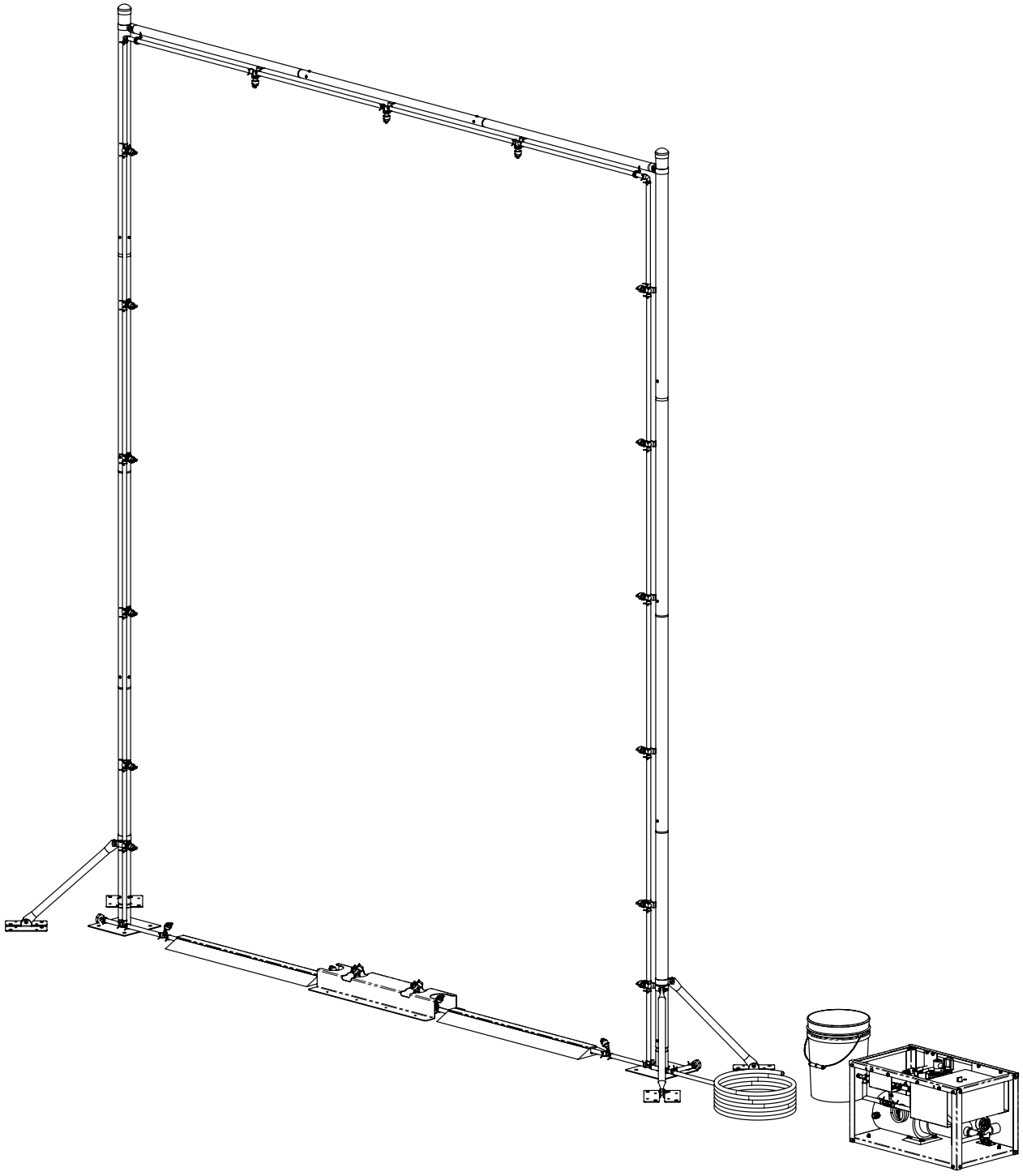
Sentry Plus™ Drive-Thru Disinfectant Delivery System

Installation and Operation Manual



990321
REV [B]

Page intentionally blank

©2024 Valco Industries, Inc.

Table of Contents

VAL PRODUCTS, INC. WARRANTIES 4
Symbols 4
General Description 5
Introduction 5
Tools Required 5
Wiring Regulations 6
Power Requirements 6
Water Requirements 6
Wind and Weather Advisory 6
Spray Arch 6
Assembly Instructions 7
Support Frame Construction (814375) 7
Support Frame Layout and Dimensions 7
Optional Spray Arch Assembly Instructions 8
Nozzle Line Basic Layout and Orientation 10
Nozzle Line Assembly Instructions 11
Optional Top Kit Option Assembly Instructions (814380) 13
Sentry System Pump Overview and Installation 14
Optional Spray Wand Installation (814365) 14
Control and Wiring 15
General Wiring Instructions 15
Electro Optical Sensor Installation, Setup, and Adjustment 16
Timer Setup 19
First Time Start-Up Procedure 20
Chemical Injection Information 20
Safety Considerations 20
Maintenance 21
Troubleshooting Guide 21
Factory Wiring 22
Inlet Pressure Switch and Solenoid Valve Wiring 22
Replacement Parts Drawing and Parts List 24
Nozzle Replacement Parts Drawing and Parts List 25
Sentry Pump System Replacement Parts Drawing 26
Sentry Pump System Replacement Parts List 27
Spray Arch Option Parts Drawing and Parts List (814375) 28
Top Kit Option Parts Drawing and Parts List (814380) 29
Spray Wand Attachment Option Parts Drawing and Parts List (814365) 29
Control Replacement Parts Drawing and Parts List 30
Customer Service 31

©2024 Valco Industries, Inc.

VAL PRODUCTS, INC. WARRANTIES

For Warranty claims information, please see the “Manufactured Products Standard Warranty” form QMS101 available from Val Products, Inc. by:

- Phone: 1-800-998-2526
- Email: marcom@val-co.com
- Online: http://val-co.it/warranty

Conditions and Limitations:

- Products and Systems involved in a warranty claim under the “Manufactured Products Standard Warranty” shall have been properly installed, maintained and operated under competent supervision, according to the instructions provided by Val Products, Inc.
- Malfunction or failure resulting from misuse, abuse, negligence, alteration, accident or lack of proper installation or maintenance shall not be considered a defect under the Warranty.

Symbols

Our concern is for your safety. The safety warnings are included in this manual as a guide to help and encourage the safe operation of your equipment. It is your responsibility to evaluate the hazards of each operation and implement the safest method of protecting yourself as owner and/or operator.

= NOTICE - Important information. Be sure to read.

= WARNING - The safety alert symbol is used on warning signs that describe the importance of a feature or explain a step that one should pay close attention to avoid problems or personal injury.

©2024 Valco Industries, Inc.

General Description

This manual contains information and instructions essential to the safe installation and use of the Sentry Plus Drive-Thru Disinfectant Delivery System. This manual should be read thoroughly before attempting any installation or use of the system. Keep this manual in a location that it can be readily accessible. Failure to read the manual and its safety instructions constitutes misuse of the product.

Correct Use of Your Sentry Plus Drive-Thru Disinfectant Delivery System:

1. The system is designed solely for the purpose of applying disinfectant on vehicles entering and exiting a site. Use of the system in any other way is a misuse of the equipment and may endanger yours or another person's safety and health.
2. This is a Disinfectant Delivery System and not intended to be used as a car wash; it does not guarantee that vehicles will be clean after going through the system.
3. In the installation and use of the system, only genuine Valco parts are to be used. Use of other non-genuine parts is a misuse and may lead to unexpected results.

Introduction

The Sentry Plus Drive-Thru Disinfectant Delivery System is shipped partially unassembled and requires assembly.

Please check your shipment for correct parts and condition.

- Read all safety information, instructions and illustrations before starting assembly. Please review the complete assembly manual before starting and be sure to check your shipment with the packing list for any shortages. Please report shortages promptly.
- Metric measurements are shown in parenthesis throughout the manual. Example: 13" (330mm)

Tools Required

- *Flat Head Screwdriver*
- *Channel Lock (or Spring Clamp) Pliers*
- *Adjustable Wrench*
- *Wire Cutters*
- *Socket Wrench with 1/2" (Deep), 3/8", 1/4" Sockets*
- *Impact Driver with 3/8" Hex Driver*
- *Teflon Tape*
- *Pipe Dope*

Screw Driver

Channel Lock Pliers

Adjustable Wrench

Wire Cutters

Socket Set

Impact Driver

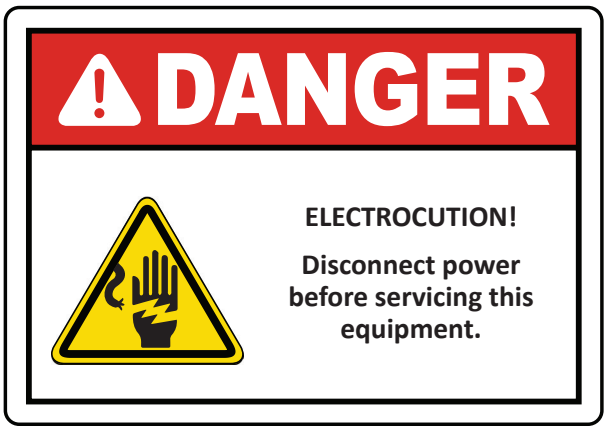
Teflon Tape

Pipe Dope

©2024 Valco Industries, Inc.

Wiring Regulations *(Diagram included with motor)*

Be sure power is "OFF" before doing any wiring. All wiring shall be installed in accordance with national, state and local electrical codes. For electrical connection requirements, refer to diagram on the motor nameplate or the enclosed wiring diagram. A circuit breaker switch or slow blow motor type fuse must be used. Specifications are subject to change without notice.



Power Requirements

Power Requirements				
Part Number	**Voltage**	**Frequency**	**Phase**	**Motor Full Load Current**
814215	230 V	60 Hz	1 PH	12.4 / 6.2 Amps

Water Requirements

- 10 gpm @ 10 psi minimum / 55 psi maximum.

Wind and Weather Advisory

- Water supply, pump system & spray arch must be protected if system is operated in below freezing temperatures.
- A heated room is recommended for water supply & pump system, and heat tape is recommended for the spray arch.

Spray Arch

- If spray arch is installed in an area with high winds, a wind protection wall should be constructed to maintain spray pattern.
- A support frame with inner dimensions of 144" (3658mm) wide X 180" (4572mm) tall must be constructed to mount the spray arch if frame kit 814375 is not purchased.

©2024 Valco Industries, Inc.

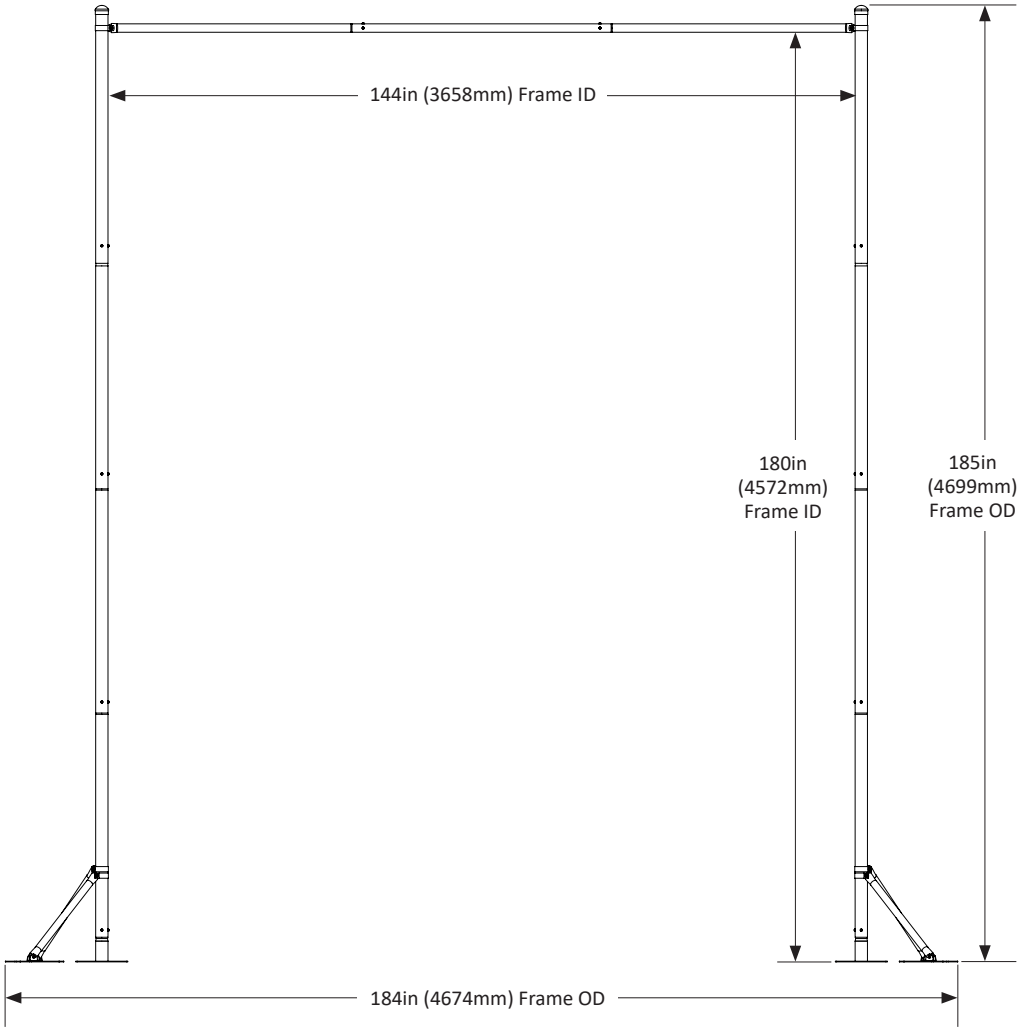
Assembly Instructions

Support Frame Construction (814375)

The support frame is sold as a separate kit (814375) for the Sentry Plus System. The support frame should be installed on a concrete pad with the support plates held down by concrete anchors. Consult a structural engineer and ensure all local codes are being met.

