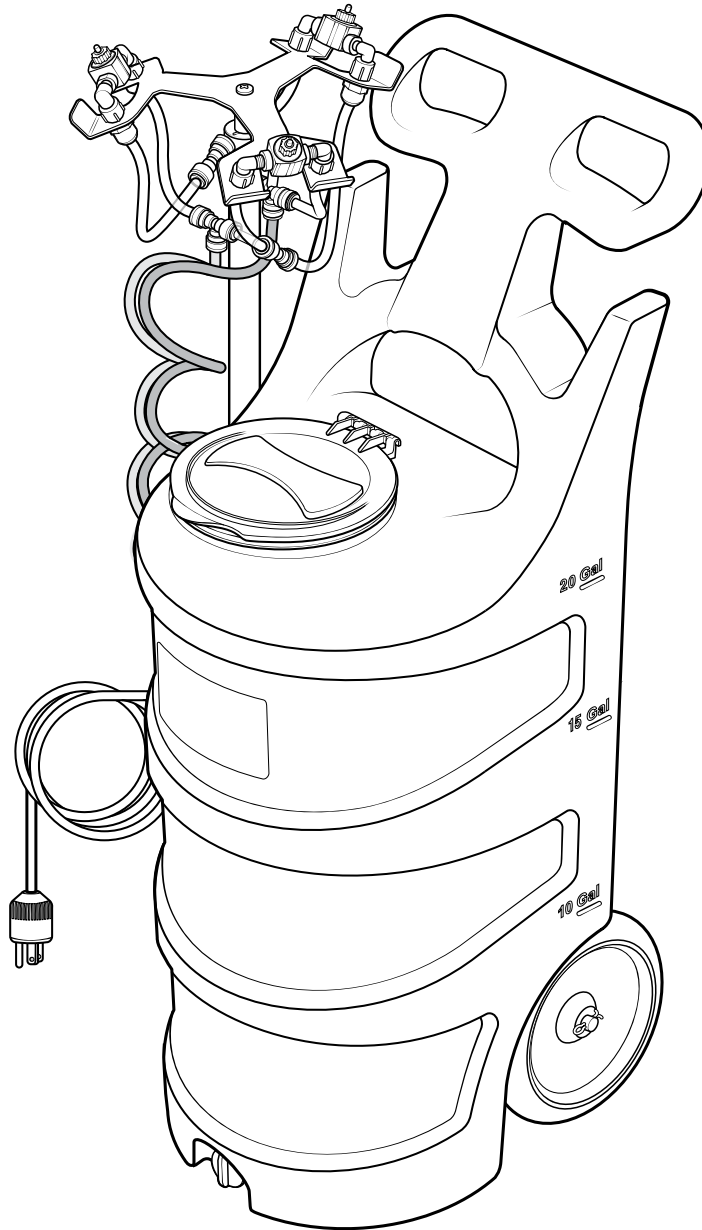


# 20 Gallon Fog Unit With Timer

## Service Manual

FG-20N-3-TM

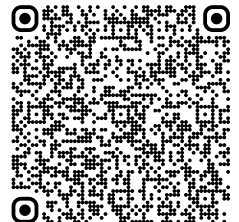


READ ALL INSTRUCTIONS BEFORE USING OR SERVICING THIS UNIT. KEEP THIS MANUAL IN A LOCATION THAT IS READILY AVAILABLE TO USERS AND SERVICE TECHNICIANS.

English (Original Instructions)



Scan this code for  
service manual



# Safety

## **WARNING**

PEOPLE OR OBJECTS CAN BE HURT OR DAMAGED IF THIS UNIT IS NOT USED CORRECTLY!



Failure to read all the instructions before operating the unit may result in personal injury or death from the improper use or the chemical solution. Anyone handling, operating or using the unit must read and understand the instructions in the manual. The buyer assumes all responsibility for safety and proper use in accordance with the instructions.



Using or servicing the unit without appropriate personal protective equipment (PPE) may result in serious injury such as burns, rashes, eye, throat or lung damage and death. Always wear PPE as indicated in the Safety Data Sheet (SDS) when using or servicing the unit. Protect eyes, skin, and lungs against drifting spray.



Chemical solutions may pose a health risk and death if they contact the skin or eyes, are inhaled or swallowed. Always read and follow all chemical safety precautions and handling instructions provided by the chemical manufacturer and the SDS associated with the chemical solution before using the unit.



Pressure within the equipment may cause an unexpected release of the chemical solution and cause serious injury such as burns, rashes, eye damage, throat or lung damage and death. Always depressurize and clean the unit after each use. Never leave the unit unattended while pressurized.

Using the unit with fluid temperatures above 100°F (37.8°C) may result in scalding, burns, serious injury or death. **DO NOT** use a solution with a temperature above 100°F (37.8°C).

Operating the unit when damaged or leaking may result in exposure to chemical solutions, serious injury or death. Never use the unit if it is damaged or leaking.

Never point the discharge wand at yourself, another person, or any object you do not want covered in chemical.



Using incoming air pressure exceeding 100 psi (6.9 bar) may result in pressure buildup, explosion, serious injury or death. **DO NOT** exceed 100 psi (6.9 bar) incoming air pressure when operating the unit.



Use of hydrocarbons and flammable products may result in explosions, fire and serious injury or death. Never use hydrocarbons or flammable products with the unit.

Mixing an alkaline with an acid may result in a chemical reaction. Overheating of the mixture may cause it to splatter caustic compounds or release hazardous fumes, gas and vapors. Always flush the unit with fresh water thoroughly when switching from an alkaline to an acid or an acid to an alkaline.



Touching damaged electrical cords may result in electrical shock, serious injury or death. Always inspect electrical cords and extension cords for damage before connecting the unit to power supply. **DO NOT** touch a damaged electrical cord, or extension cord, that is connected to power supply.

## NOTICE

Servicing or modifying this unit with parts not listed in this manual may cause the unit to operate improperly. Do not use unauthorized parts when servicing the unit.

