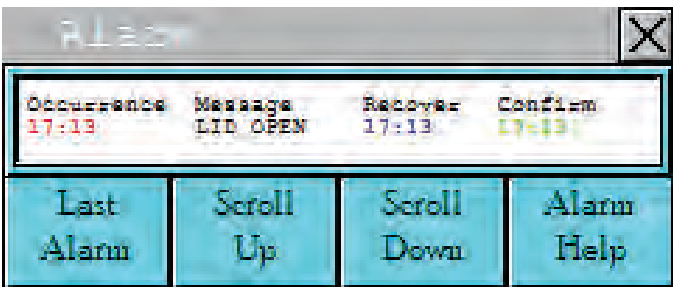
By pressing the FEED – or FEED + buttons, the feed rate for chlorine can be adjusted from 0 – 100% in 5% increments. The FEED TABLE button will open a pop-up window which will correlate percent to pounds chlorine per day.

DEFAULT is 100%

FEED RATE			
FEED/LBS	FEED/LBS	FEED/LBS	FEED/LBS
5% = 71LB	30% = 421LB	55% = 771LB	80% = 1121LB
10% = 141LB	35% = 491LB	60% = 841LB	85% = 1191LB
15% = 211LB	40% = 561LB	65% = 911LB	90% = 1261LB
20% = 281LB	45% = 631LB	70% = 981LB	95% = 1331LB
25% = 351LB	50% = 701LB	75% = 1051LB	100% = 1401LB

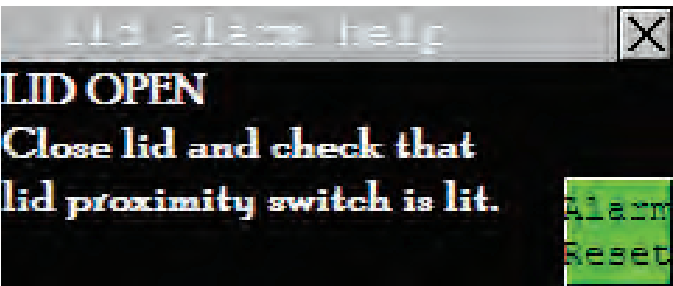
Press the X in the top right of the screen to close the window and return to the FEED RATE meter.

ALARM PAGE



The ALARM PAGE can be accessed by pressing the ALARM Lamp on the MAIN CONTROL screen. The last alarm will be shown. Each alarm can be highlighted by pressing the SCROLL UP and SCROLL DOWN buttons. Pressing the LAST ALARM button will highlight the most recent alarm. Pressing ALARM HELP will open a pop-up window with a troubleshooting guide for that particular alarm.

For example:



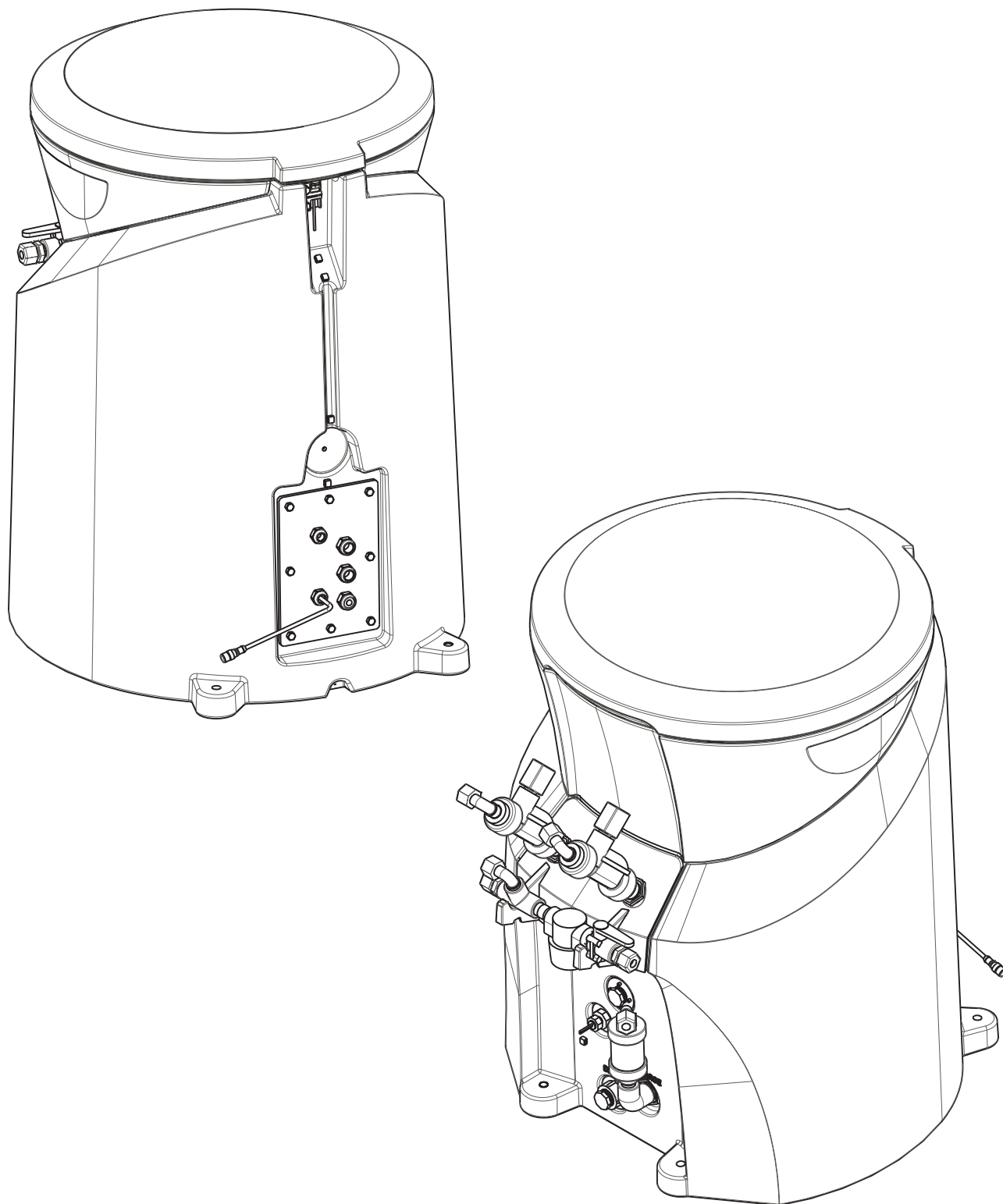
The pop-up can be closed by pressing the X in the top right of the screen. Pressing the ALARM RESET button resets the alarm momentarily. This will allow you to see if the alarm is persistent, or already cleared, and in a non-alarm state.