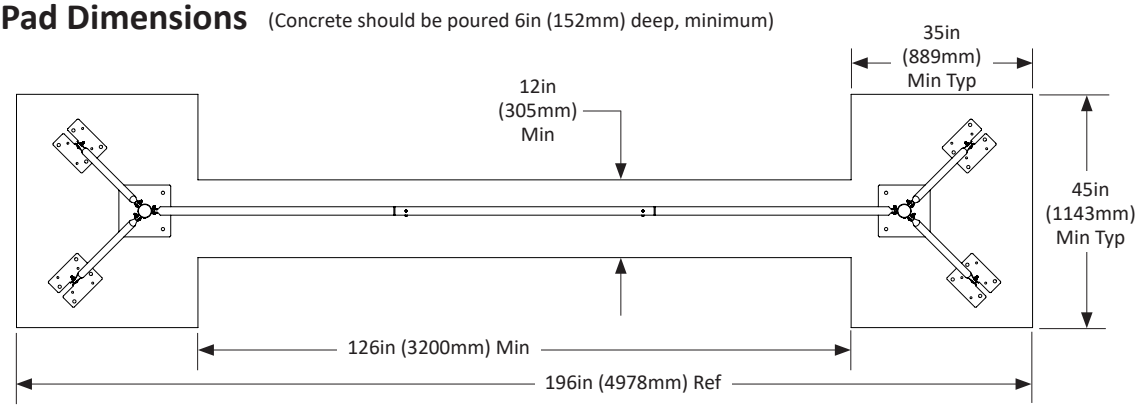
Support Frame Layout and Dimensions

Figure 1
(Front View)



Concrete Pad Dimensions (Concrete should be poured 6in (152mm) deep, minimum)

Figure 2
(Top View)



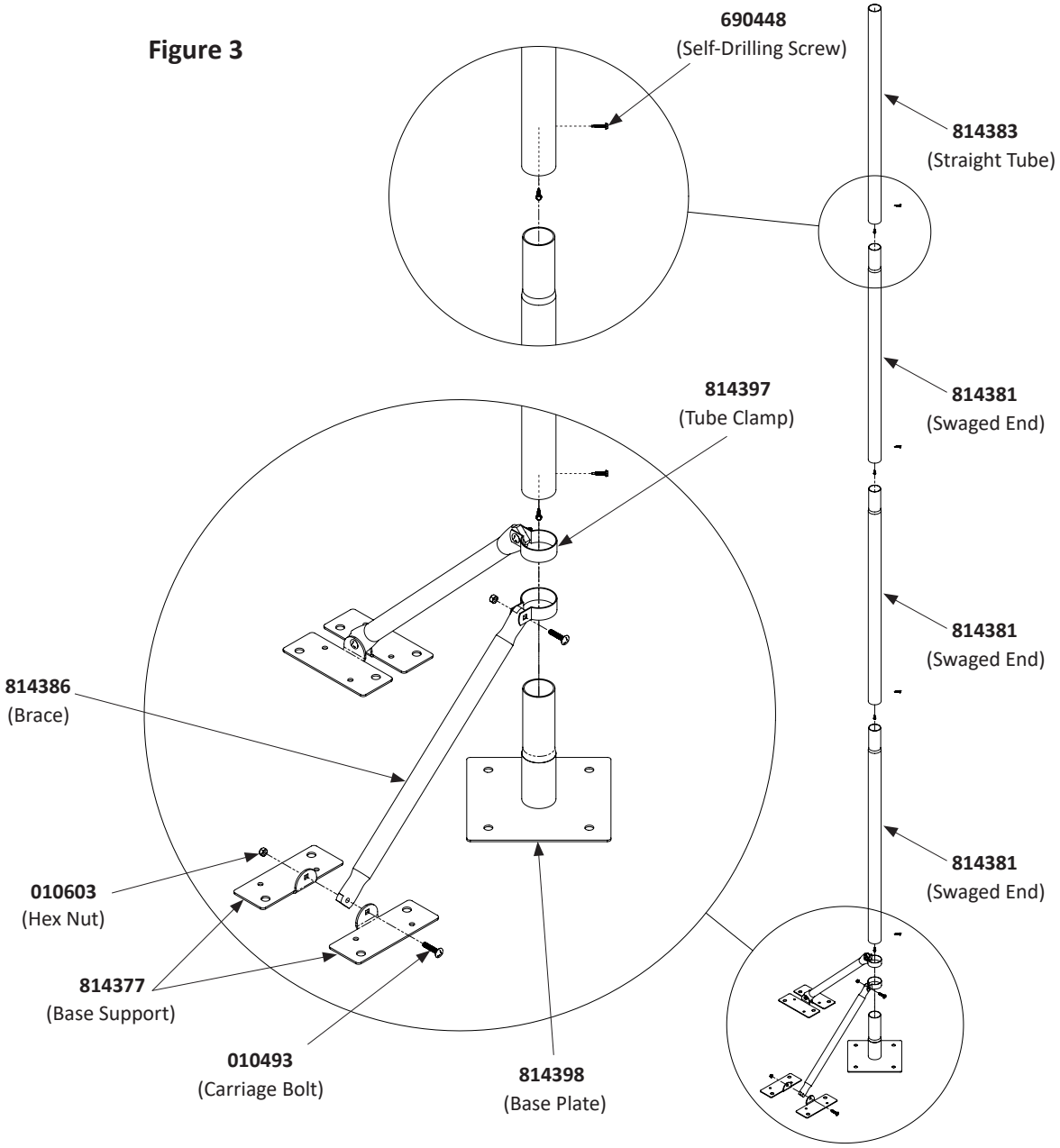
©2024 Valco Industries, Inc.

Optional Spray Arch Assembly Instructions

The frame is easier to assemble on the ground and then stood up, to be anchored afterwards.

1. Begin assembly at the base of the frame with a base plate (814398). Slide (2) tube clamps (814397) onto the non-swaged bottom end of a vertical tube (814381), then slide the vertical tube onto the base plate.
2. Install (2) base supports (814377) onto each brace (814386) using (1) carriage bolt (010493) and (1) hex nut (010603) per brace, as shown in detail view of Figure 3. Then attach the other end of the brace to the tube clamps (814397), using the same hardware. Bottom clamp should be approximately 16” (406mm) from the bottom. Do not tighten until the frame is fully assembled and upright.
3. Install (2) more swaged ends (814381) onto the first tube and then install (1) straight tube 814383 on the top. All connections between swaged ends and straight tubes should be made with (2) self-drilling screws (690448) oriented 90 degrees away from each other, as shown in detail view of Figure 3.
4. Repeat this procedure for the other vertical side.

Figure 3

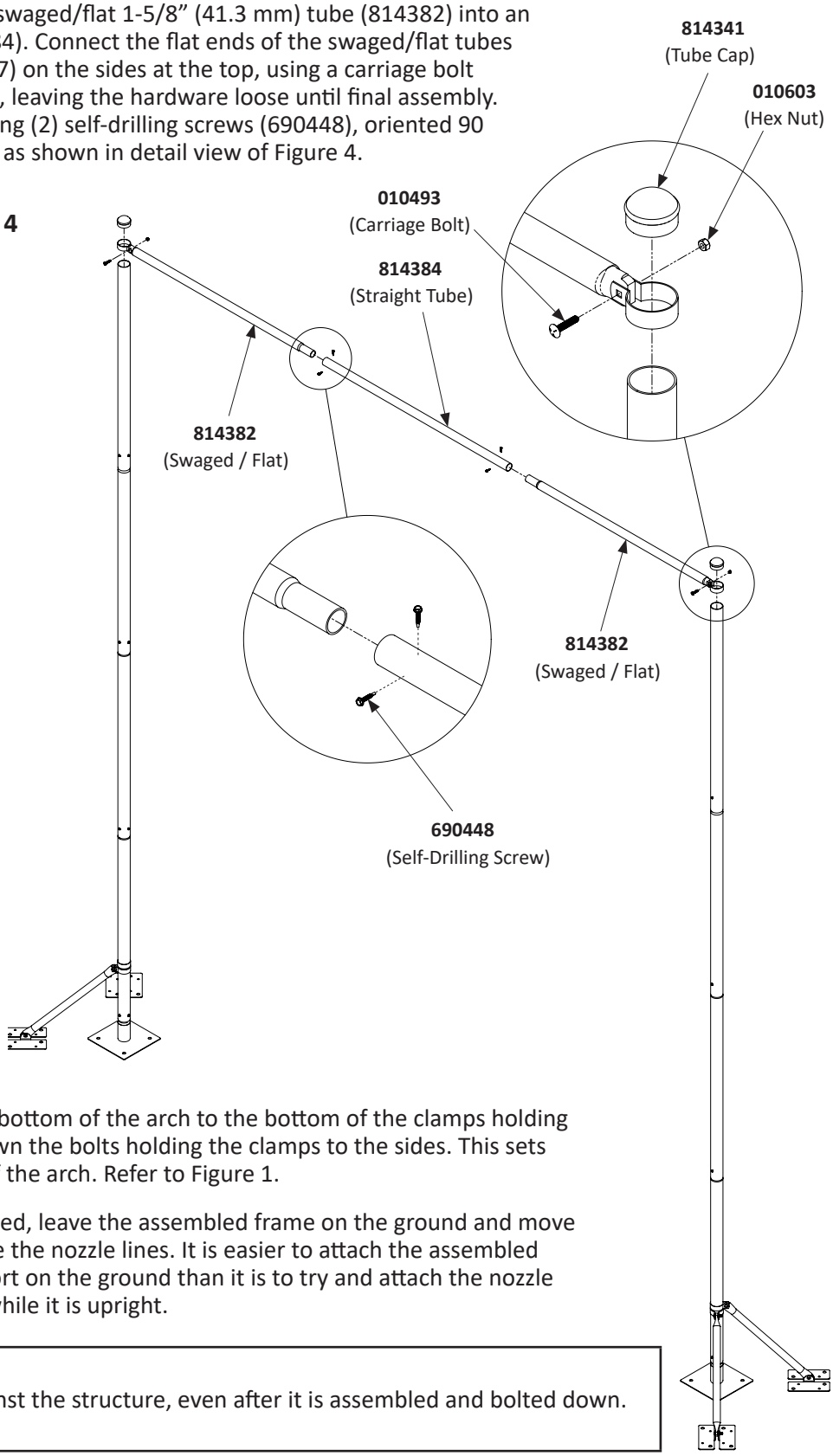


©2024 Valco Industries, Inc.

5. To install the top section, slide a tube clamp (814397) onto the top of each straight tube (814383) and insert a tube cap (814341) into the top of each straight tube. Refer to detail view of Figure 4.

6. Slide the swaged ends of each swaged/flat 1-5/8" (41.3 mm) tube (814382) into an end of the straight tube (814384). Connect the flat ends of the swaged/flat tubes (814382) to the clamps (814397) on the sides at the top, using a carriage bolt (010493) and hex nut (010603), leaving the hardware loose until final assembly. Connect the tubes together using (2) self-drilling screws (690448), oriented 90 degrees away from each other, as shown in detail view of Figure 4.

Figure 4



7. Measure 15' (4.57m) from the bottom of the arch to the bottom of the clamps holding the top section and tighten down the bolts holding the clamps to the sides. This sets the height of the top section of the arch. Refer to Figure 1.

8. After the frame is fully assembled, leave the assembled frame on the ground and move on to the next step to assemble the nozzle lines. It is easier to attach the assembled nozzle lines to the frame support on the ground than it is to try and attach the nozzle lines to the assembled frame while it is upright.

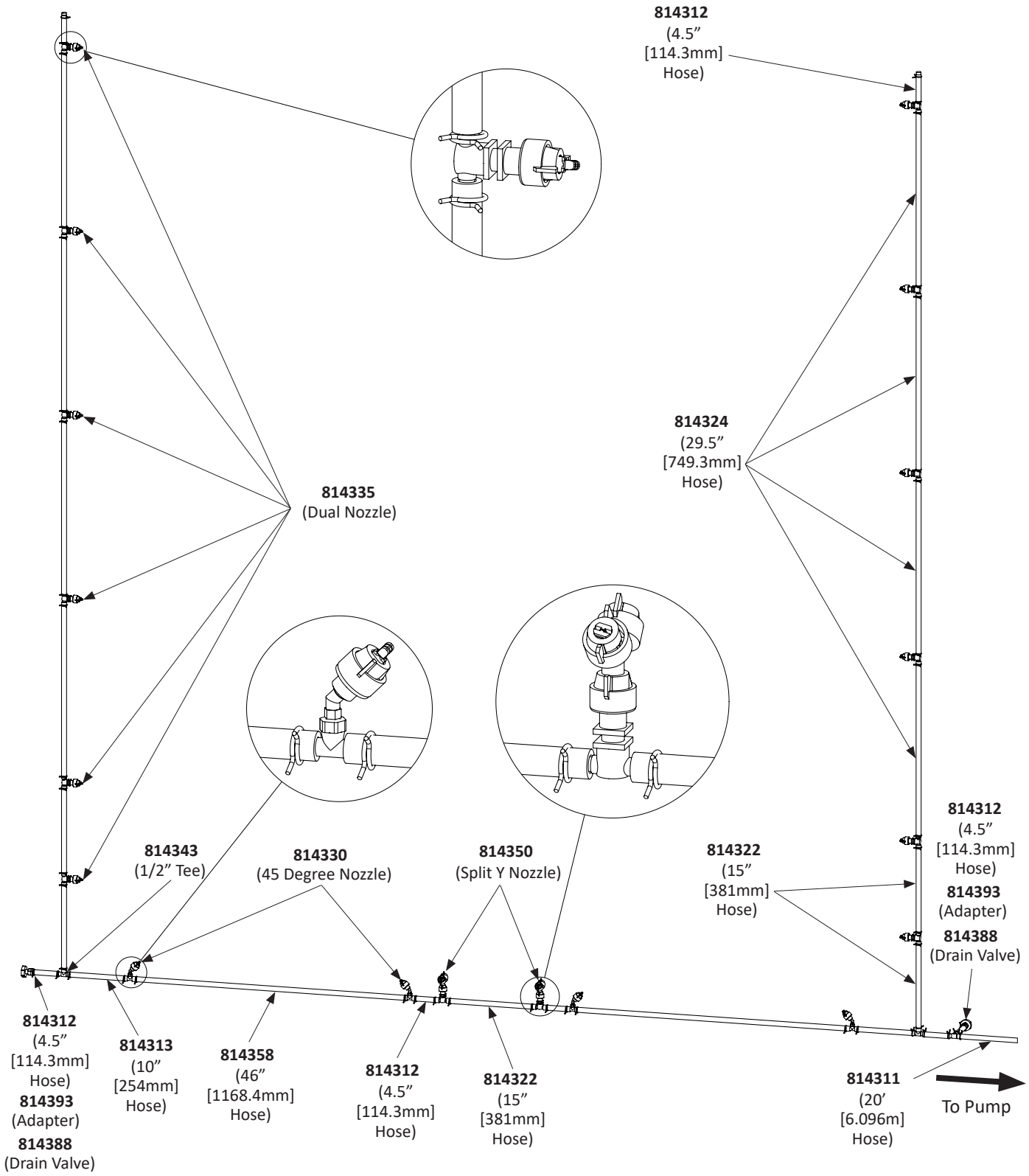
⚠	Never lean a ladder against the structure, even after it is assembled and bolted down.