Use of an air lubricator before the unit may result in diminished performance and damage to the unit. Do not use an air lubricator before the unit.

Moisture in the air lines will damage the pump and diminish the pump life. The air must be filtered, clean, dry and free of moisture. If needed, install an air dryer before the unit.

## PROTECT THE ENVIRONMENT



Please dispose of packaging materials, old machine components, and hazardous fluids in an environmentally safe way according to local waste disposal regulations.

# Service Guide

## ⚠ WARNING

Performing any maintenance with the unit pressurized, connected to air supply, and/or connected to electrical power may result in serious injury or death. Always ensure that the unit has been depressurized, disconnected from the air supply, and electrical power before conducting any maintenance. Servicing or modifying this unit with parts not listed in this manual may cause the unit to operate improperly. Do not use unauthorized parts when servicing the unit.

## Maintaining Your Unit

To keep your unit operating properly, periodically perform the following maintenance procedures:

- Inspect the pump for wear and leaks.
  - Inspect all hoses for leaks or excessive wear.
  - Ensure all hose clamps are in good condition and properly secured.
  - Check suction line and strainer for debris. Clean as needed.
  - Inspect nozzles for debris. Clean as needed.
  - Drain your air compressor tank on a regular basis to help extend pump life. An air source with a high moisture content will accelerate pump wear.
- Note:** If your air source has a high moisture content, install a water separator to the air fitting on the backplate. See Page 8 for more details. (Back plate assembly)

## Servicing Your Unit

Most repairs on the unit can be performed with the following tools:

- Crescent wrench (2x)
- $\frac{7}{16}$  in. (11 mm) open-ended wrench
- Flat head screwdriver
- Thread seal tape
- #2 Phillips head screwdriver
- #3 Phillips head screwdriver
- Hose cutters
- Knife

# Troubleshooting Your Unit

If your unit is not operating properly, try using these troubleshooting tips:

| Issue  | Solution  |
|--|---|
| Pump is cycling too fast   | <ul style="list-style-type: none"><li>• Ensure the suction line ball valve at the bottom of the tank is open.</li></ul>   |
| Pump is cycling too slow   | <ul style="list-style-type: none"><li>• Inspect the outlet side of pump for build up. Clean as needed.</li></ul>  |
| Air passes through the pump without cycling                      | <ul style="list-style-type: none"><li>• The pump needs to be replaced.</li></ul>  |
| Chemical found in the air bowl or coming out of the pump exhaust | <ul style="list-style-type: none"><li>• The pump diaphragm is torn, replace pump.</li></ul>   |
| The unit operates at a reduced pressure                          | <ul style="list-style-type: none"><li>• Check suction line and strainer for debris or damage. Clean or replace as needed. To prevent damage to the unit, the strainer must always be used.</li><li>• Check the air compressor supplying the unit. If the pressure is less than 40 psi (2.8 bar), turn off the unit until the compressor can catch up.</li><li>• If the air supply is 50 psi (3.4 bar) or above, check the air gauge, which should read near 50 psi (3.4 bar). If the air gauge reads more or less than 50 psi (3.4 bar), adjust pressure by turning the knob on the top of the air regulator.</li></ul> |

# Tank Assembly

Front view

## TNKA-20N-IN-BK:

20 gallon natural tank assembly with side inserts - black\* lid - includes drain plug, wheels, suction valve, and backplate thumb nuts

## LDA-7BK:

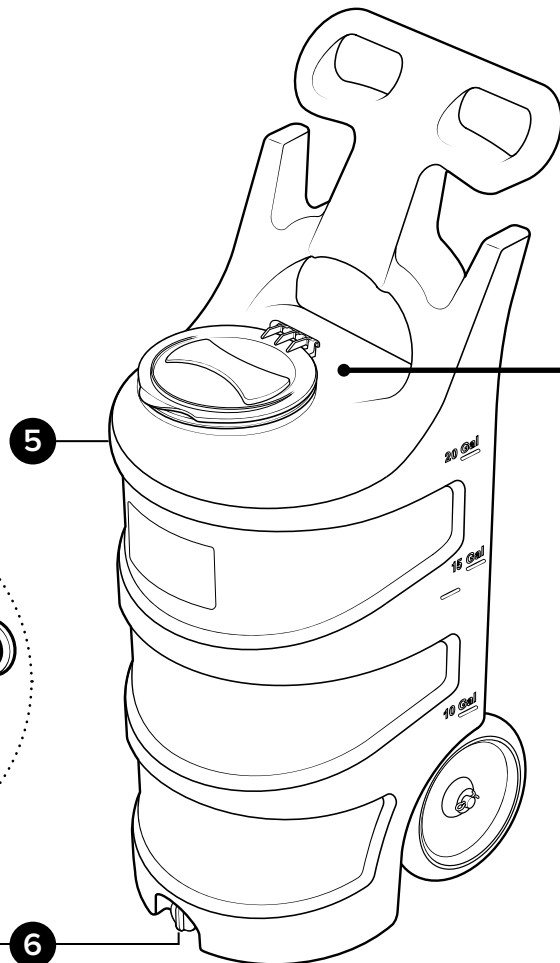
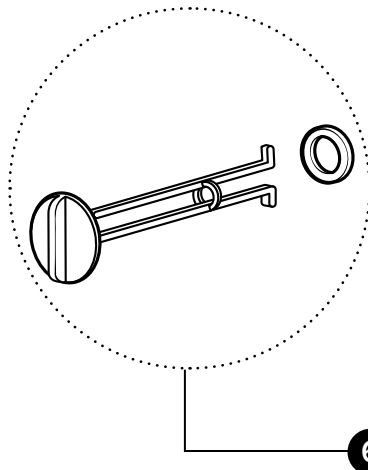
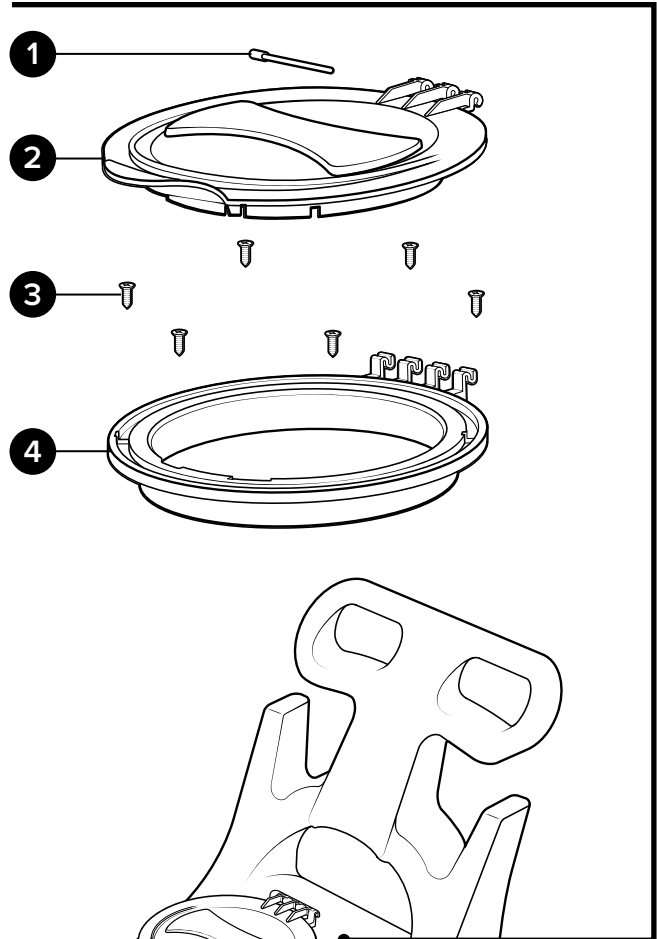
Lid assembly - includes 7 in. black\* lid, lid flange, hinge pin, and mounting screws