ALARMS

1. LID HOPPER OPEN
2. LID OPEN TOO LONG – greater than 1 hour
3. PUMP STARTER SWITCHED OFF
4. PUMP STARTER TRIPPED – greater than 1 hour
5. EXTERNAL SHUT DOWN EVENT
6. LEVEL SWITCH HIGH
7. LEVEL SWITCH HIGH TOO LONG – greater than 10 minutes

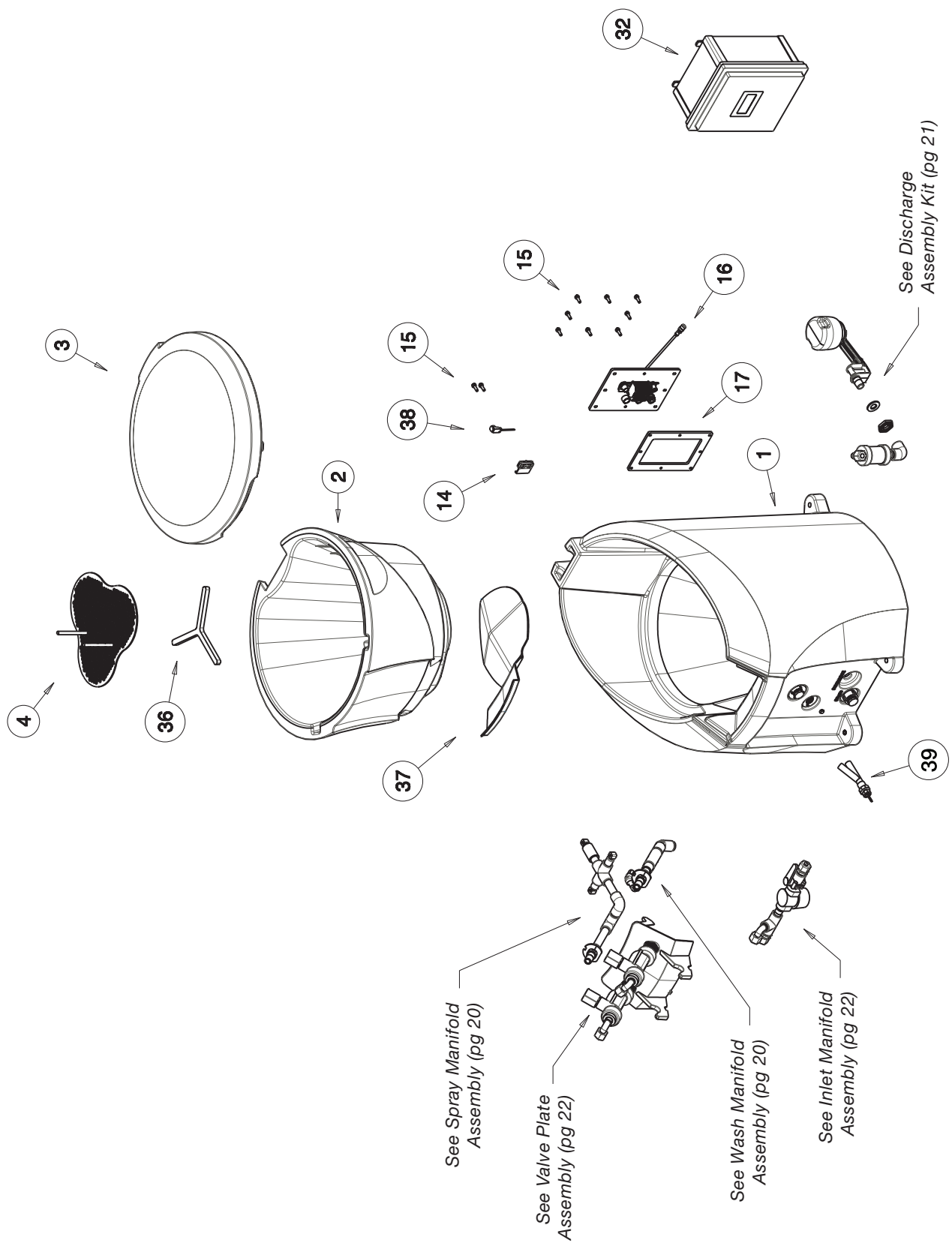
Pulsar® 140 Feeder: Detailed View

See pages 24-25 for Diagram Descriptions



Pulsar® 140 Feeder: Detailed View

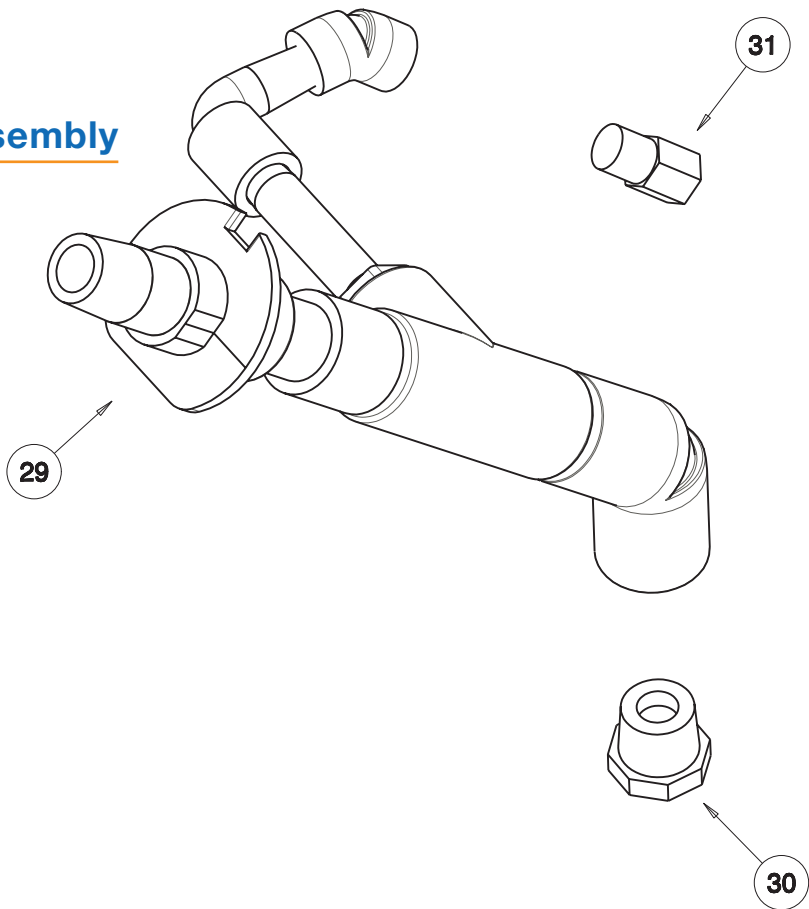
See pages 24-25 for Diagram Descriptions