©2024 Valco Industries, Inc.

Nozzle Line Basic Layout and Orientation

- Nozzle lines are assembled parallel to the frame, with all the nozzles spraying inward towards each other.
- Nozzle lines are symmetrical. All hoses and nozzles are mirrored from one side to the other.
- Refer to Figure 5 for proper location of nozzles, fittings, and hose lengths.

Figure 5



©2024 Valco Industries, Inc.

Nozzle Line Assembly Instructions

1. Assemble nozzle lines by attaching hoses to nozzles using spring clamps (814326), as shown in Figure 6. Refer to Figure 5 for proper layout of spray arch. If not installing the optional top kit, plug the (2) ends of the vertical sections using the barbed plug (814333), as shown in Figure 7. If installing the top kit, omit the last 4.5" hose section (814312) and refer to the section on installing the top kit, on page 13.

2. Assemble the bottom nozzle lines as shown in Figure 8 (drain valve) and Figure 9 (to pump and drain valve). Use the spring clamps (814326) to attach the hoses to PVC tees (814343) at the bottom corners and adapters (814393) at the ends. Assemble drain valves (814388) to adapters using PVC pipe dope at the ends of the drain valve lines, but leave drain valves off until after the system has been flushed during initial start up. See First Time Start-Up Procedure for more information.

Figure 6

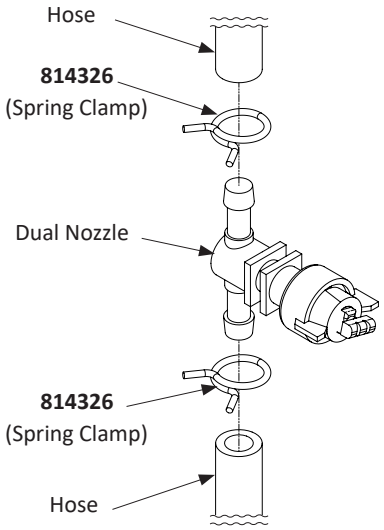


Figure 7

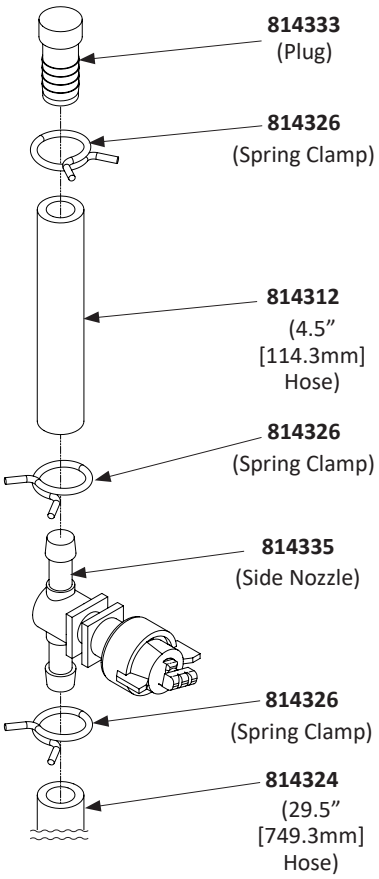


Figure 8

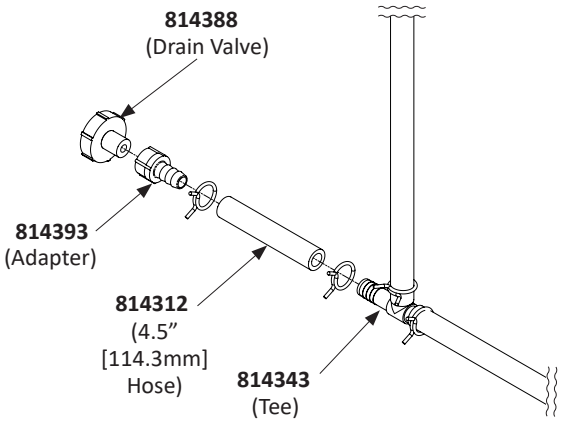
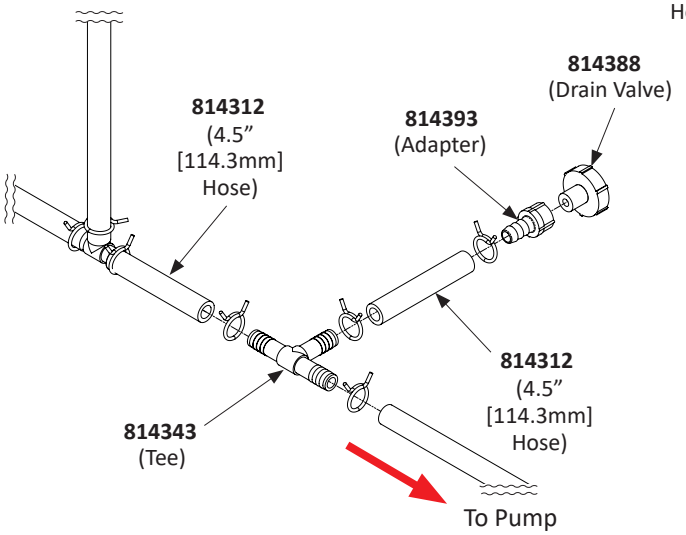


Figure 9



Drain valve chemical runoff must meet local, state, and federal regulations.

3. After nozzle lines have been assembled, attach brackets to nozzles by sliding them into the groove provided, with the bracket having a hole (814357) on top of the bracket that has a slot (814356), as shown in Figure 10. Pre-punched holes locate the self-drilling screws that attach the nozzle line to the spray arch frame. Figure 6 shows one side (left) of the vertical line; the remaining brackets should be flipped 180° for the other side (right) so that the nozzles are oriented the same on the other side. 814357 still assembles on top of 814356, but will now be inserted from above, rather than below, as shown in Figure 10.

©2024 Valco Industries, Inc.

4. Once the nozzle lines are assembled with mounting brackets in place, attach the brackets to the frame using self-drilling screws (690448), as shown in the detail view of Figure 11.

   NOTE: The bottom nozzle line **must** be flush with the ground. To avoid any chance that the bottom (horizontal) nozzle line does not rest flush on the ground, start attaching brackets from the bottom corners of the arch and work up towards the top. Ensure that the hose between each bracket does not have slack in it when fastening the bracket to the arch with screws.

5. After the nozzle lines have been attached to the frame, have (2) people stand the frame upright into its mounting position. Tighten the clamps for the side braces (814386) down after orienting them 90° away from each other, as shown in Figure 11, then secure all base plates and base supports to the poured concrete pad with 1/2” concrete anchors or similar fasteners (not supplied).

Figure 10

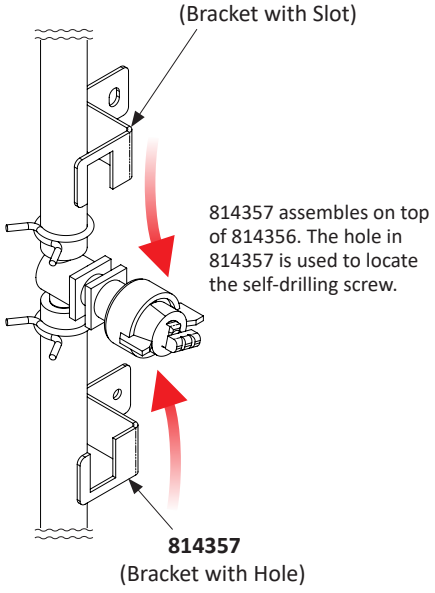
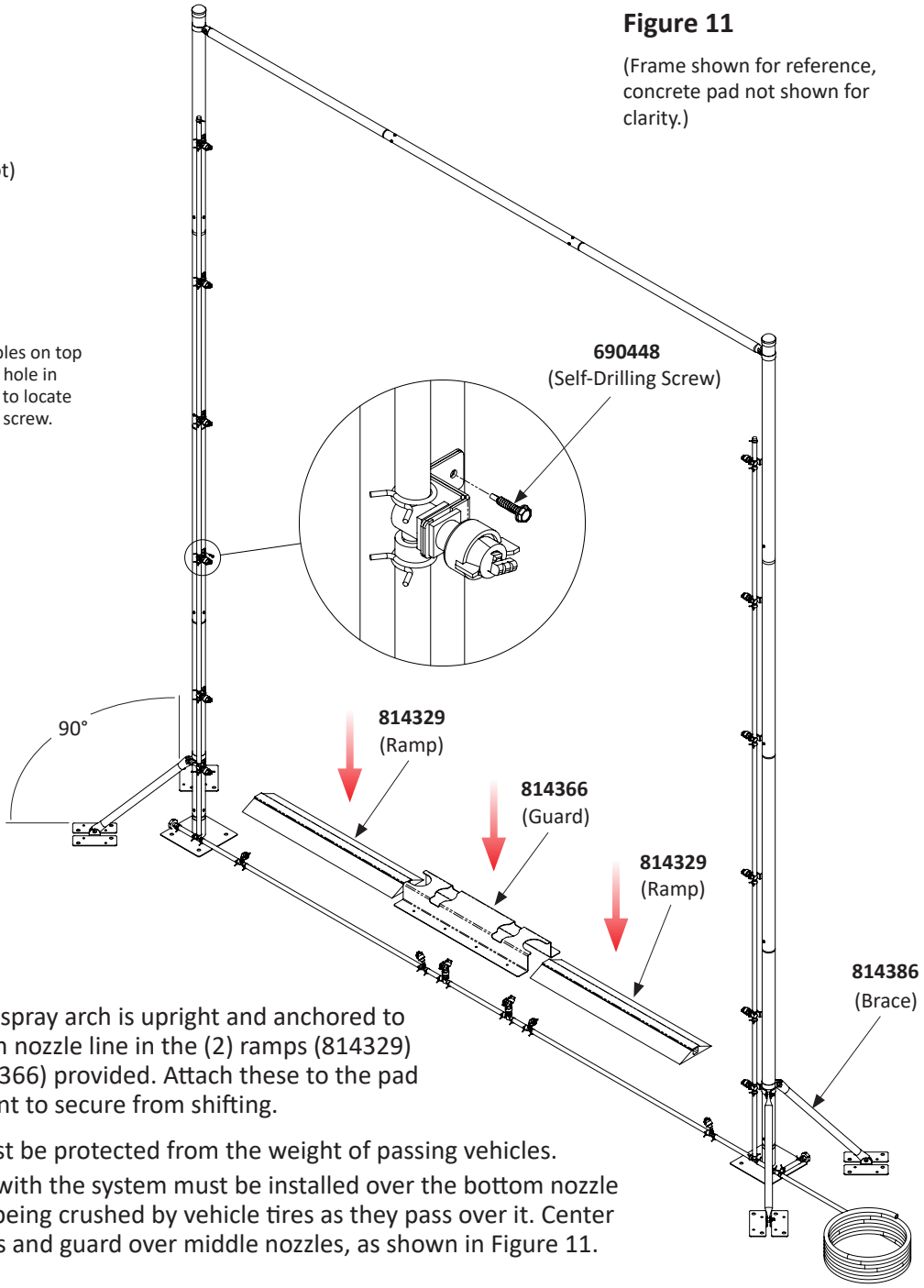


Figure 11

(Frame shown for reference, concrete pad not shown for clarity.)



6. Once the fully assembled spray arch is upright and anchored to the pad, insert the bottom nozzle line in the (2) ramps (814329) and under the guard (814366) provided. Attach these to the pad using tapcons or equivalent to secure from shifting.

   - Bottom nozzle line must be protected from the weight of passing vehicles.
   - Protective ramps sent with the system must be installed over the bottom nozzle line to protect it from being crushed by vehicle tires as they pass over it. Center ramps between nozzles and guard over middle nozzles, as shown in Figure 11.

©2024 Valco Industries, Inc.

Optional Top Kit Option Assembly Instructions (814380)

1. Assemble top kit nozzle lines the same way as the vertical nozzle lines, by attaching hoses to nozzles using spring clamps (814326), as shown in Figure 12. Use (4) 35” hoses (814337) and (3) dual nozzles to complete the horizontal section and (2) 19” hoses (814323) with (2) elbows (814389) to attach the top kit section to the existing vertical nozzle lines, as shown in Figure 13.

2. Once the nozzle lines have been assembled, attach brackets to nozzles by sliding them into the groove provided, with the bracket having a hole (814357) on top of the bracket that has a slot (814356), as shown in Figure 12. Reinforce the corners of the top kit by installing (1) pipe clamp close to the elbow on each end with self-drilling screws, as shown in detail view of Figure 13.