| Item number | Description   |
|-------------|---|
| 1           | LD-PIN Hinge pin for 7 in. lid and flange                           |
| 2           | LD-7BK-LID Lid - 7 in. - polypropylene - black*                     |
| 3           | S812-FH Screw - #8 x 1/2 in. - stainless steel - flat head Phillips |
| 4           | LD-7BK-FLNG Lid flange - 7 in. - polypropylene - black*             |

\* Additional colors available, see datasheet for options.

| Item number | Description  |
|-------------|--|
| 5           | TNK-20N Tank - 20 gallon natural - portable                  |
| 6           | DPA Drain plug assembly for portable units - includes gasket |

## LDA-7BK



# Tank Assembly

Back view

## TNKA-20N-IN-BK:

20 gallon natural tank assembly with side inserts - black\* lid - includes drain plug, wheels, suction valve, and backplate thumb nuts

## BPTNA:

Back plate thumb nut assembly - includes bolt, thumb nut, and tether

| Item number | Description   |
|-------------|---|
| 1           | BST1420118-VS Bolt - set - 1/4-20 x 1 1/8 in. - stainless steel - Vibra-Seal      |
| 2           | TN1420 Thumb nut - 1/4-20 x 1 1/4 in. - PP - brass insert - assembled with tether |

## VLVA-BVPVC34:

Suction valve assembly - includes 3/4 in. PVC valve, bushing, 3/4 in. hose barb elbow, and screw band clamp

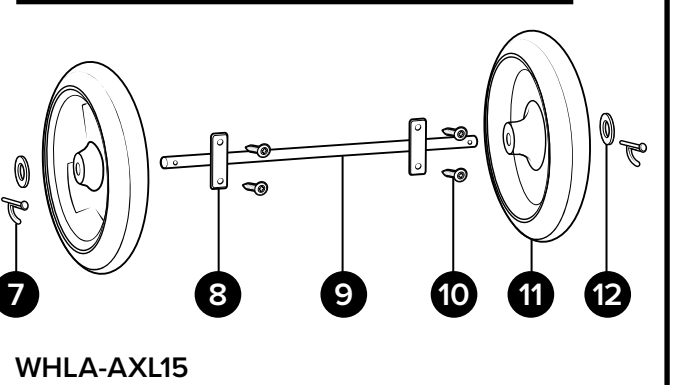
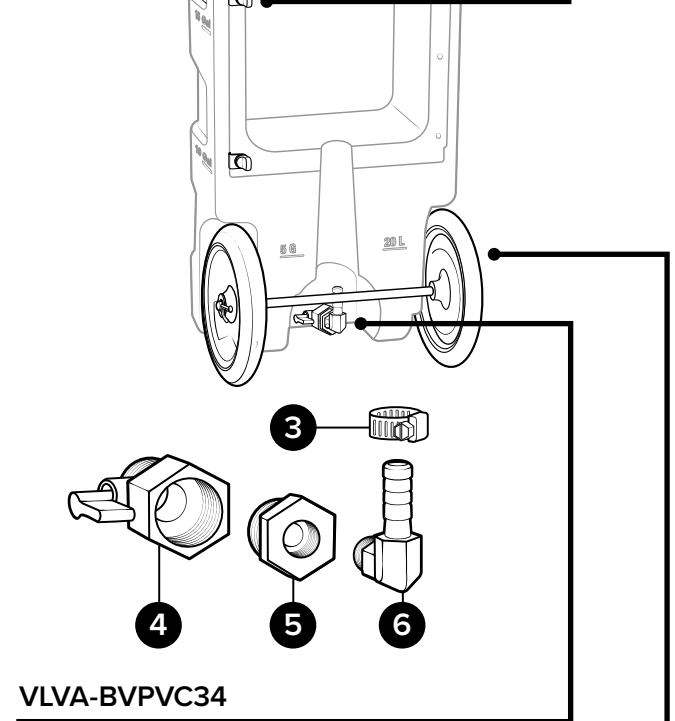
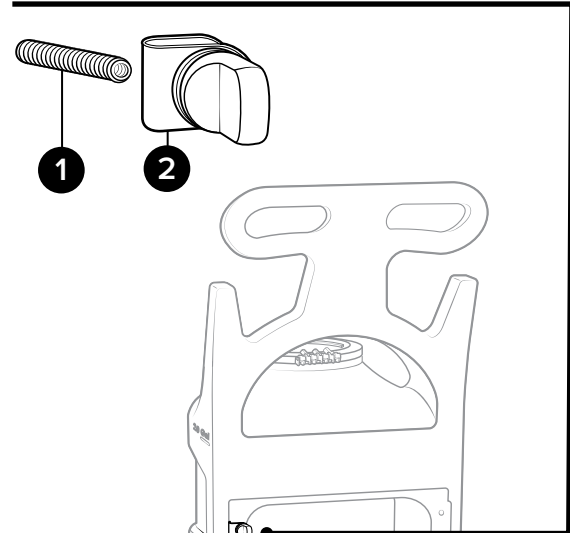
| Item number | Description   |
|-------------|---|
| 3           | SSC38 Screw band clamp - stainless steel - for 3/8 in. hose                 |
| 4           | BVPVC34MF Ball valve - PVC - 3/4 NPT to 3/4 FNPT - Buna seal                |
| 5           | HHPB3414 Hex head poly bushing - 3/4 in. MPT x 1/4 in. FPT                  |
| 6           | HBSSEL1438 Hose barb - stainless steel - elbow - 1/4 in. MPT x 3/8 in. barb |