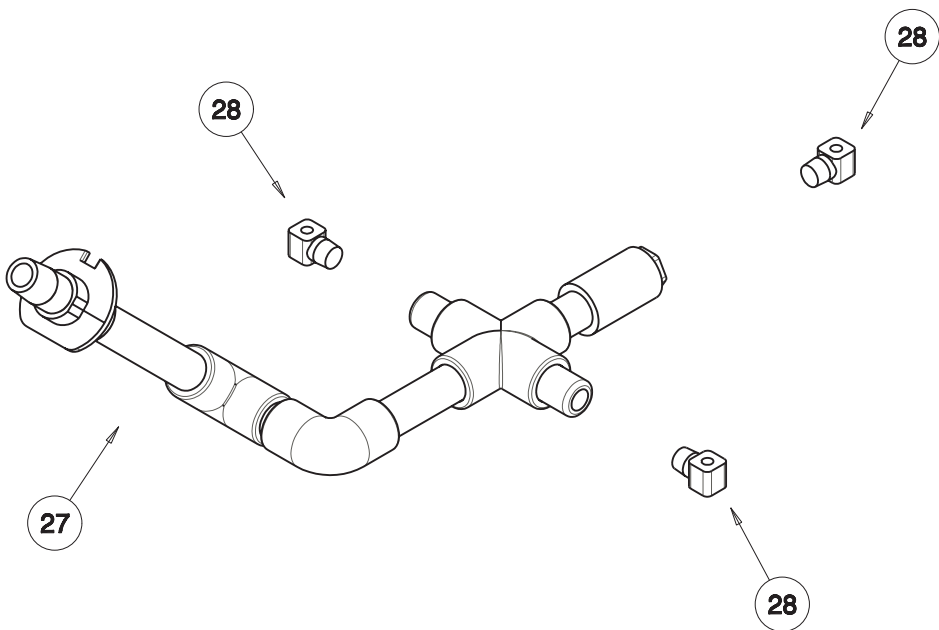
Pulsar® 140 Feeder: Assembly Views

See pages 24-25 for Diagram Descriptions

Wash Manifold Assembly



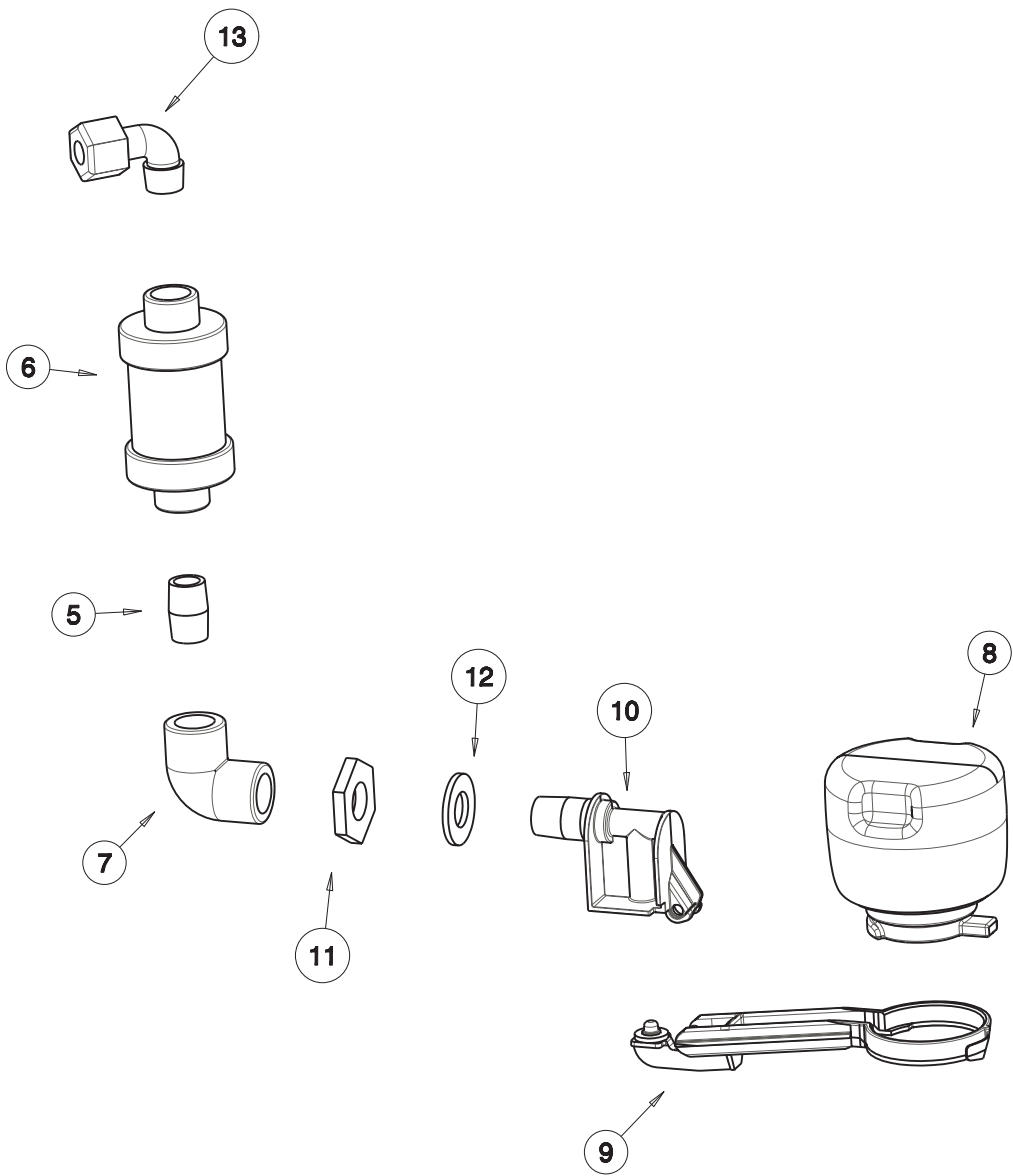
Spray Manifold Assembly



Pulsar® 140 Feeder: Assembly Views

See pages 24-25 for Diagram Descriptions

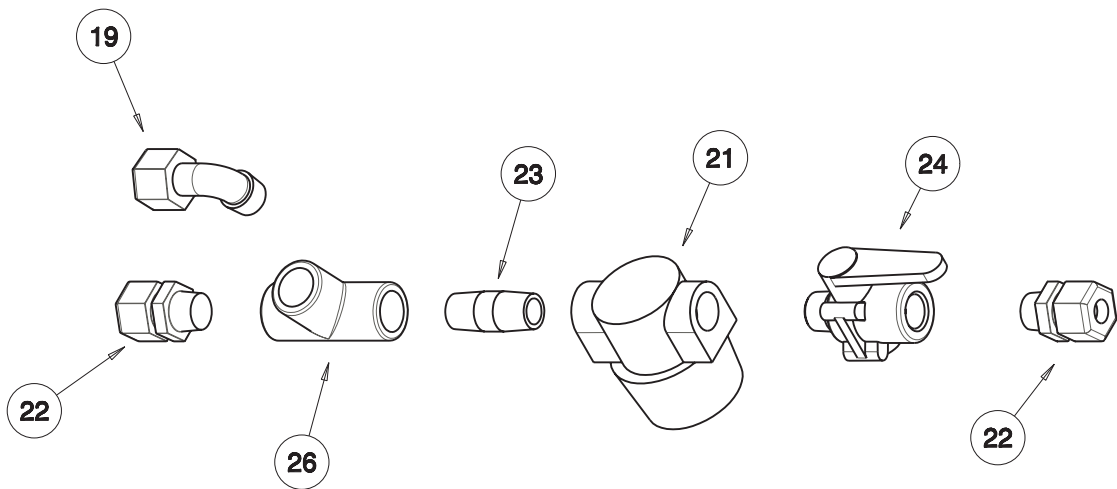
Discharge Assembly Kit



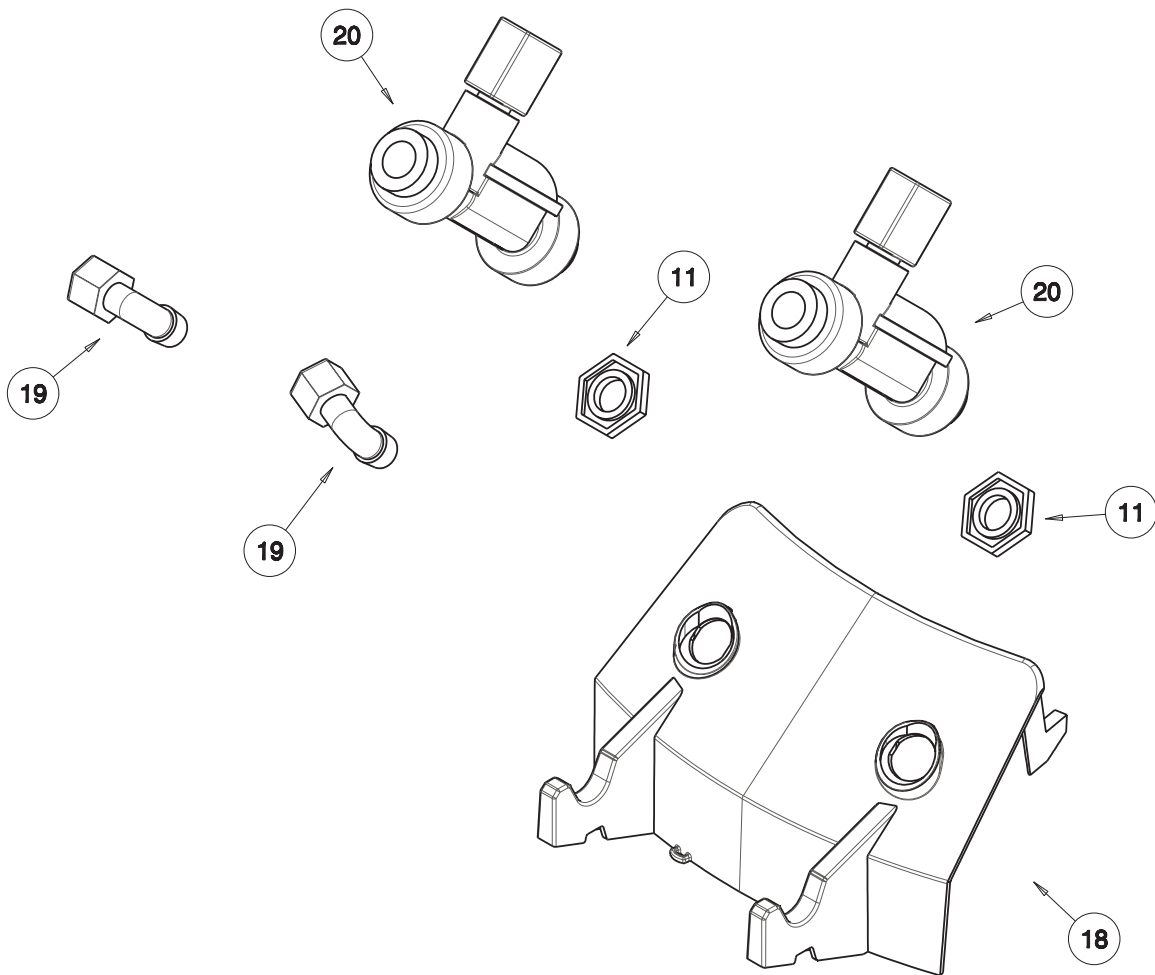
Pulsar® 140 Feeder: Assembly Views

See pages 24-25 for Diagram Descriptions

Inlet Manifold Assembly



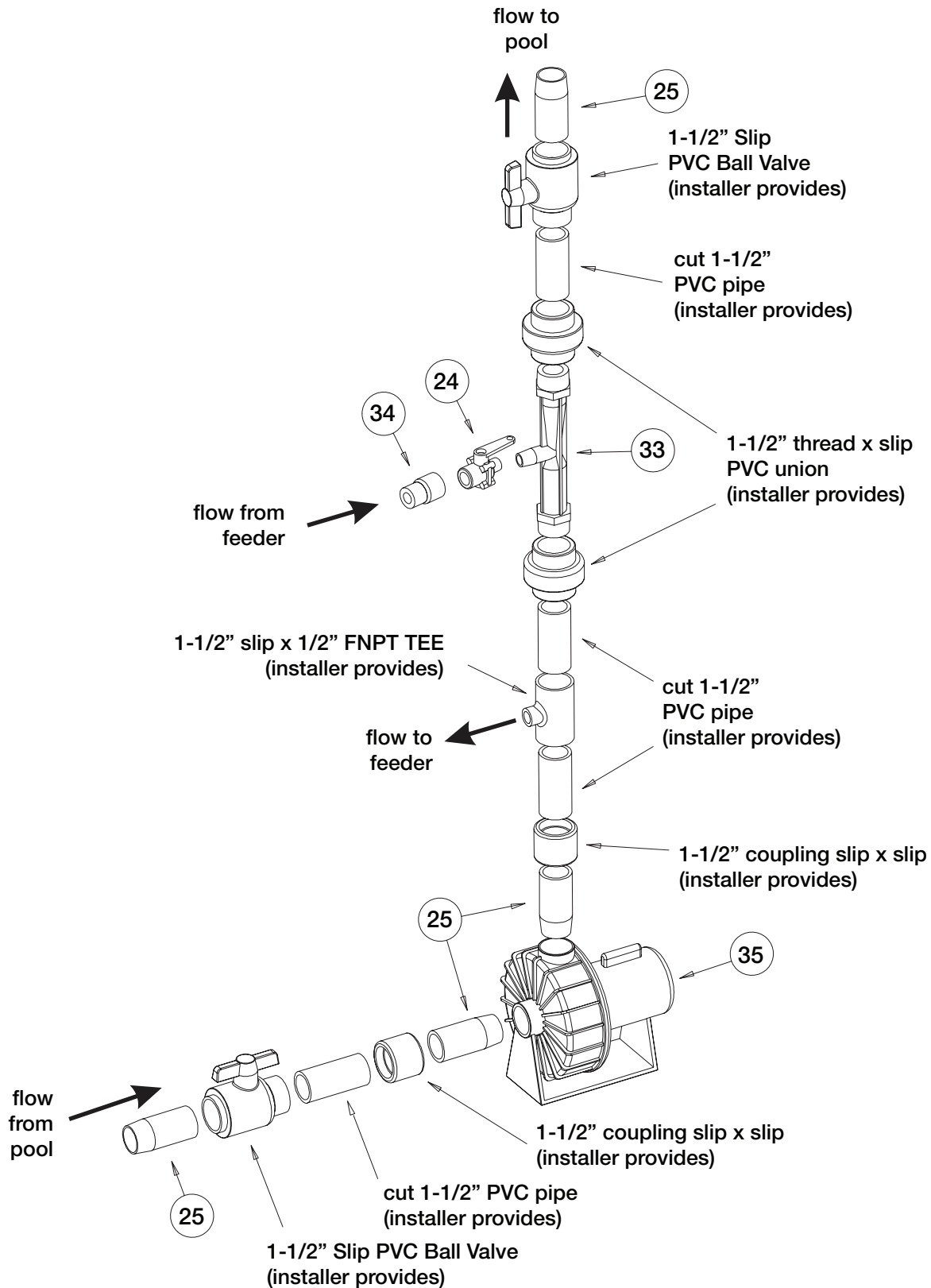
Valve Plate Assembly



Pulsar® 140 Feeder: Assembly Views