Figure 12

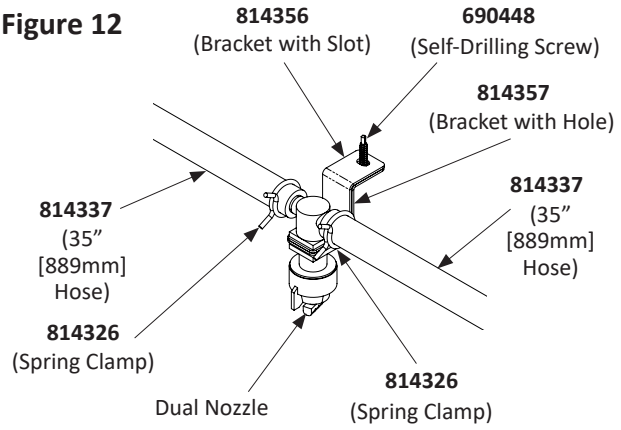
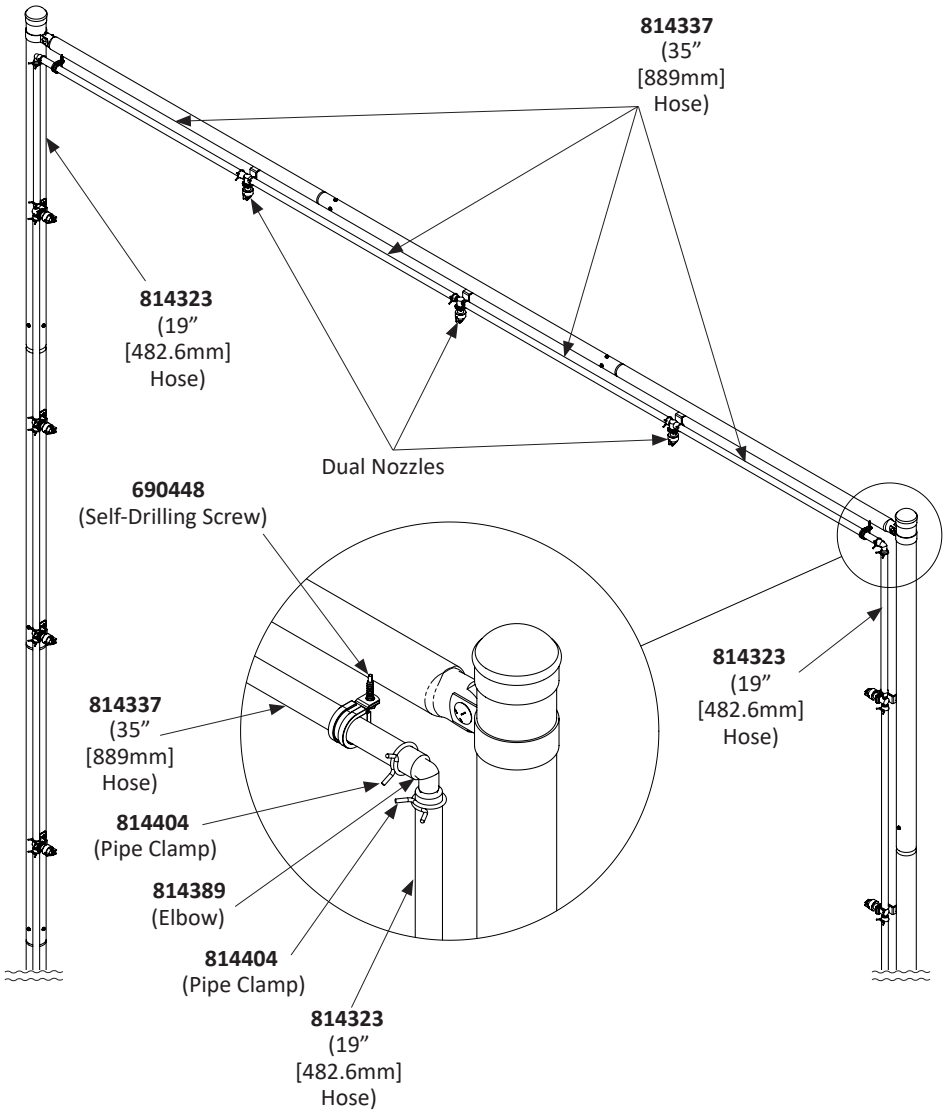


Figure 13

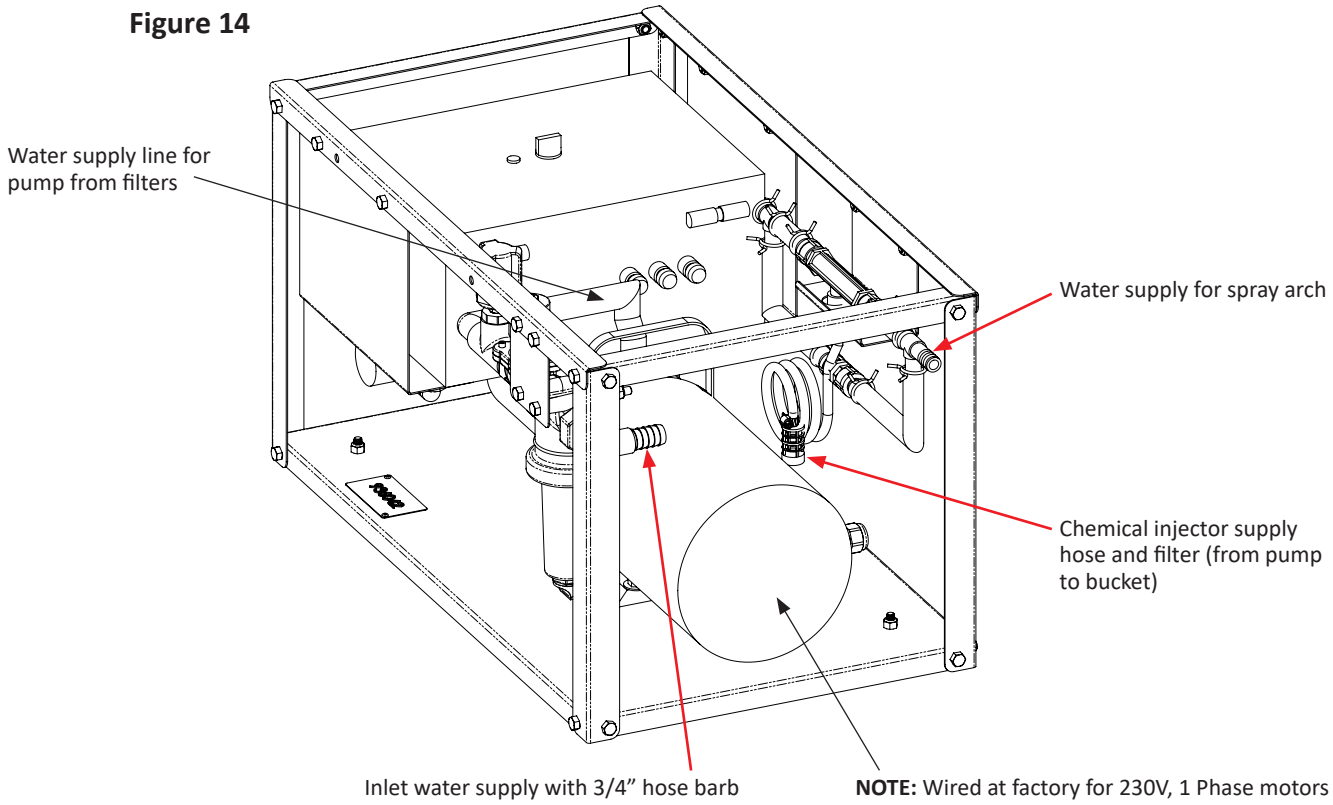


©2024 Valco Industries, Inc.

Sentry System Pump Overview and Installation

- Connect 3/4” supply line hose to 3/4” hose barb using 3/4” hose clamp (not provided).
- Connect outgoing hose from pump to spray arch using supplied spring clamp and 20’ (6.096m) hose section.
- Drill 3/8” (9.5mm) hole in top of supplied bucket lid to insert chemical injector supply hose and filter.

Figure 14



Optional Spray Wand Installation (814365)

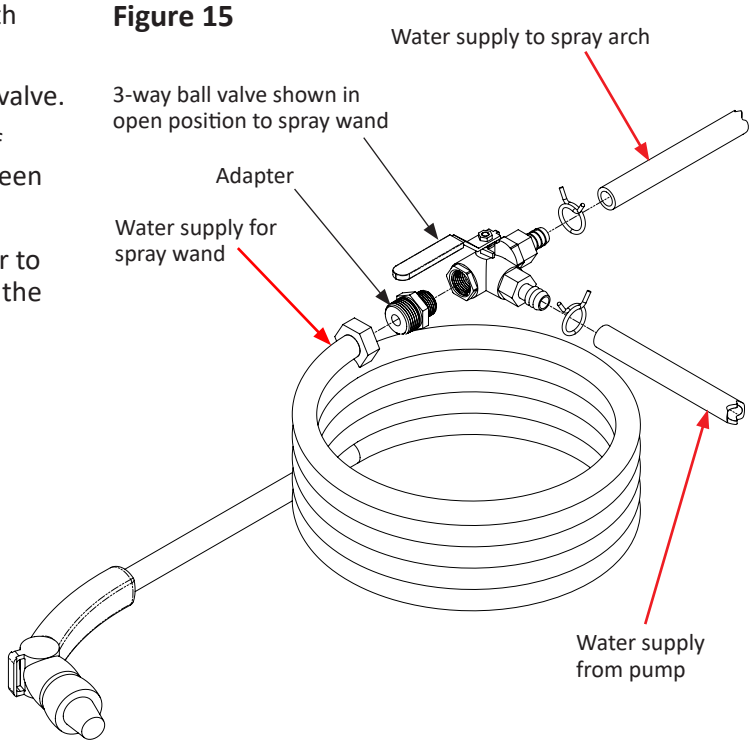
Cut hose from pump to spray arch to convenient length and assemble components as shown in Figure 15.

NOTE: Use teflon tape to connect barb fittings to ball valve.

Turn handle in the direction you want water to flow. If turned towards the supply, it will split the water between the spray wand and the spray arch.

Figure 15 shows the handle in position to supply water to the spray wand. Rotating it 180 degrees would supply the water to the spray arch instead.

Figure 15



NOTICE

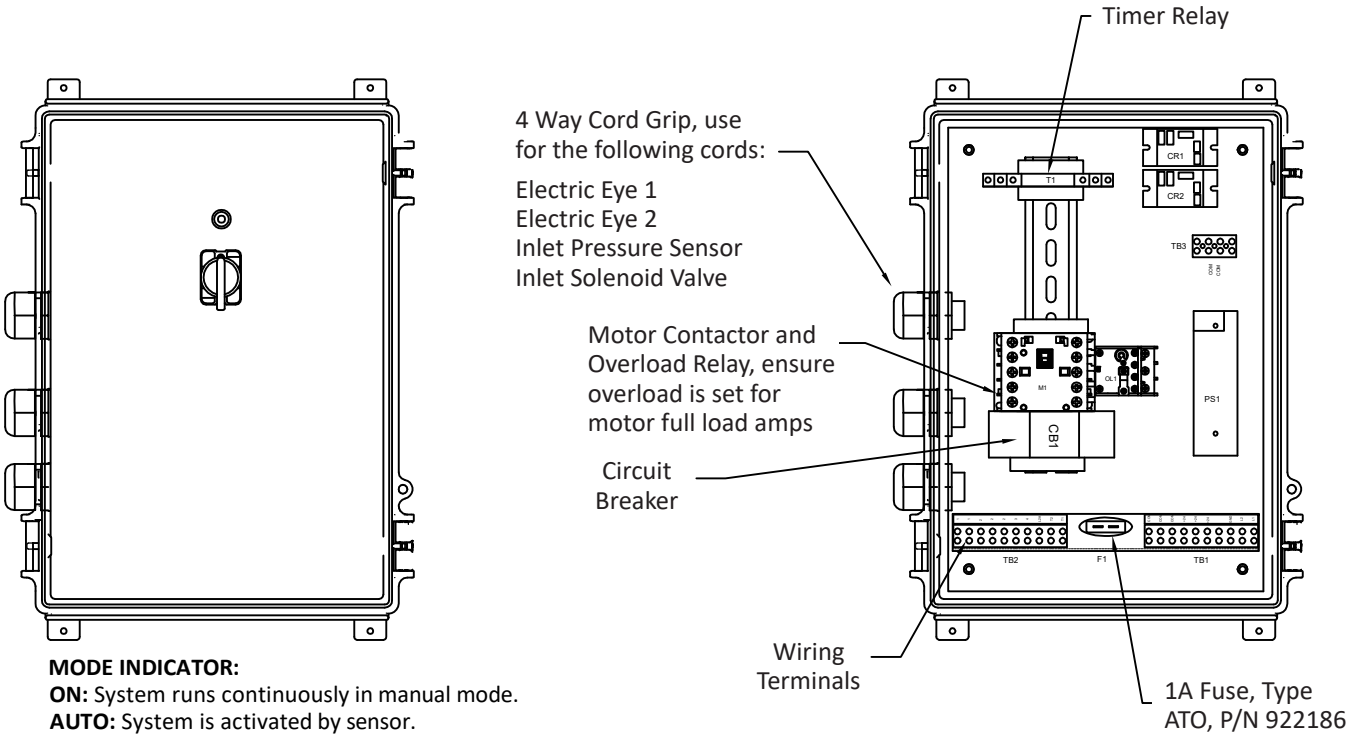
Once the spray wand is installed, set the controller on manual mode and adjust the pressure regulator until water comes out of the pressure relief port. This will protect the pump if the pump is running and the hose is not being used.

©2024 Valco Industries, Inc.

Control and Wiring

Figure 16

(Lid, ON/OFF switch, and Pilot Light hidden)



MODE INDICATOR:
ON: System runs continuously in manual mode.
AUTO: System is activated by sensor.
PILOT LIGHT: Pilot light is on when pump is on.
OFF: System cuts off power to the pump motor.

The control package consists of a control enclosure, two optical sensors, and wiring. Inside the control enclosure you will find:

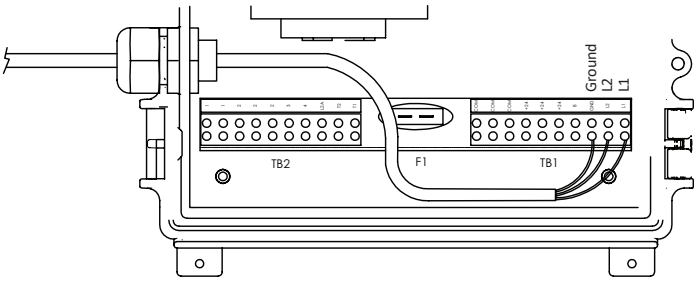
- A circuit breaker (cuts off power in the event of a motor overcurrent fault or a short circuit)
- Terminal blocks
- Fuse Block (Uses automotive blade fuse, ATO style)
- Contactor and overload relay (used to control and protect the pump motor from overloads)
- Timer and control relays
- 24Vdc Power Supply (used for the control logic and sensors)

General Wiring Instructions

The following circuits must be wired to complete the assembly of the Sentry:

Power Mains (240VAC, 20A), wire L1, and L2 and service ground into TB1. Use a cable for the power mains wires that has a circular outer diameter between 0.2 inches and 0.485 inches (5.08mm and 12.32mm); Romex wire is not acceptable as the cable must be circular to ensure a watertight fit. Route the power mains cable through the cord grip to the right side. After terminating the wires and checking to make sure that they are secure, tighten the cord grip nipple hand tight, then use a wrench to tighten another 1/4 turn.

Figure 17



©2024 Valco Industries, Inc.

Electro Optical Sensor Installation, Setup, and Adjustment

Locate sensors on the side of the arch closest to the pump, to trigger vehicle traffic from either direction. Locate reflectors on the opposite side of the arch. Mount the sensors on a post or similar structure that will not wobble. Mount the reflectors at the same height on the opposite side of the arch, so that they are in line with the sensors.

Spacing sensors away from the arch at the recommended distance will give the pump time to pressurize before the vehicle reaches the arch. Sensors and reflectors are mirrored across from each other, so the distances from the arch and their location on their mounting posts should be the same.

Refer to Figure 18 for recommended dimensions to place sensors and reflectors on mounting posts. Refer to Figures 18 and 19 for proper height to locate sensors and reflectors on their mounting posts.