## WHLA-AXL15:

10 in. wheel assembly - includes 15 in. stainless steel axle, axle plate, bolts, washers, and cotter pins

| Item number | Description  |
|-------------|--|
| 7           | COT Cotter pin - stainless steel - 1/8 in. dia x 1 in. long  |
| 8           | PLSS-AXL Axle plate - stainless steel - 2.5 in. x 1 in. - 2 holes  |
| 9           | AXL15 Axle - stainless - 0.625 dia. x 15.45 in.  |
| 10          | B142012-VS Bolt - 1/4-20 x 1/2 in. - stainless steel - truss head Phillips - Vibra-Seal                  |
| 11          | W10 Wheel - 10 in. - non-marking   |
| 12          | FW58 Flat washer for 5/8 in. od pipe or axle - stainless steel - 0.64 in. id x 1.2 in. od x 0.05 in. thk |

## BPTNA



# Back Plate Assembly

Inside view

## PA-PNZ-TM:

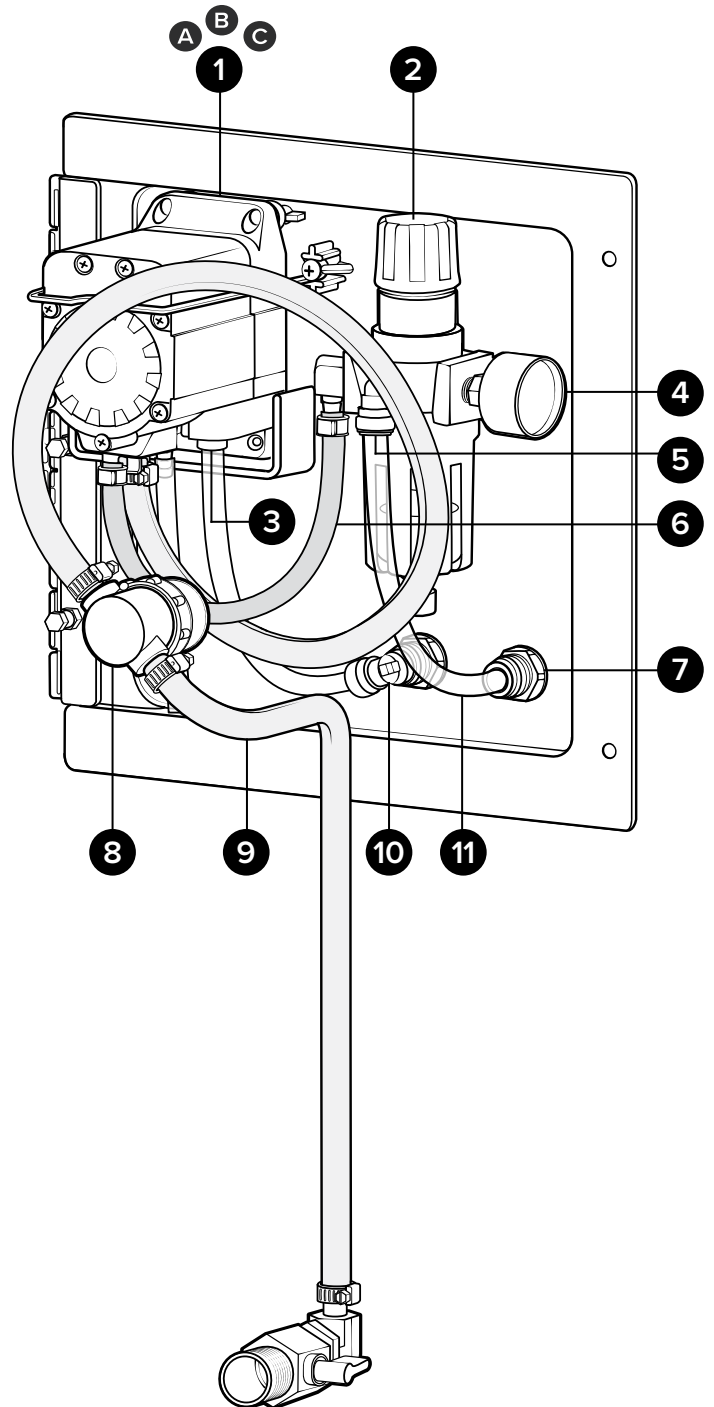
Plate assembly for portable fog units with timer - Santoprene pump