See pages 24-25 for Diagram Descriptions

Pulsar® Installation Kit



Pulsar® 140 Feeder: Diagram Descriptions

Diagram Number	Location	Part Number	Qty/ Unit	Description
1	MOLDED BASE ASSEMBLY	79633	1	MOLDED BASE WITH INSERTS
2	HOPPER ASSEMBLY	79638	1	HOPPER
3	LID ASSEMBLY	79639	1	LID
4	HOPPER ASSEMBLY	79652	1	GRID
5	DISCHARGE ASSEMBLY KIT	71916	1	1/2" X 1-1/2" NIPPLE
6	DISCHARGE ASSEMBLY KIT	79218	1	CHECK VALVE
7	DISCHARGE ASSEMBLY KIT	79222	1	1/2" INCH PVC 90° ELBOW
8	DISCHARGE ASSEMBLY KIT	79810	1	DV Float
9	DISCHARGE ASSEMBLY KIT	79805	1	DV Arm
10	DISCHARGE ASSEMBLY KIT	79806	1	DV BODY
11	DISCHARGE ASSEMBLY KIT	71583	1	DV NUT
11	VALVE PLATE ASSEMBLY	71583	2	DV NUT
12	DISCHARGE ASSEMBLY KIT	71576	1	DV GASKET
13	DISCHARGE ASSEMBLY KIT	79811	1	P8ME8
14	BASE ADD ON'S (Features)	79647	1	BRACKET LID SWITCH
15	BASE ADD ON'S (Features)	76360	10	ISOPLAST BOLT 1/4 - 20 X 3/4"
16	BASE ADD ON'S (Features)	79616	1	J-BOX ASSEMBLY WITH TURCK CABLE
17	BASE ADD ON'S (Features)	79618	1	J-BOX GASKET
18	VALVE PLATE ASSEMBLY	79625	1	VALVE PLATE (SOMERSET)
19	VALVE PLATE ASSEMBLY	79813	2	JACO - WHITE 1/2" MNPT x 1/2" TUBE 90° ELL
19	INLET MANIFOLD ASSEMBLY	79813	1	JACO - WHITE 1/2" MNPT x 1/2" TUBE 90° ELL
20	VALVE PLATE ASSEMBLY	79664	2	SOLENOID (ASCO 8212A519S0100F1)
21	INLET MANIFOLD ASSEMBLY	79812	1	LINE STRAINER ASSEMBLY
22	INLET MANIFOLD ASSEMBLY	79814	2	JACO WHITE CONNECTOR 1/2" MNPT x 1/2" TUBE
23	INLET MANIFOLD ASSEMBLY	76255	1	PVC THREADED NIPPLE - 1/2" NPT X 2"
24	INLET MANIFOLD ASSEMBLY	71627	1	MF BALL VALVE
24	INSTALLATION KIT	71627	1	MF BALL VALVE
25	INSTALLATION KIT	71548	2	1-1/2" x 12" PVC THREADED NIPPLE
26	INLET MANIFOLD ASSEMBLY	71912	1	1/2" NPT TEE
27	SPRAY MANIFOLD ASSEMBLY	79644	1	SPRAY MANIFOLD
28	SPRAY MANIFOLD ASSEMBLY	71617	3	422.406.5E.BC NOZZLE