Figure 18
(Top View)

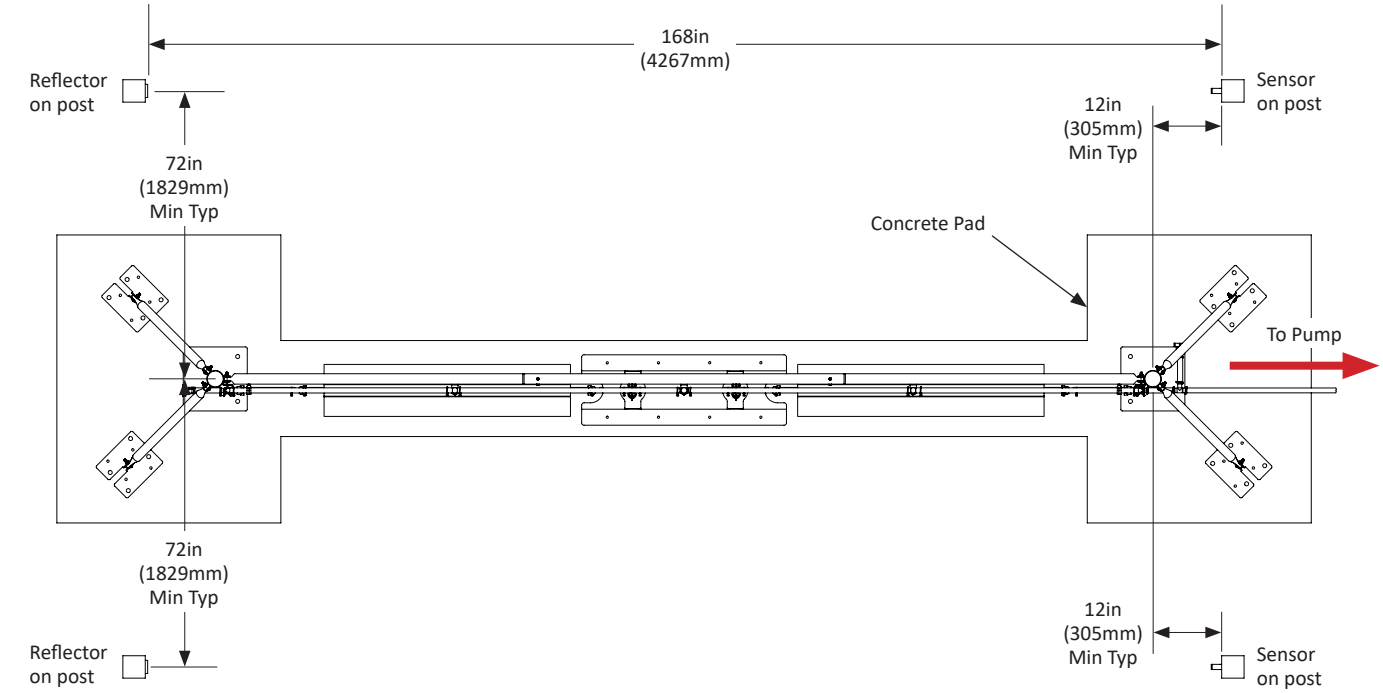
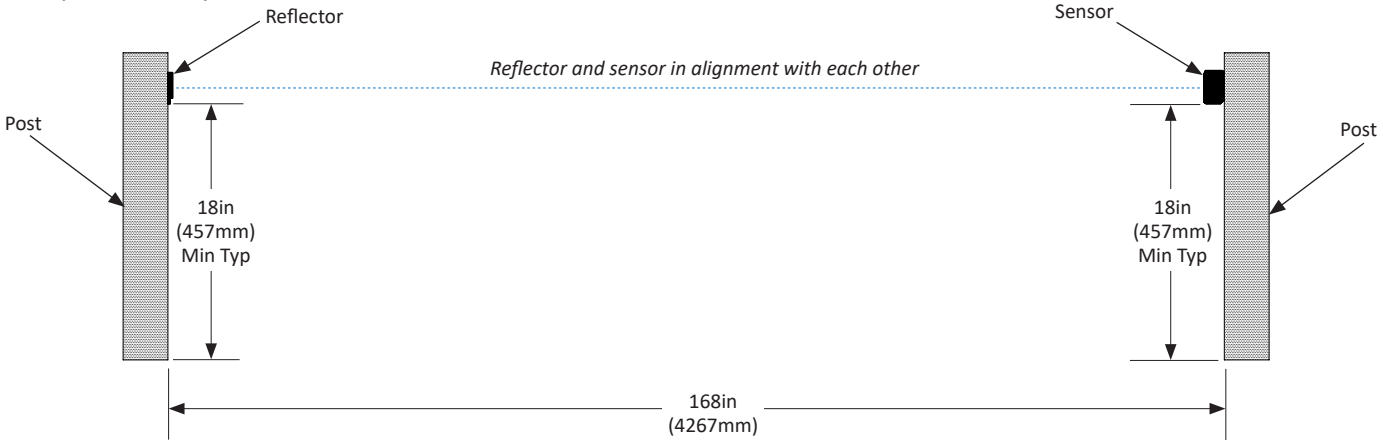
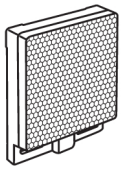


Figure 19
(Front View)

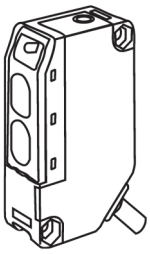


©2024 Valco Industries, Inc.

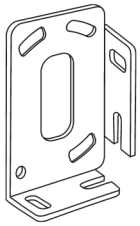
Sensor Parts



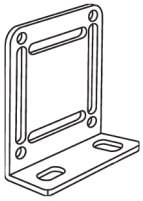
Reflector



Transmitter/Receiver



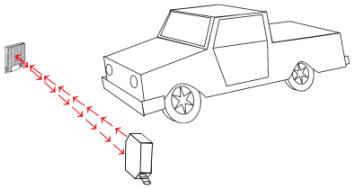
Sensor Mounting Bracket

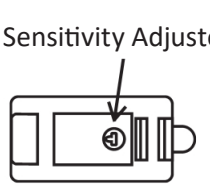


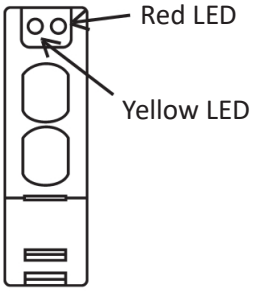
Reflector Mounting Bracket

Two electro optical sensors are provided with the Sentry Plus System, they are intended to be used to detect vehicles entering the spray arch area from either side. Please reference the Vehicle Detection image below:

Vehicle Detection







LED Functions

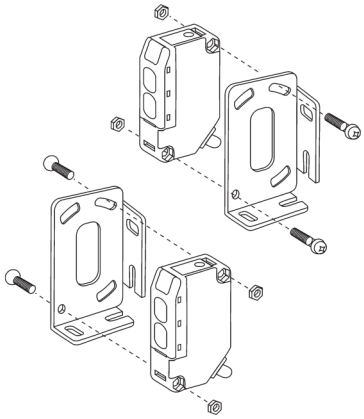
- Red LED - When on, it indicates that the sensor is triggered.
- Yellow LED - When on, it indicates that the sensor is properly aligned with the reflector, and that the sensor is not tripped.

Sensitivity Adjustments

- Minimum Setting - This means that the infrared signal emitted by the sensor is at its minimum sensitivity and that the sensor can be easily triggered by small objects.
- Maximum Setting - This means that the infrared signal emitted by the sensor is at its maximum sensitivity and that the sensor cannot be easily triggered by small objects.

Sensor Installation

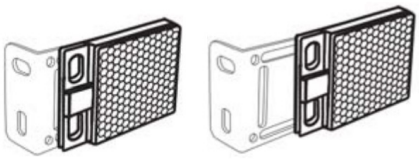
Mounting the Sensor



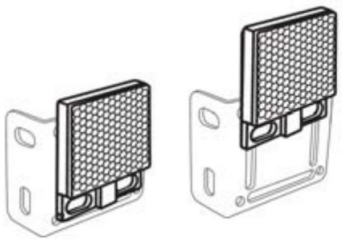
©2024 Valco Industries, Inc.

Mounting the Reflector

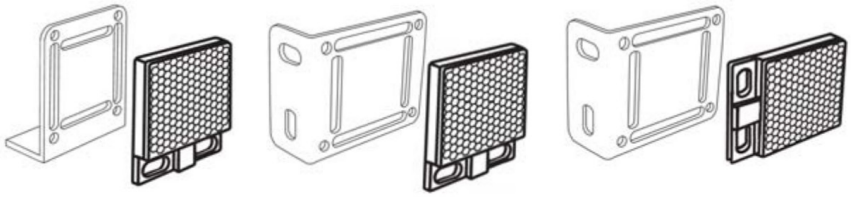
Horizontal Mounting Style



Vertical Mounting Style



Fixed Mounting Style



Installation (perform for both sensors)

1. Mount the reflectors and sensors 18” to 24” (457mm to 610mm) off the ground, so that they face each other.
2. To find the correct alignment, slowly adjust the angles of the sensor and or reflector up and down, left and right until the red LED turns off and the yellow LED turns on. If both LEDs are off, then you have exceeded the range of the sensor (max range is 35 feet), reduce the distance between the reflector and the sensor and try again.

Testing (perform for both sensors)

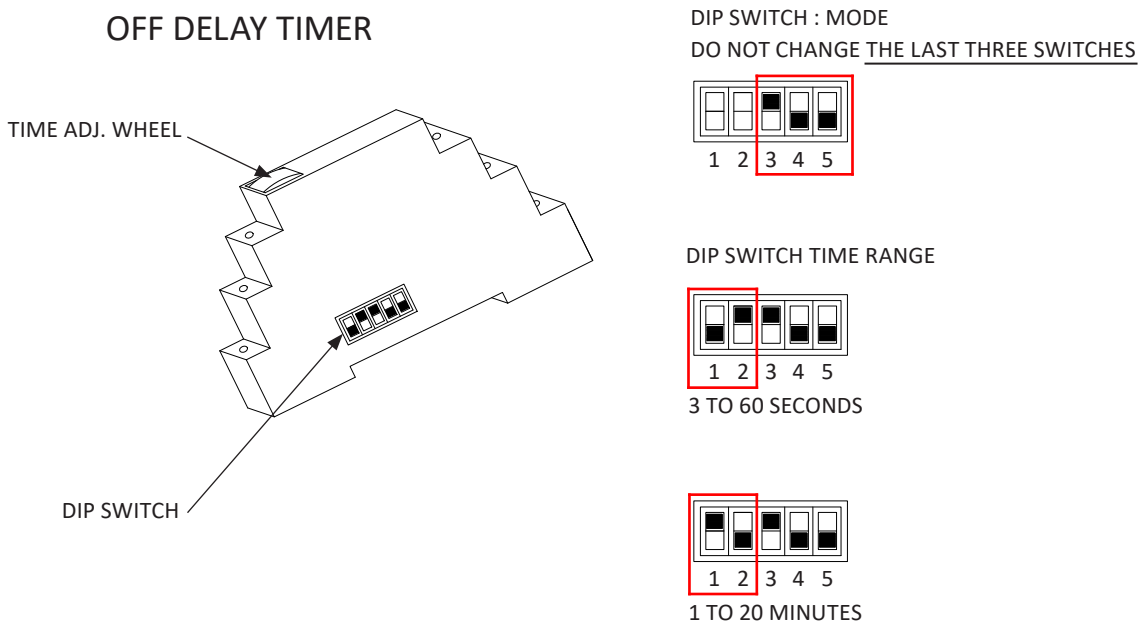
1. Power up the sensor, the yellow LED should be on and the red LED should be off.
2. Pass the vehicle to be detected between the sensor and the reflector. The red LED should turn on and the Yellow LED should turn off. This indicates that the object has been detected. Please note that exceptionally shiny objects passing between the sensor and reflector may not be detected, in this case the sensitivity knob will have to adjusted counterclockwise until the object is detected.

©2024 Valco Industries, Inc.

Timer Setup

Timer Off Delay - sets the amount of time that the system will run after a vehicle has left the sensing area. This time may also be set to allow for long distances between tractor trailer axles.

The timer in the control system is designed to provide an adequate time delay prior to shutting off the disinfectant spray after the target leaves the detection area of the sensor. The factory default setting is approximately 30 seconds, and the range is between 3 to 60 seconds. You can easily change the time between 3 and 60 seconds by adjusting the time wheel as shown in the figure below. Should you need to increase the time scale further than 60 seconds you will need to change the time range via the DIP switch located as shown in the figure below:



If you would prefer to have a longer time delay than 60 seconds, then follow the procedure below:

1. Use a flat blade screwdriver to remove the DIN rail end block on the contactor side of the timer relay.
2. Adjust the first two of the DIP switches (1,2) as shown in the 1 to 20 minutes figure above. In order to accomplish this, it may be necessary to remove the timer relay from the DIN rail, if that is the case, there is a latch located at the bottom left side of the relay, use a small screwdriver or implement to unlatch and release the relay from the DIN rail.
3. After changing the first two switches as shown in the 1 to 20 minute range, replace the timer relay on the DIN rail along with the end block if you removed them to adjust the DIP switch.
4. Adjust the time adjustment wheel at the top of the relay for your desired time delay. Trip the timer by interrupting one of the electric eyes, then measure the time the pump runs. If the time delay is not correct readjust the time wheel, and repeat the procedure, it may take several attempts to obtain the correct time delay.

©2024 Valco Industries, Inc.

First Time Start-Up Procedure

Before the system can be pressurized, the tubing must be flushed out to remove any installation debris.

In accordance with National and Local Electrical Codes, have a Certified Electrician verify and run the power supply to the controller used on the Sentry Plus System. Use a separate circuit breaker/service disconnect.

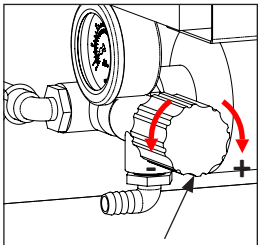
1. DO NOT install any of the automatic drain valve assemblies on the spray arch at this early stage.
2. Turn on water supply to the pump.

The incoming water supply pressure MUST be greater than 10 PSI and MUST NOT exceed 55 PSI. Outlet of pump must be located higher than the drain valves for proper drainage.