## Additional plate assembly pump options:

PA-PNZK-TM: Kalrez pump

PA-PNZV-TM: Viton pump

| Item number          | Description   |
|----------------------|---|
| <b>1</b> A P56       | Pump with Santoprene seals - includes hose barbs, air fitting, and exhaust barb       |
| B P56K               | Pump with Kalrez seals - includes hose barbs, air fitting, and exhaust barb           |
| C P56V               | Pump with Viton seals - includes hose barbs, air fitting, and exhaust barb            |
| <b>2</b> R14         | Regulator - air - 4x ¼ in. FPT ports - no gauge                                       |
| <b>3</b> QF5638      | Quick fit pump fitting for ¾ in. tube - EPDM o-ring - for G57/P56 - sold individually |
| <b>4</b> AG100       | Air gauge - ½ in. NPT - 0-100 PSI markings - dry model                                |
| <b>5</b> QFEL1438    | Fixed elbow ¼ in. MPT x ¾ in. tube - polypropylene                                    |
| <b>6</b> H14BL-F     | ¼ in. id blue hose - hybrid TPE - available per ft.                                   |
| <b>7</b> QFBH38      | Bulkhead ¾ in. tube polypropylene   |
| <b>8</b> STR38-IL-80 | In line strainer - 2x ¾ in. hose barb - EPDM gasket - #80 mesh SS screen - gray bowl  |
| <b>9</b> H38BL-F     | ¾ in. id blue hose - hybrid TPE - available per ft.                                   |
| <b>10</b> QFSEL38    | Plug-in elbow ¾ in. tube x ¾ in. polypropylene  |
| <b>11</b> TB38N-PE   | ¾ in. od natural tube - polyethylene - available per ft.                              |



# Back Plate Assembly

Back view

## PA-PNZ-TM:

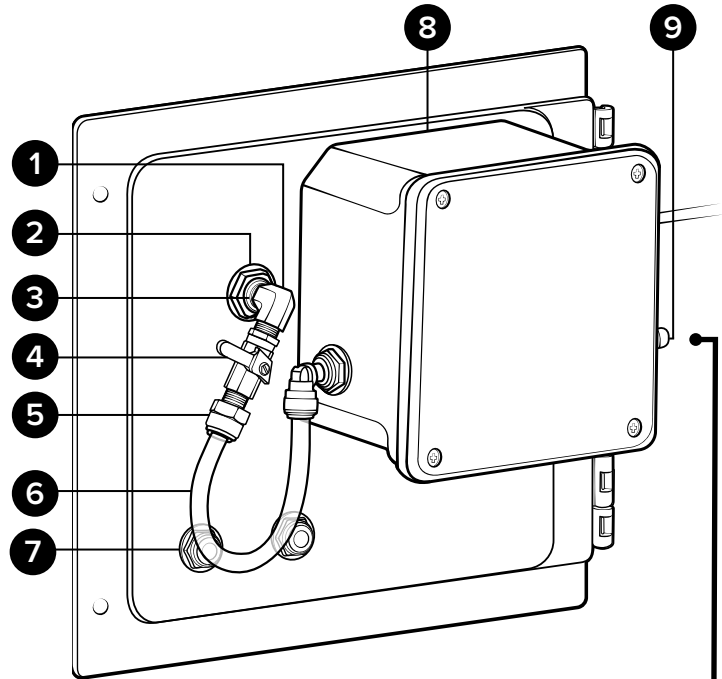
Plate assembly for portable fog units with timer - Santoprene pump

## Additional plate assembly pump options:

PA-PNZK-TM: Kalrez pump

PA-PNZV-TM: Viton pump

| Item number       | Description   |
|-------------------|---|
| 1 SEL14M          | Stainless elbow ¼ in. MPT x ¼ in. MPT   |
| 2 SSSFN12         | Serrated flange nut - stainless - ½ in.   |
| 3 SSA14BKH        | Bulkhead adapter - stainless steel - ¼ in. NPT x ¼ in. NPSM                             |
| 4 BVB14           | Ball valve - brass - nickel plated - air inlet valve - ¼ in. FPT x ¼ in. FPT            |
| 5 QF1438          | Quick fit - ¼ MPT x ⅜ od tube-polypropylene   |
| 6 TB38N-PE        | ⅜ in. od natural tube - polyethylene - available per ft.                                |
| 7 QFBH38          | Bulkhead ⅜ in. tube polypropylene   |
| 8 ACB-PLPF-120VAC | Air control box - PLPF - 120VAC - delay timer - push button - toggles - circuit breaker |
| 9 AP14            | Air fitting - ¼ in. MPT quick disconnect hose coupling plug - nickel-plated brass       |

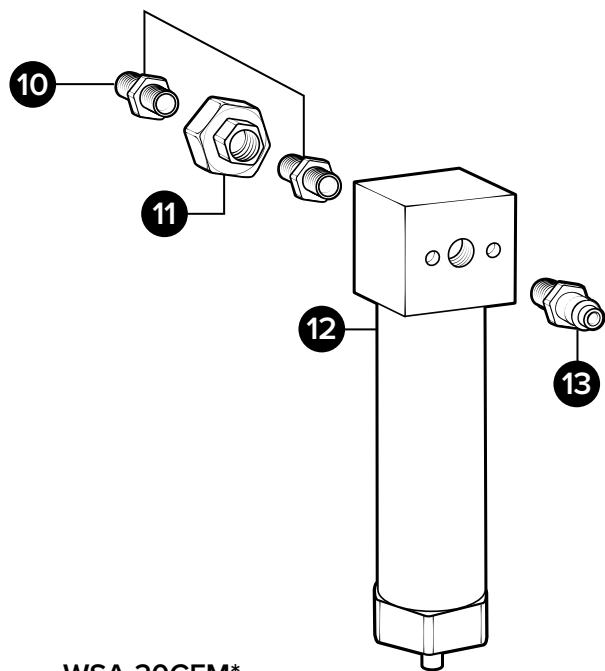


## Optional Components

### WSA-20CFM:

Water separator assembly - 20 CFM - ¼ in. FPT ports - includes air plug and union fittings

| Item number | Description   |
|-------------|---|
| 10 SN1414   | Stainless hex nipple ¼ MPT x ¼ MPT  |
| 11 SSU14    | Stainless steel union - ¼ in. FPT   |
| 12 WS-20CFM | Tsunami water separator/air dryer - 20 CFM - ¼ in. FPT ports                      |
| 13 AP14     | Air fitting - ¼ in. MPT quick disconnect hose coupling plug - nickel-plated brass |