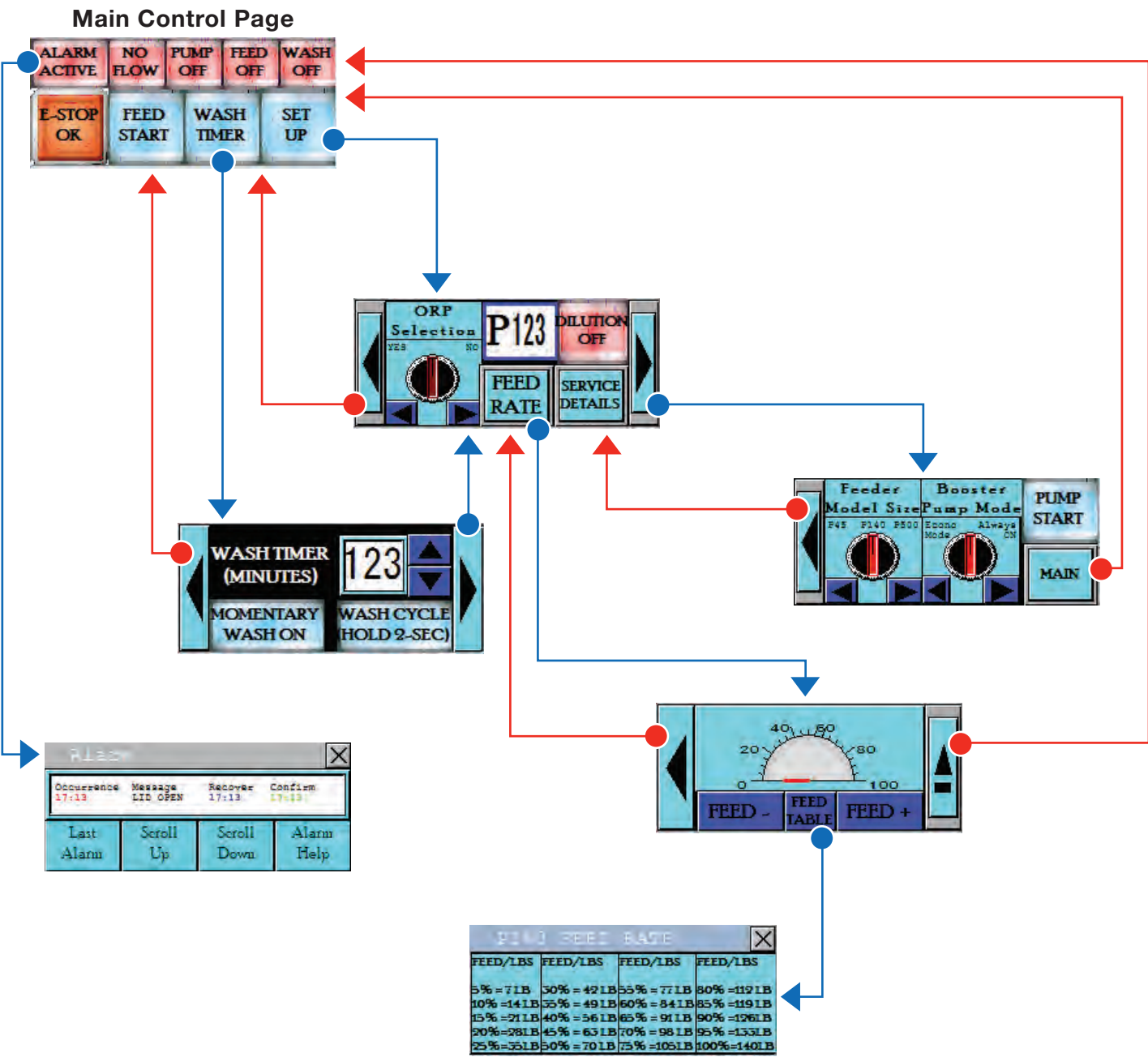
Pulsar® 140 Feeder: Diagram Descriptions