3. Wait a second to allow the filter to fill, then turn the controller to ON.
4. Allow the system to flush out where the automatic drain valve(s) are located.
5. At the completion of the flushing procedure, place the controller in the OFF position.
6. Install the automatic drain valve(s).
7. Pressurize the system to verify that all of the fittings and nozzles are secure. If all fittings and nozzles are secure and do not leak, and system pressure does not exceed 130 PSI, skip ahead to step 12 to set up sensors and reflectors. If fittings and/or nozzles leak, repair leaks. If system pressure exceeds 130 PSI, turn unit OFF, allow it to depressurize and continue on to the next step.

It is essential that as the system is pressurizing you closely observe the 0-200 PSI gauge, located near the discharge of the booster pump, as the system is being pressurized. The system pressure MUST NOT exceed 130 PSI.

8. Place pump unit in the ON position.
9. The pump unit's inlet solenoid will open and there will be a short delay before the pump unit's motor will start.
10. Maximum system pressure will be achieved when ALL automatic drain valves are closed.
11. Required adjustments to system pressure can be made by adjusting the knob on the pressure regulator to make sure the pressure does not exceed a maximum of 130 PSI.
12. Ensure the sensors/reflectors are in line and turn the controller to AUTO. If the pump does not turn on, it is in line.



Pressure Regulator Knob

Chemical Injection Information

- Chemicals are not provided.
- Chemical injection rate = 1 gallon (water used) : 1.54 oz (solution drawn) or 1.2% chemical dilution rate.

Safety Considerations

- Safety glasses are recommended when servicing system due to chemical spray.
- Do not use extension ladder on optional spray arch - use step ladder or self-supported alternative.
- Always allow system to depressurize before servicing it.
- Sentry Plus System is only intended for vehicles - it is **NOT** intended for human use.
- To maximize spray coverage, vehicle travel speed through archway should be less than 5mph (8km/h).

©2024 Valco Industries, Inc.

Maintenance

Disconnect and lock out all power sources before servicing equipment.

Clean or Replace Filters

The strainers can be cleaned with a brush, but if the strainer is still dirty after cleaning, a replacement will be more reliable. Check the main incoming filter monthly to ensure the water supply is not being backed up.

Clean Filter Housings

Check and clean every 6 months.

Inspect Automatic Drain

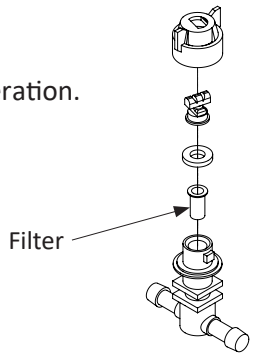
Check every month. Replace if drain does not seal during operation.

Inspect / Clean Nozzles

Check and clean every month, if needed.

Inspect Pressure Gauges

Check every month. Replace if faulty.

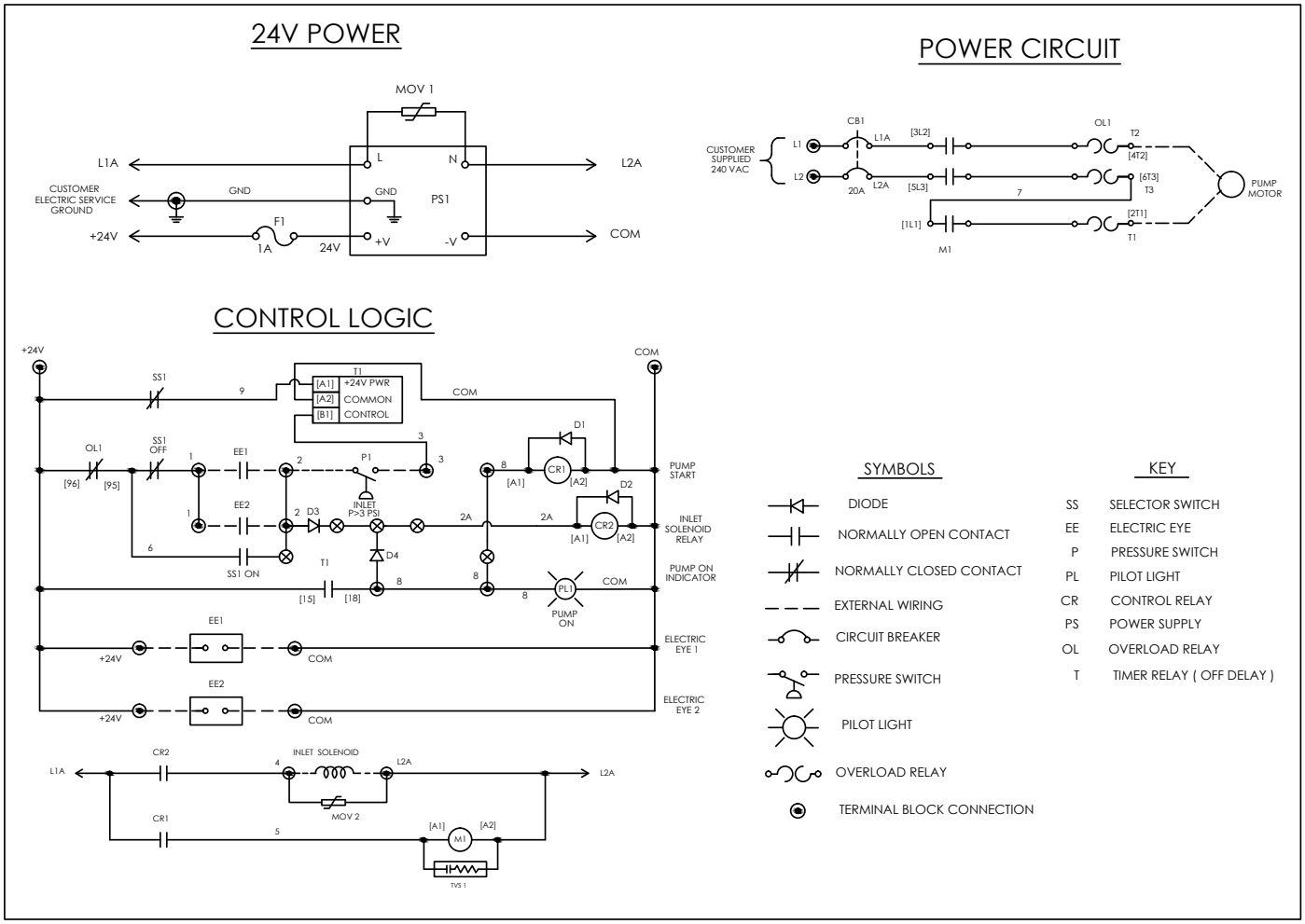


Troubleshooting Guide

Problem	Possible Cause	Corrective Action
Pump won't turn on.	No electricity.	Check circuit breaker.
	Low incoming water pressure.	Add booster pump with pressure tank.
Pump turns on but won't stay on.	Low incoming water pressure.	Add booster pump with pressure tank.
	Low incoming water flow.	Increase size of pipe that connects to the filters. Increase water supply pressure (Max. 55 PSI)
Pump does not turn on when vehicle drives through system.	Mode Indicator.	Turn Mode Indicator to AUTO.
	Electric Eye Sensor.	Check connections.
Water is coming out of automatic drain valve when the system is running.	Fittings or connections may be leaking.	Check all fittings and connections for leaks and repair.
Hand sprayer not producing high pressure spray.	Wand nozzle open too far.	Twist to close wand nozzle, increasing pressure.
	3 way ball valve in wrong position	Move handle toward the hand sprayer hose.
Chemical injector will not draw chemical.	Chemical line is clogged.	Clear chemical line of obstruction.
Rate of draw from chemical injector seems too slow.	Air leak in chemical line.	Locate and repair leak.
	Chemical is too viscous.	Reduce chemical with water to decrease its viscosity.
Chemical injector is leaking from hose barb.	Obstruction in hosebarb checkvalve.	Disassemble and remove obstruction.
	Damaged O-ring in checkvalve.	Remove and replace O-ring. Make sure ball is not stuck in seat.
Pump runs too long after a vehicle passes through.	Delay set too long.	Adjust the dial in the controller to desired time.
	Reflector out of line from the sensor.	Realign till connection and ensure it is secure.

©2024 Valco Industries, Inc.

Factory Wiring



A. Using the supplied 2 conductor cable, wire inlet pressure switch P1 to TB2 Terminals 2 and 3, run the cable through the four-way cord grip, double check the terminations to ensure they are secure.

B. Wire inlet solenoid valve using the supplied 2 conductor cable to TB2 terminals 4, and L2A, run the cable through the four-way cord grip, double check the terminations to ensure they are secure.

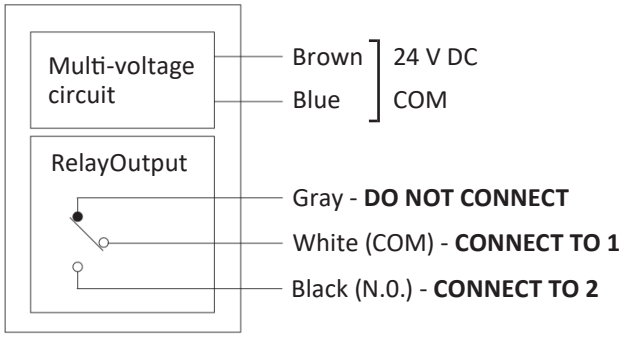
C. Using the supplied 4 conductor cable, wire electric eye sensor 1 to TB1 Terminals: +24 (Brown), COM(Blue) and TB2 Terminals: 1(White), and 2(Black), run the cable through the four-way cord grip, double check the terminations to ensure they are secure.

D. Using the supplied 4 conductor cable, wire electric eye sensor 2 to TB1 Terminals: +24 (Brown), COM(Blue) and TB2 Terminals: 1(White), and 2(Black), run the cable through the four-way cord grip, double check the terminations to ensure they are secure.

E. Tighten down the cord grip nipple hand tight then using a wrench tighten another 1/4 turn.

©2024 Valco Industries, Inc.

Sensor Wiring Connection (5 wires)

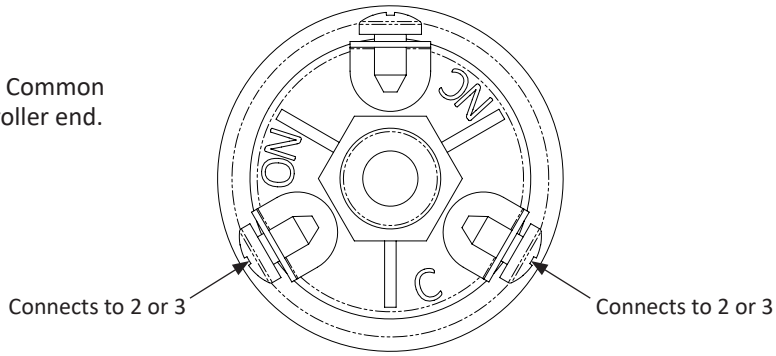


NOTE: Maximum cable length is 300 ft. (91m)

Inlet Pressure Switch Wiring

NOTE: Connect to terminals Normally Open (NO) and Common (C) on the pressure switch and to 2 and 3 at the controller end.

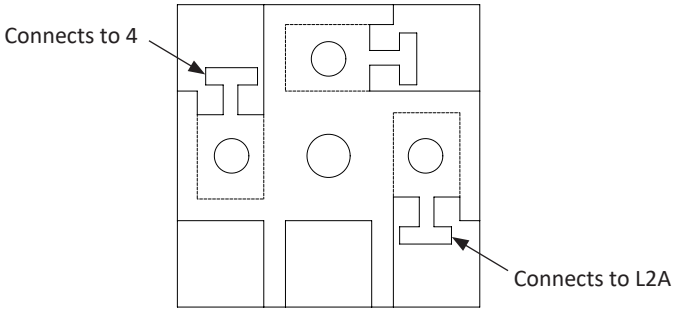
NOTE: All connections are in terminal block 2.



Solenoid Valve Wiring

NOTE: Leads should be attached to the two side terminals on the solenoid and L2A and 4 for the controller.

NOTE: All connections are in terminal block 2.

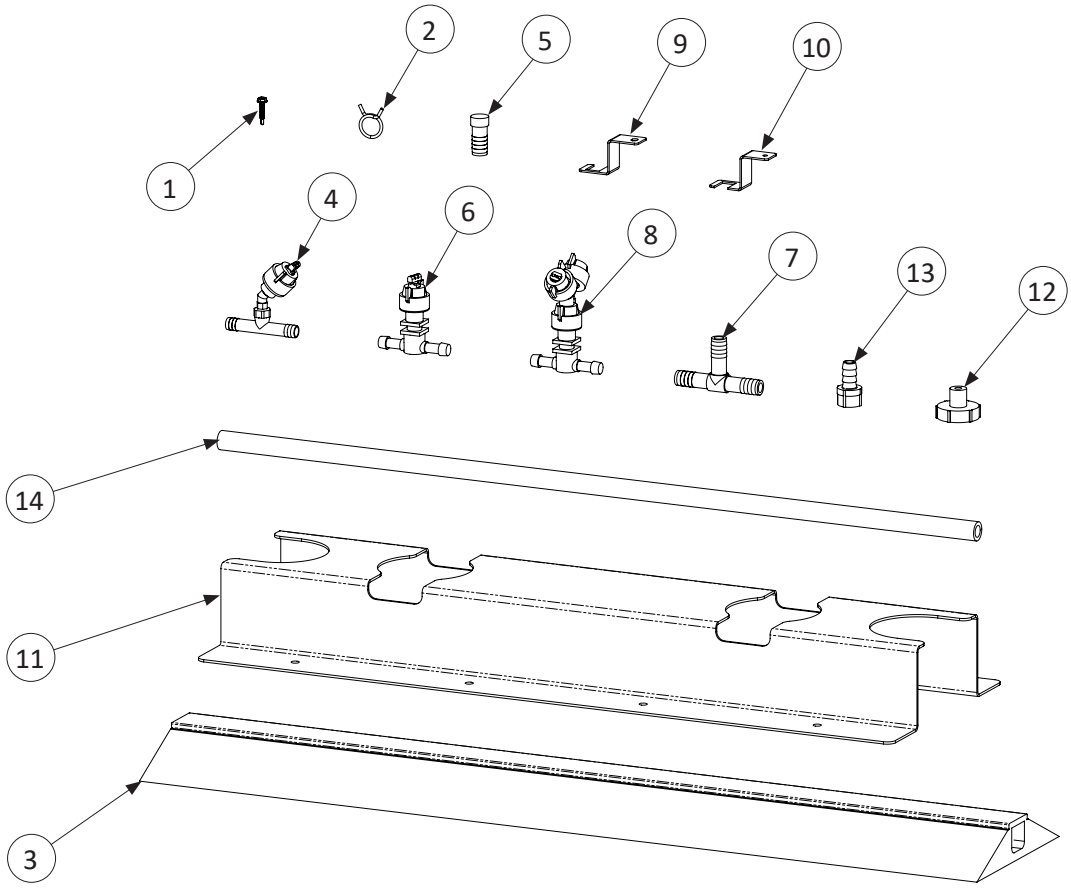


Adjusting Sensor Sensitivity

1. After verifying proper alignment, turn the sensitivity knob to the minimum (counterclockwise).
2. Slowly turn the sensitivity knob clockwise until the yellow LED turns on, mark this as position A, if the sensitivity knob is adjusted all the way clockwise (minimum) and the yellow and red LEDs are on then that is position A.
3. Drive a vehicle between the sensor and reflector, the yellow LED should turn off and the red LED should stay on.
4. Slowly turn the sensitivity knob clockwise until the yellow LED turns on, this will be position B, if the yellow LED does not turn on even when the sensitivity knob is turned to maximum (clockwise) then this will be position B.
5. Turn the sensitivity knob counterclockwise until it is at the center between points A and B, this is the optimal sensitivity setting.