WSA-20CFM\*

\*Optional assembly sold separately

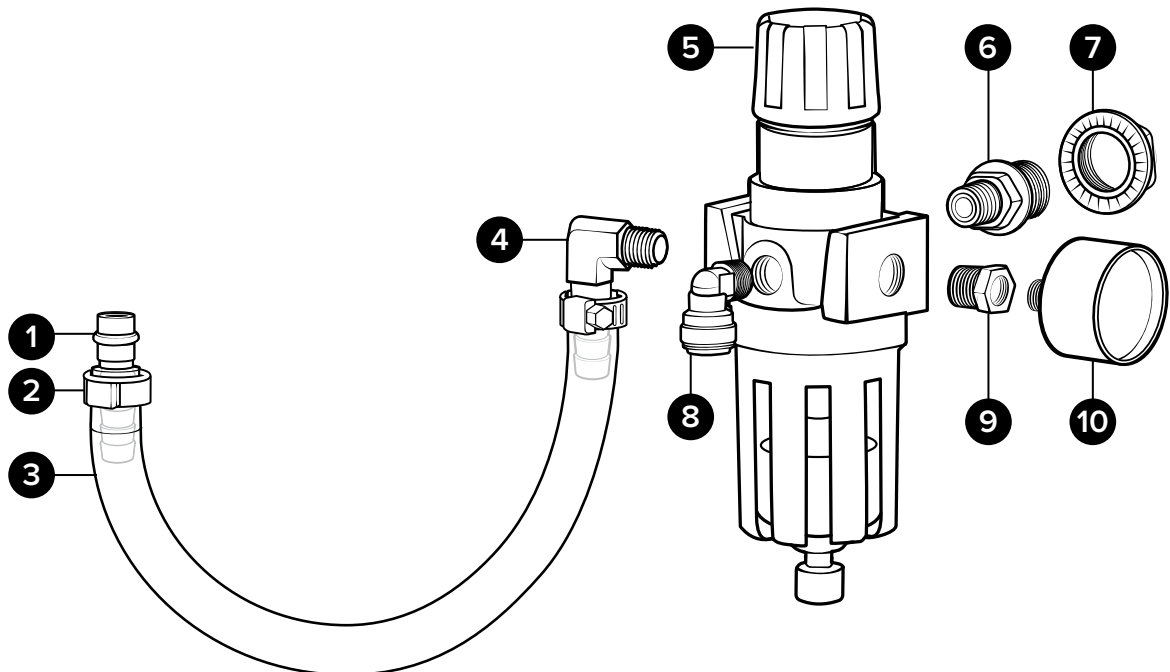
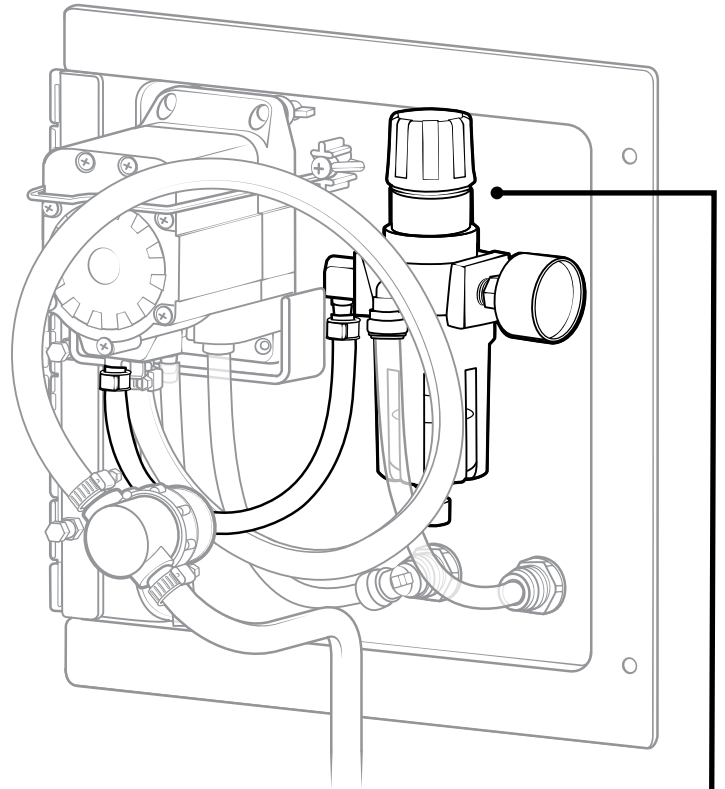


# Back Plate Sub-assemblies

## RGA-R14-PNZ:

Air regulator assembly for portable fog units - includes air gauge, pump barb, hose, bulkhead fittings, and air plug

| Item number | Description   |
|-------------|---|
| 1 HBB14P    | ¼ in. hose barb - brass - for G57/P56 air fitting with o-ring |
| 2 EC14      | Ear clamp - Oetiker - stainless steel for ¼ in. hose          |
| 3 H14BL-F   | ¼ in. id blue hose - hybrid TPE - available per ft.           |
| 4 HBSEL1414 | Stainless hose barb ¼ MPT x ¼ barb elbow                      |
| 5 R14       | Regulator - air - 4x ¼ in. FPT ports - no gauge               |
| 6 SSA14BKH  | Bulkhead adapter - stainless steel - ¼ in. NPT x ¼ in. NPSM   |
| 7 SSSFN12   | Serrated flange nut - stainless - ½ in.                       |
| 8 QFEL1438  | Fixed elbow ¼ in. MPT x ¾ in. tube - polypropylene            |
| 9 HHSB1418  | Hex head stainless bushing ¼ MPT x ⅛ FPT                      |
| 10 AG100    | Air gauge - ⅜ in. NPT - 100 PSI dry model                     |