Diagram Number	Location	Part Number	Qty/ Unit	Description
29	WASH MANIFOLD ASSEMBLY	79649	1	WASH MANIFOLD
30	WASH MANIFOLD ASSEMBLY	79660	1	AGITATION NOZZLE
31	WASH MANIFOLD ASSEMBLY	79666	1	WASH-DOWN NOZZLE (460.644)
32	CONTROL BOX	79816	1	HMI CONTROL BOX WITH IDEC PLC
33	INSTALLATION KIT	71811	1	VENTURI (MAZZEI 1585X)
34	INSTALLATION KIT	71588	1	P8FC8
35	INSTALLATION KIT	79214	1	BOOSTER PUMP
36	HOPPER ASSEMBLY	79654	1	GRID SUPPORT
37	MOLDED BASE ASSEMBLY	79635	1	SHIELD 79656
38	BASE ADD ON'S (Features)	79688	1	LID SAFETY SWITCH (INCLUDED WITH 79616)
39	BASE ADD ON'S (Features)	79689	1	SAFETY OVERFLOW SWITCH (INCLUDED WITH 79616)

NOT SHOWN IN DIAGRAMS

N/A	INSTALLATION KIT	71626	1	20' 1/2"OD LDPE TUBING
N/A	MOLDED BASE ASSEMBLY	HD/Local	6	MOUNT CABLE TIE
N/A	MOLDED BASE ASSEMBLY	HD/Local	6	CABLE TIE
N/A	BASE DRAIN ASSEMBLY	HD/Local	1	3/4" PVC HEX PLUG
N/A	BASE DRAIN ASSEMBLY	79621	1	INLET DRAIN SIPHON ASSEM
N/A	VALVE PLATE ASSEMBLY	HD/Local	1	1/2" OD LDPE TUBING 24" LONG
N/A	VALVE PLATE ASSEMBLY	HD/Local	1	1/2" OD LDPE TUBING 18" LONG
N/A	MISCELLANEOUS		1	MANUALS
N/A	MISCELLANEOUS		1	WARRANTY CARD

PLC Menu Map



Warranty Policy

Pulsar® 140 Commercial Pool Chlorinator

Arch Chemicals, Inc. (“Arch”) warrants equipment (excluding electrical components) of its manufacture and bearing its identification to be free of defects in workmanship and material. Arch’s liability under this warranty extends for a period of two (2) years from the date of installation as performed by an Authorized Commercial Dealer Representative and registered with Arch Water Chemicals via the Arch Commercial Chlorinator Warranty Registration Card. Systems for which there is no Warranty Registration Card on file carry no warranty of any kind, expressed or implied.

In addition, each system is covered by a sixty (60) -day, 100% buy-back guarantee. If the original purchaser (“owner”) is dissatisfied with the **Pulsar® 140 Commercial Pool Chlorinator** performance for any reason, they can return it to the Authorized Commercial Pool Dealer for a full refund. The equipment must have received normal use and care, and Arch must be notified in writing before the sixty (60) days have expired. There is no reimbursement for chemicals used during the sixty (60) -days.

Arch disclaims all liability for damage during transportation, for consequential damage of whatever nature, for damage due to handling, installation or improper operation, and for determined suitability for the use intended by purchaser (“owner”). Arch make no warranties, either expressed or implied, other than those stated above. No Arch Representative or Authorized Commercial Dealer Representative has authority to change or modify this warranty in any respect.

Pulsar® 140 Parts

Arch warrants equipment parts of its manufacture and bearing its identification to be free of defects in workmanship and material. Arch’s liability under this warranty extends for a period of ninety (90) days from the date of installation as performed by an Authorized Commercial Dealer Representative. This warranty is restricted to **Pulsar® 140 Chlorinator** parts purchased on a replacement basis.

Arch Chemicals Inc.

1-800-4 PULSAR

1-800-478-5727

Lonza

1200 Lower River Road, P.O. Box 800
Charleston, TN 37310-0800



Lonza Emergency Action Network (LEAN)

The Lonza Emergency Action Network ("LEAN") is Lonza's emergency action system. Call the LEAN system at 1-800-654-6911 in North America, and at (Country Code for the United States) 423-780-2970 elsewhere in the world. The LEAN system is available 24 hours a day, 7 days a week for assistance with spills, injuries and emergencies of any kind. It uses computers and other systems to make Lonza's environmental, technical transportation, toxicological and other expertise about its products readily available to anyone needing assistance. The LEAN system also includes emergency response teams capable of providing on-site support throughout North America.

(800) 654-6911

(From outside North America, call after the country code for the US, 423-780-2970)

Additionally, in the event of an emergency, CHEMTREC (Chemical Transportation Emergency Center) should be contacted. CHEMTREC is a national center established by the Chemical Manufacturers Association (CMA) in Washington, DC, to relay pertinent emergency information concerning specific chemicals on request.

CHEMTREC has a 24-hour toll-free telephone number (800) 424-9300, intended primarily for use by those who respond to chemical transportation emergencies. CHEMTREC may also be accessed through the CMA website at www.cmahq.com.

Material Safety Data Sheets (MSDS) can be obtained by contacting (800)-511-MSDS.