©2024 Valco Industries, Inc.

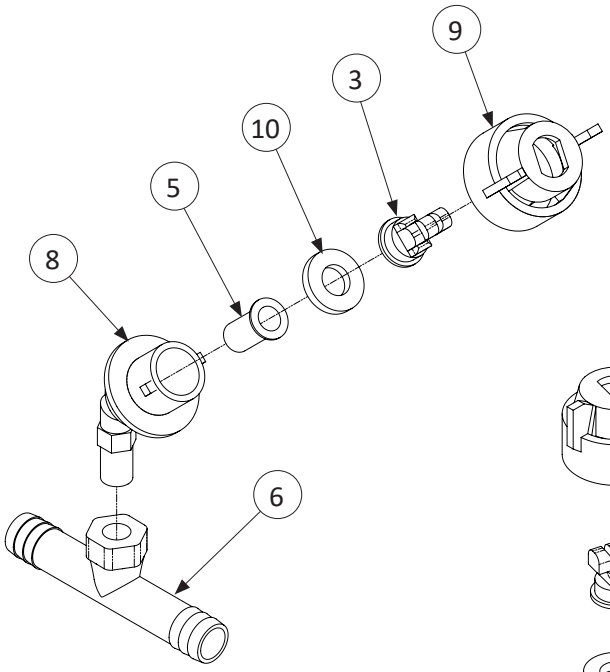
Replacement Parts Drawing and Parts List



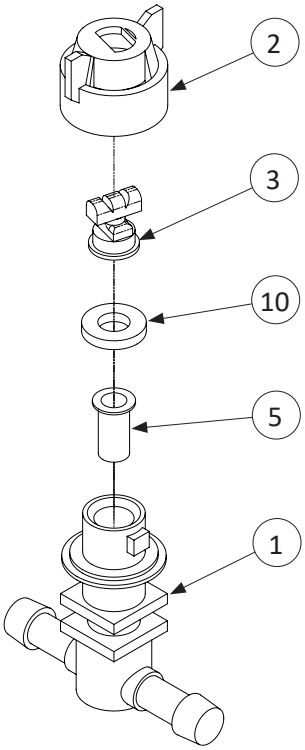
ITEM #	PART #	DESCRIPTION	QTY
1	690448	#14 X 1” SELF-DRILLING HEX SCREW	12
2	814326	SPRING CLAMP, 13/16” OD	49
3	814329	RAMP	2
4	814330	NOZZLE ASSEMBLY, 45 DEGREE	4
5	814333	PLUG, 1/2” BARB	2
6	814335	NOZZLE ASSEMBLY, SIDE	12
7	814343	TEE, 1/2” BARB	3
8	814350	NOZZLE ASSEMBLY, SPLIT Y	2
9	814356	BRACKET WITH SLOT	12
10	814357	BRACKET WITH HOLE	12
11	814366	GUARD	1
12	814388	DRAIN VALVE	2
13	814393	ADAPTER, 1/2” BARB X 1/2” FNPT	2
14	814311	RUBBER HOSE, 1/2” X 20’	1
	814312	RUBBER HOSE, 1/2” X 4.5”	7
	814313	RUBBER HOSE, 1/2” X 10”	2
	814322	RUBBER HOSE, 1/2” X 15”	5
	814324	RUBBER HOSE, 1/2” X 29.5”	8
	814352	RUBBER HOSE, 1/2” (SOLD BY FOOT)	-
	814358	RUBBER HOSE, 1/2” X 46”	2

©2024 Valco Industries, Inc.

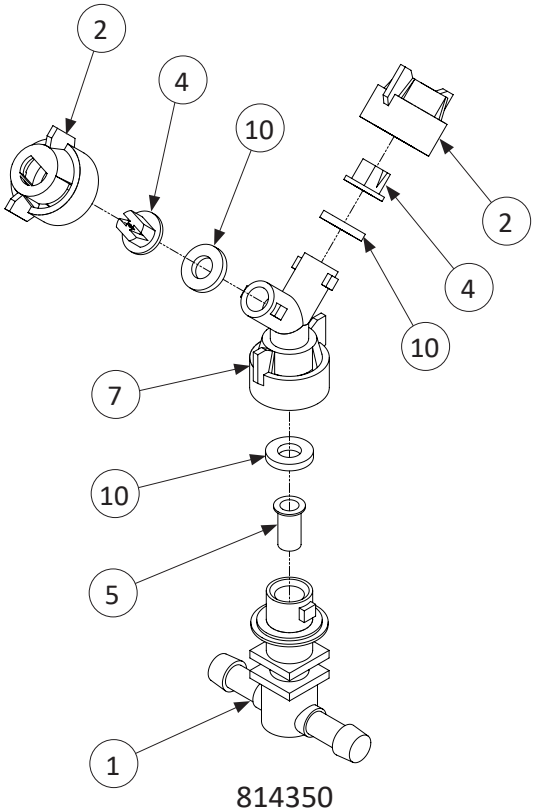
Nozzle Replacement Parts Drawing and Parts List



814330



814335

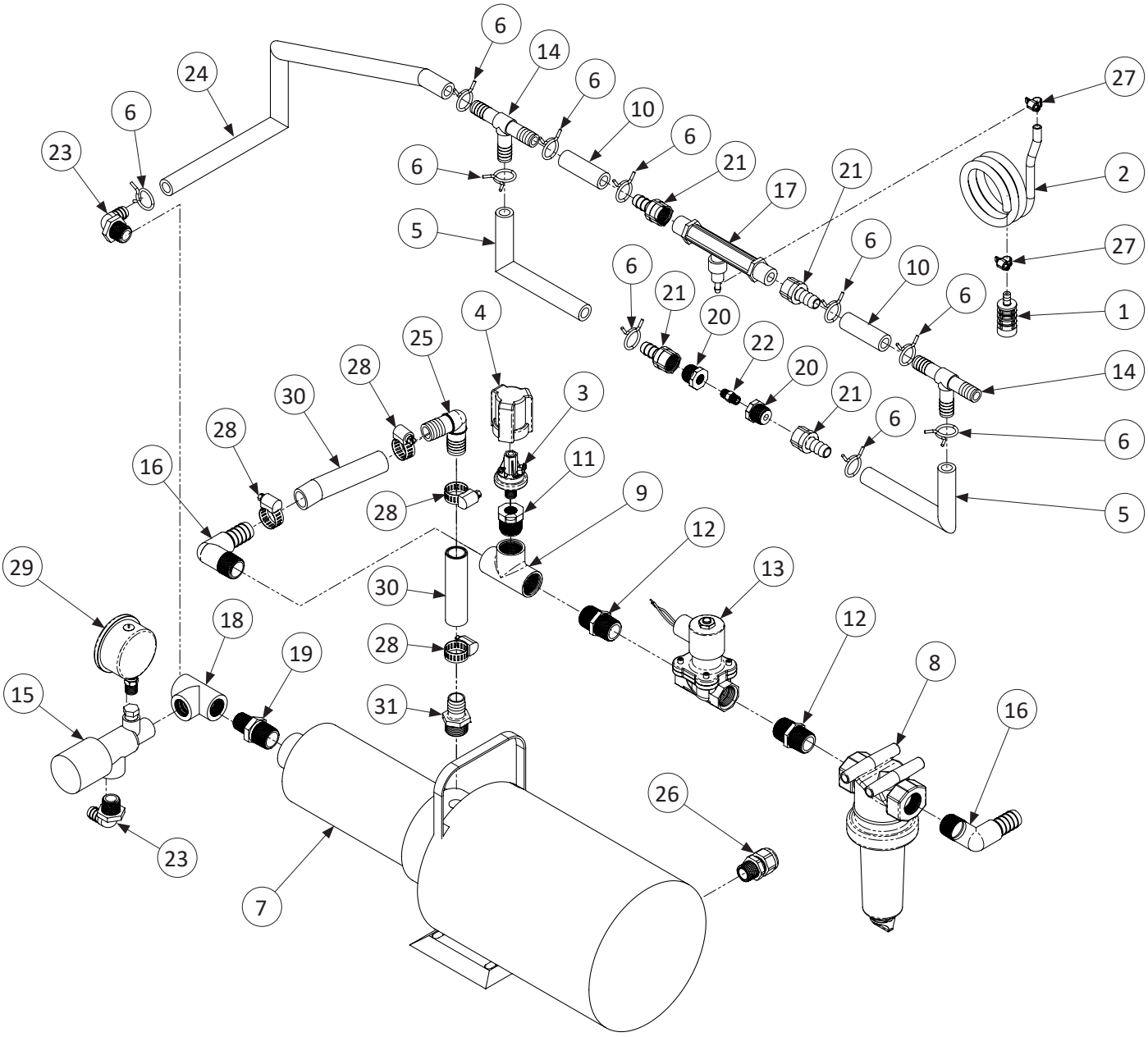


814350

ITEM #	PART #	DESCRIPTION	814330	814335	814350
1	814344	NOZZLE BODY, QUICK CONNECT	-	1	1
2	814346	NOZZLE CAP, WITH SEAL	-	1	2
3	814347	DUAL ANGLE NOZZLE, 110 DEGREE	1	1	-
4	814349	80 DEGREE NOZZLE, FLAT	-	-	2
5	814354	STRAINER, 50 MESH INSERT	1	1	1
6	814362	TEE, 1/4” FPT, 1/2” BARB	1	-	-
7	814363	QUICK CONNECT, Y FITTING	-	-	1
8	814364	QUICK CONNECT, 1/4” MNPT, 45 DEGREE	1	-	-
9	814399	DUAL NOZZLE CAP, WITH SEAL	1	-	-
10	814402	GASKET, SEAT, TEEJET, EPDM	1	1	3

©2024 Valco Industries, Inc.

Sentry Pump System Replacement Parts Drawing



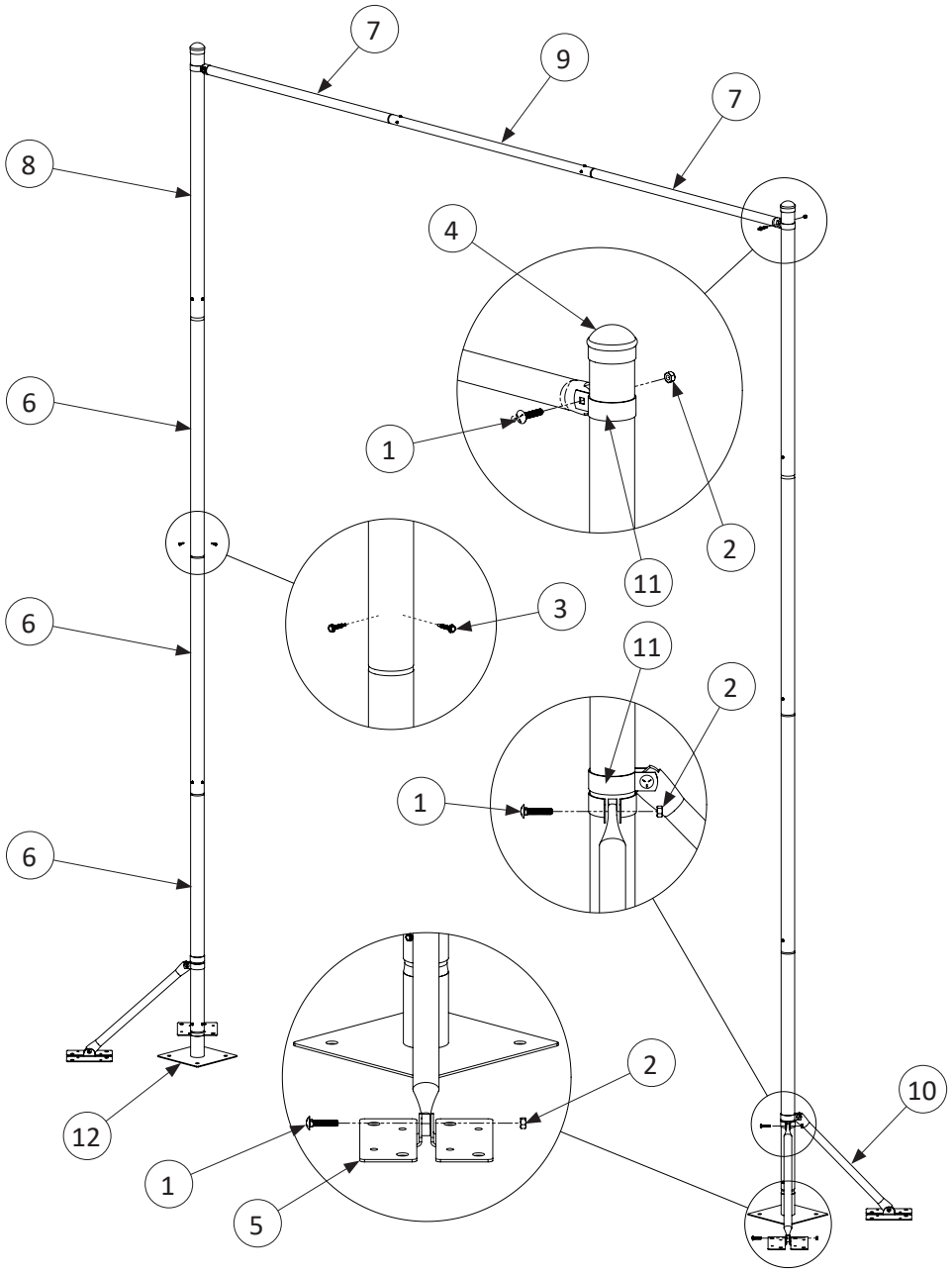
©2024 Valco Industries, Inc.