RGA-R14-PNZ

# Back Plate Sub-assemblies

## SCTNA-PNZ:

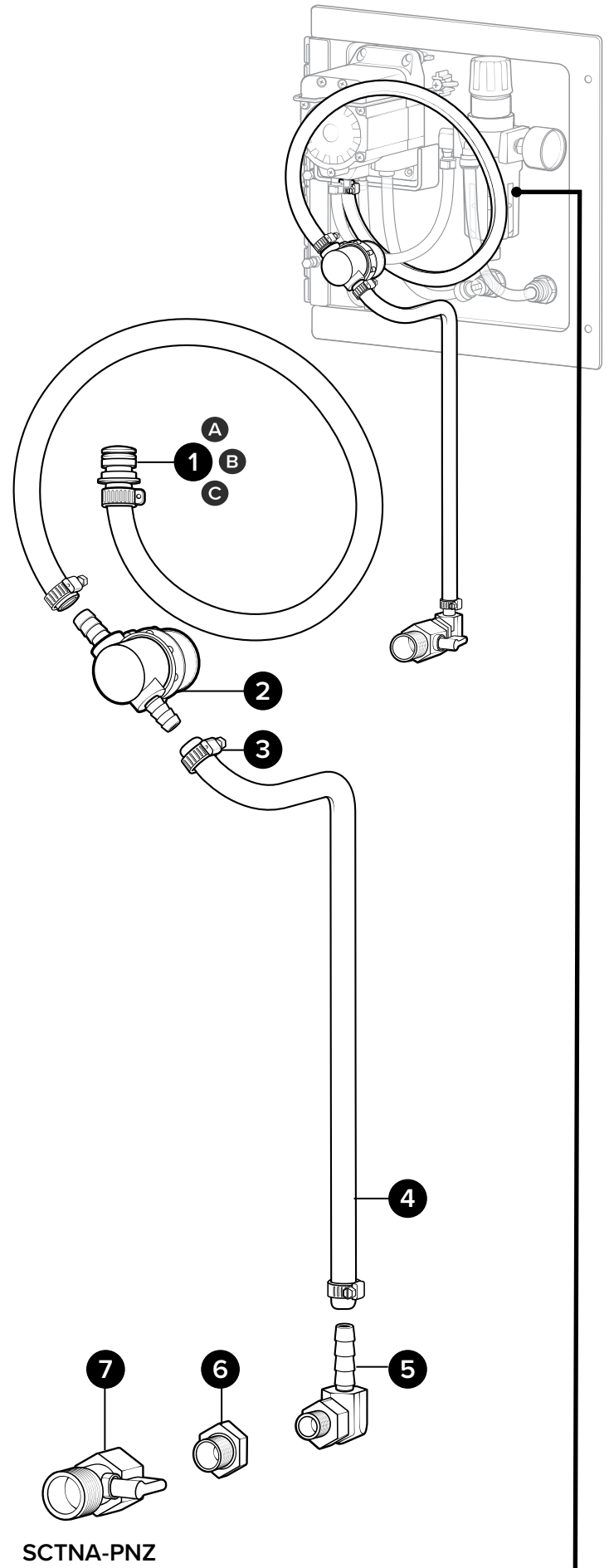
Suction assembly for portable fog units - includes suction valve, hose, in-line strainer, and pump hose barb - for Santoprene pump

## Additional suction assembly options:

SCTNA-PNZK: Kalrez pump

SCTNA-PNZV: Viton pump

| Item number | Description   |
|-------------|---|
| 1           | <b>A</b> HB5638<br>Hose barb for P56 pump - EPDM o-ring   |
|             | <b>B</b> HB5638K<br>Hose barb for P56K pump - Kalrez o-ring                                       |
|             | <b>C</b> HB5638V<br>Hose barb for P56V pump - Viton o-ring  |
| 2           | STR38-IL-80<br>In line strainer - 2x 3/8 hose barb - EPDM gasket - #80 mesh SS screen - gray bowl |
| 3           | SSC38<br>Screw band clamp - stainless steel - for 3/8 in. hose                                    |
| 4           | H38BL-F<br>3/8 in. id blue hose - hybrid TPE - available per ft.                                  |
| 5           | HBSEL1438<br>Hose barb - stainless steel - elbow - 1/4 in. MPT x 3/8 in. barb                     |
| 6           | HHPB3414<br>Hex head poly bushing 3/4 MPT x 1/4 FPT   |
| 7           | BVPVC34MF<br>Ball valve - PVC - 3/4 NPT to 3/4 FNPT Buna seal                                     |