Sentry Pump System Replacement Parts List

ITEM #	PART #	DESCRIPTION	QTY
1	814089	FILTER, CHECK VALVE, GP ZF2	1
2	814091	CLEAR PVC TUBING, 1/4” ID, 3/8” OD	6
3	814116	PRESSURE SWITCH, A6, 3.1-7 PSI	1
4	814128	COVER, PRESSURE SWITCH, A6	1
5	814312	RUBBER HOSE, 1/2” X 4.5”	2
6	814326	SPRING CLAMP, 13/16” OD	10
7	814327	BOOSTER PUMP, 1/2 HP	1
8	814331	50 MICRON STRAINER, 3/4”	1
9	814334	TEE, 3/4” FNPT, SCH 40 PVC	1
10	814336	RUBBER HOSE, 1/2” X 2.5”	2
11	814338	ADAPTER, 3/4” MNPT X 1/4” FNPT	1
12	814339	NIPPLE, 3/4” MNPT X 3/4” MNPT	2
13	814342	SOLENOID, 3/4”, 220-240V AC	1
14	814343	TEE, 1/2” BARB, PVC	2
15	814361	PRESSURE RELIEF VALVE, 1/2”	1
16	814376	ELBOW, PVC, 3/4” MNPT X 3/4” BARB	2
17	814379	CHEMICAL INJECTOR, 1/2” MNPT	1
18	814387	TEE, 1/2” FNPT, PVC	1
19	814391	ADAPTER, 3/4” X 1/2” MNPT, PVC	1
20	814392	REDUCER, 1/2” MNPT X 1/8” FNPT	2
21	814393	ADAPTER, 1/2” BARB X 1/2” FNPT	4
22	814394	STRAIGHT CONNECTOR, 1/8” MNPT	1
23	814396	ELBOW, 1/2” BARB X 1/2” MNPT	2
24	814401	RUBBER HOSE, 1/2” X 20.5”	1
25	814406	ELBOW, 3/4” BARB X 3/4” BARB	1
26	921921	CORD GRIP, 1/2” NPT	1
27	PMHC1-4	TRIDON HOSE CLAMP, 1/4”	2
28	PMHC3-4	TRIDON HOSE CLAMP, 4/4”	4
29	VG200	OIL FILLED PRESSURE GAUGE	1
30	VRP79	3/4” ID YELLOW HOSE	0.8
31	VRP100	3/4” MALE NPT X 3/4” BARB	1

©2024 Valco Industries, Inc.

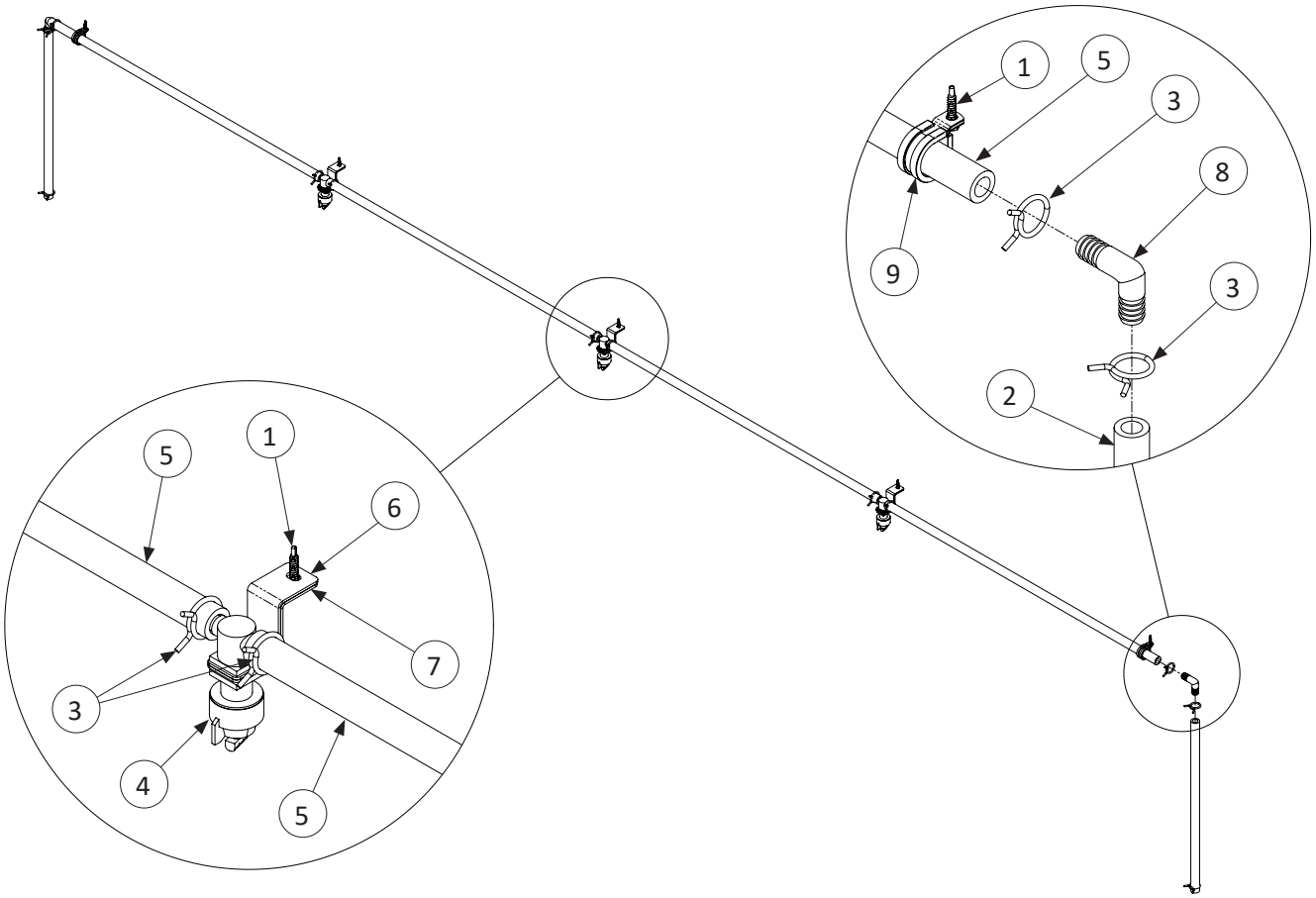
Spray Arch Option Parts Drawing and Parts List (814375)



ITEM #	PART #	DESCRIPTION	QTY
1	010493	5/16-18 X 1” CARRIAGE BOLT	10
2	010603	5/16-18 HEX NUT	10
3	690448	1/4-14 X 1” SELF-DRILLING HEX SCREW	30
4	814341	CAP, FOR 2-3/8” OD TUBE	2
5	814377	BASE SUPPORT BRACKET	8
6	814381	GALVANIZED TUBE, 2-3/8” OD, SWAGE END	6
7	814382	GALVANIZED TUBE, 1-5/8” OD, SWAGE/FLAT	2
8	814383	GALVANIZED TUBE, 2-3/8” OD, STRAIGHT	2
9	814384	GALVANIZED TUBE, 1-5/8” OD, STRAIGHT	1
10	814386	BRACE, 1-3/8” OD, 2’ LONG	4
11	814397	GALVANIZED TUBE CLAMP, 2-3/8”	6
12	814398	BASE PLATE, FRAME	2

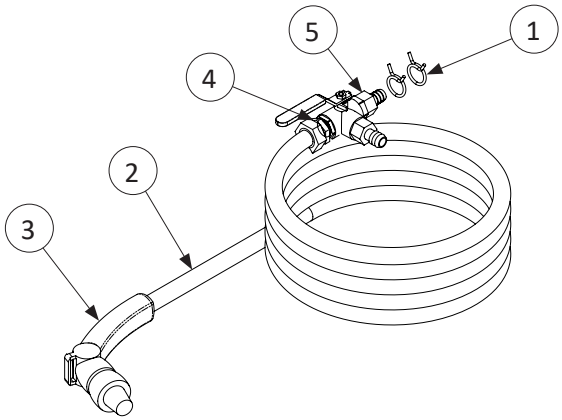
©2024 Valco Industries, Inc.

Top Kit Option Parts Drawing and Parts List (814380)



ITEM #	PART #	DESCRIPTION	QTY
1	690448	#14 X 1” SELF-DRILLING HEX SCREW	3
2	814323	RUBBER HOSE, 1/2” X 19”	2
3	814326	SPRING CLAMP, 13/16” OD	12
4	814335	NOZZLE ASSEMBLY, SIDE	3
5	814337	RUBBER HOSE, 1/2” X 35”	4
6	814356	BRACKET, WITH SLOT	3
7	814357	BRACKET, WITH HOLE	3
8	814389	ELBOW, 1/2” BARB X 1/2” BARB	2
9	814404	PIPE CLAMP, 7/8”	2

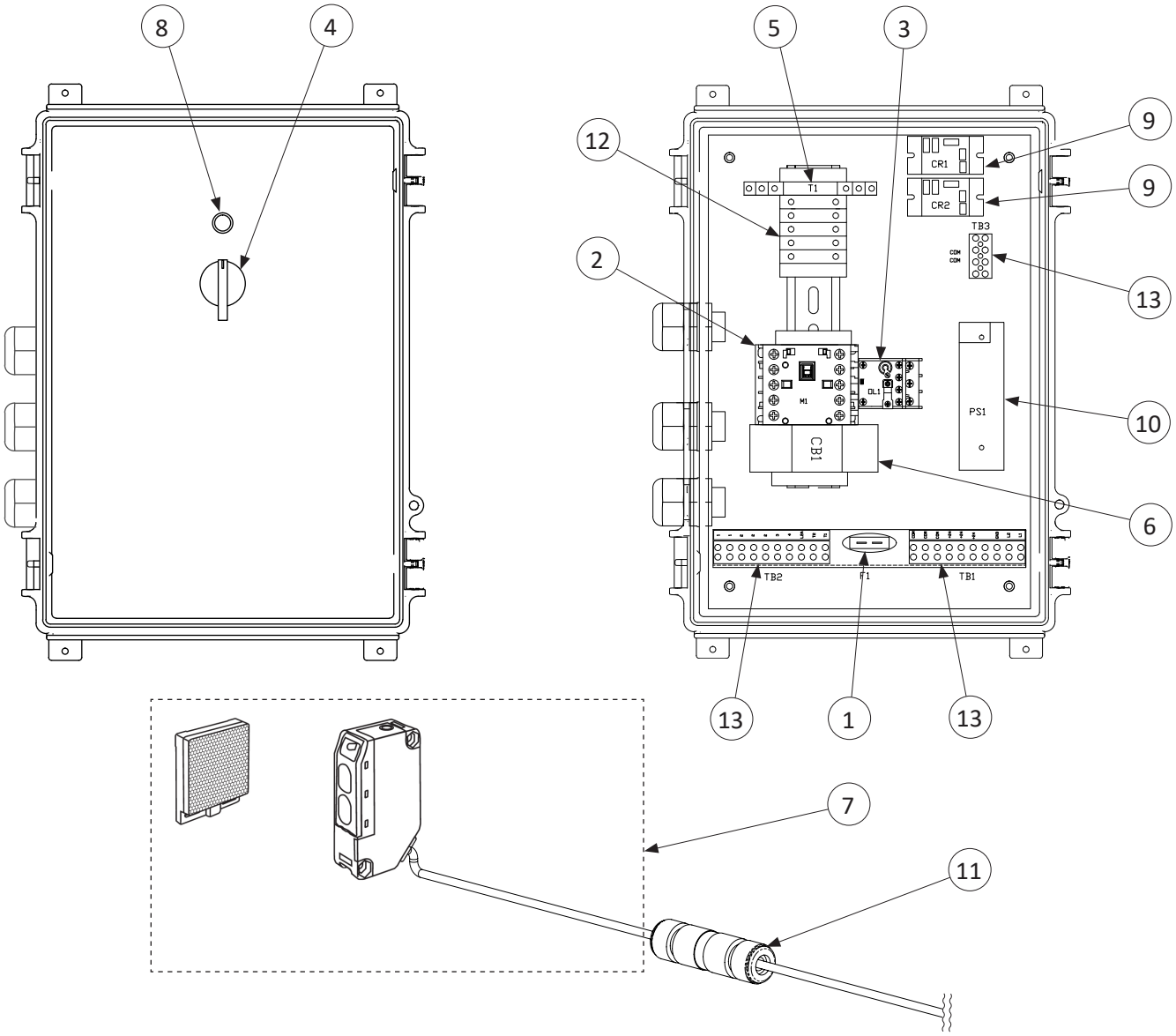
Spray Wand Attachment Option Parts Drawing and Parts List (814365)



ITEM #	PART #	DESCRIPTION	QTY
1	814326	SPRING CLAMP, 13/16” OD	2
2	814351	GARDEN HOSE, 5/8” X 100’	1
3	814353	HOSE NOZZLE, 3/4”	1
4	814367	ADAPTER, 3/4” GHT X 1/2” MNPT	1
5	814378	3-WAY BALL VALVE, 1/2” FNPT	1

©2024 Valco Industries, Inc.

Control Replacement Parts Drawing and Parts List



ITEM #	PART #	QTY	DESCRIPTION
1	922186	1	FUSE AUTO 1A BLADE STYLE
2	922187	1	MINI CONTACTOR 12A NO, 230VAC 60HZ COIL VOLT
3	922189	1	THERMAL OVERLOAD RELAY 7.0-10.0A
4	922190	1	SELECTOR SWITCH 22MM, 3 POS
5	922191	1	TIMER DELAY AC/DC 12V-240V
6	922193	1	CIRCUIT BREAKER TWO POLE 20A
7	922194	2	ELECTRIC EYE SENSOR AND REFLECTOR
8	922203	1	LED PANEL INDICATOR
9	922215	2	RELAY, 24V UL, TUV GEN PURP SPST 40A
10	922216	1	POWER SUPPLY 24V 2.2A
11	922248	2	SENTRY SENSOR CABLE ASSEMBLY
12	922285	5	TERMINAL BLOCK, DIN STYLE
13	CR-59	3	TERMINAL BLOCK EURO STYLE 10 POS

©2024 Valco Industries, Inc.

Customer Service

Dealer Name: _____

Street / PO Box _____

City _____

State / Province _____

Zip / Postal _____

Phone _____

Fax _____

E-mail _____

Web site _____

Customer Service
210 E. Main Street
Coldwater, OH 45828
800.998.2526

North America:
Phone: 800.99VALCO (800.998.2526)
Fax: 419.678.2200
Email: sales@val-co.com

International:
Phone: (+1) 419.678.8731
Fax: (+1) 419.678.2200
Email: intl.sales@val-co.com

©2024 Valco Industries, Inc.