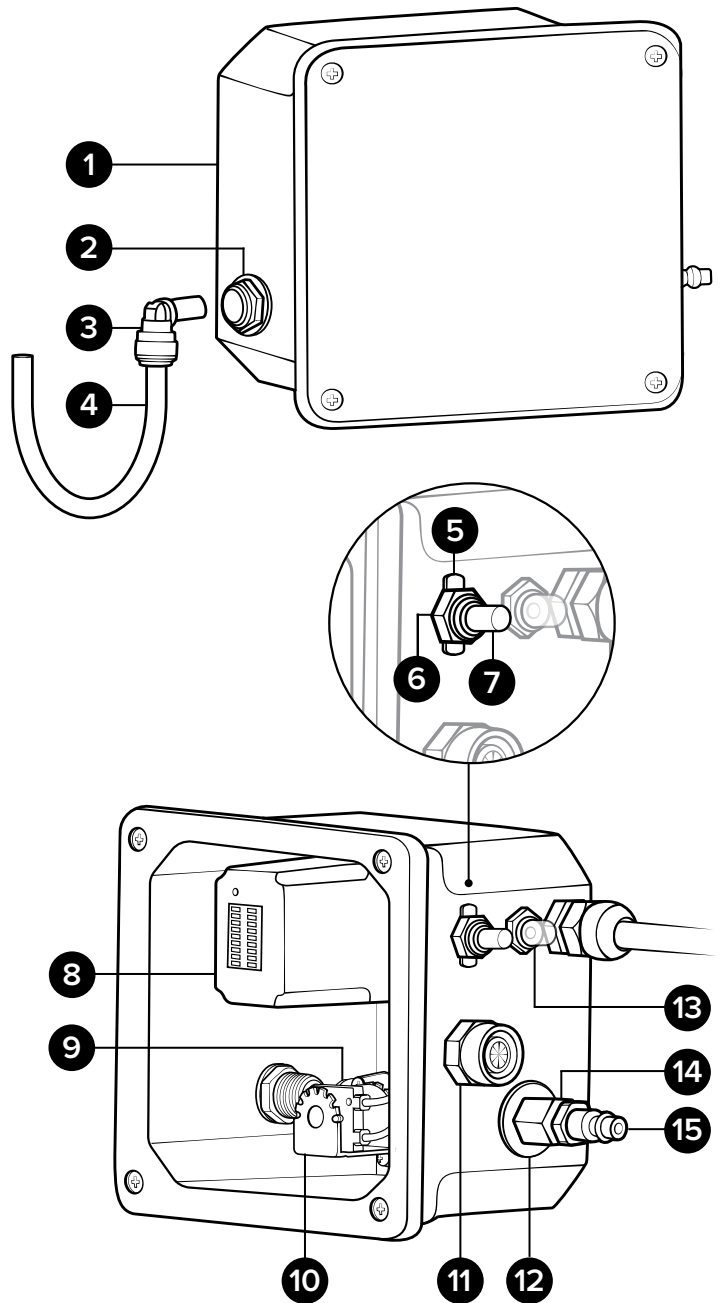
SCTNA-PNZ

# Back Plate Sub-assemblies

## ACB-PLPF-120VAC:

Air control box assembly - 120VAC - includes delay timer, push button, toggles, circuit breaker, and air plug

| Item number     | Description   |
|-----------------|---|
| 1 PBA-664       | Poly box assembly - 6 x 6 x 4 - PVC - junction box  |
| 2 QFBH38        | Bulkhead 3/8 in. tube polypropylene   |
| 3 QFSEL38       | Plug-in elbow 3/8 in. tube x 3/8 in. polypropylene  |
| 4 TB38N-PE      | 3/8 in. od natural tube - polyethylene available per ft.  |
| 5 TSW-PLT       | Toggle switch - ON/OFF plate - nickel-plated steel - mounting hole for 15/32 keyed bushing  |
| 6 TSW-BDY       | Toggle switch - body - single pole single throw - nickel-plated brass - 1/4 in. spade terminals - 1/2 in. mounting hole - 15/32-32 keyed threaded bushing |
| 7 TSW-BT        | Toggle switch - mounting boot - black silicone rubber - 15/32-32 integrated nut   |
| 8 TMR-MF-120VAC | Timer - multi-function relay - 0.05 sec. to 10230 hr. adjustable digi-set - 120 VAC - 10 A max - uses 11 pin socket                                       |
| 9 QF1438        | Quick fit - 1/4 MPT x 3/8 od tube-polypropylene   |
| 10 FCV14-120VAC | Fluid control valve - DEMA - 1/4 in. FPT - 7 GPM - polypropylene body - Viton diaphragm - 120 VAC solenoid - normally closed - 18 in. 18 AWG flying leads |
| 11 BUT78GR      | Push button - flush green cap - normally open   |
| 12 FW14NPT      | Flat washer for 1/4 in. NPT - stainless - 0.57 in. id x 1.28 in. od x 0.08 in. thk  |
| 13 CB-5         | Circuit breaker assembly - 5 amp includes clear boot  |
| 14 SSA14        | Stainless adapter 1/4 MPT x 1/4 FPT   |
| 15 AP14         | Air fitting - 1/4 in. MPT quick disconnect hose coupling plug - nickel-plated brass   |



# Nozzle Assembly

## NZA-PNZX3-WMST:

Nozzle assembly - includes 3x pneumatic nozzles, tank mounting mast, bracket assembly, coiled twin line, and mounting hardware

## NZA-PNZX3-WBRKT:

Nozzle bracket assembly - includes 3x pneumatic nozzles, mounting bracket, tubing, and fittings

| Item number      | Description  |
|------------------|--|
| 1 PNZ-N130       | Pneumatic mixing nozzle - polypropylene body - Kynar tip - 3.7 gal/hr            |
| 2 EL14M14F       | ¼ FPT x ¼ MPT - polypro elbow  |
| 3 BRKT-MST-PNZX3 | Bracket for mast mounting 3x PNZ nozzles - stainless steel                       |
| 4 FW14NPT        | Flat washer for ¼ in. NPT - stainless - 0.57 in. id x 1.28 in. od x 0.08 in. thk |
| 5 QF1438         | Quick fit - ¼ MPT x ⅜ od tube - polypropylene                                    |
| 6 TB38N-PE       | ⅜ in. od natural tube - polyethylene - available per ft.                         |
| 7 QFT38          | Union tee ⅜ in. tube polypropylene   |

| Item number   | Description  |
|---------------|--|
| 8 B5161858-VS | Bolt - ⅝-18 x ⅝ in. - stainless steel - truss head Phillips - Vibra-Seal         |
| 9 CTB38-15    | ⅜ in. od coiled twin line bonded blue and red tube - polyurethane - 15 ft. reach |
| 10 B142058-VS | Bolt - ¼-20 x ⅝ in. - stainless steel - truss head Phillips - Vibra-Seal         |
| 11 MST-TNK    | Telescoping mast for rotomolded tanks - bracket and hardware not included        |

## NZA-PNZX3-WBRKT

