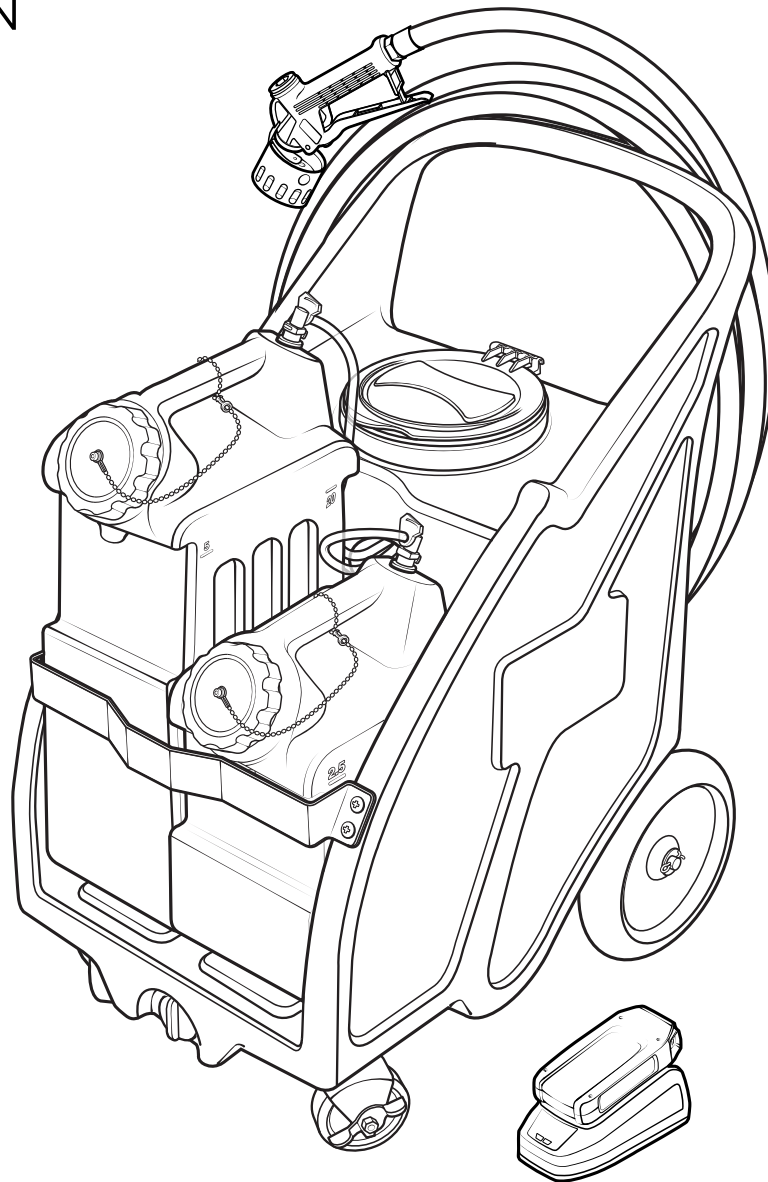


Battery Powered Foam Rinse Sanitize Unit

Service Manual

FRS-BP-15N



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.

The unit is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless given supervision or instructed in the safe use of the unit and understand the hazards involved. Children under 8 years old should be supervised to ensure they do not play with or handle the unit.



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).

Some components may be hot during and after use. Use caution when servicing or handling the equipment.



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.

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 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.

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



Keep battery box lid closed and latched at all times unless accessing battery. Do not use with lid open or damaged. Do not expose unit to liquids, cleaning solutions, foam, or rain. The battery pack is not waterproof. Do not submerge in liquid. If battery pack gets wet, allow to dry before further use.

Using the unit with unapproved devices may result in a risk of fire, shock or personal injury. Only use with 24V Equip Series compatible equipment.

Store unit and battery indoors in a cool, dry location between 32°-77°F (0°-25°C) and < 75% relative humidity. Do not store below 32°F (0°C) or above 113°F (45°C). To prevent premature battery failure, do not store battery in depleted state for long periods of time.

Safety

WARNING

First Aid Instructions

- Failure to follow first aid instructions may result in death or serious personal injury.
- If battery liquid comes in contact with skin, wash immediately with soap and water, then neutralize with lemon juice or vinegar.
- If battery liquid gets in your eyes, flush with clean water for a minimum of 10 minutes, then seek immediate medical attention.
- If battery liquid is swallowed, seek immediate medical attention.

State of California Proposition 65 Warning

- The battery can expose you to chemicals, including cobalt, lithium, manganese, nickel, oxide, and carbon black, which are known to the State of California to cause cancer and reproductive harm. For additional information, go to www.P65Warnings.ca.gov.

NOTICE

The unit is not rated for high-altitude areas of 2000 meters and above.

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.

In the presence of radiated RF energies, the charge indicator button can lose functionality. Refer to the separate manuals supplied with the battery and charger for additional safety precautions and instructions.

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



Model No.: FRS-BP-15N

Manufactured by: FOAMit

3833 Soundtech Ct. SE Grand Rapids, MI 49512 US

This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Service Guide

WARNING

Performing any maintenance with the unit pressurized, may result in serious injury or death. Always ensure the unit has been depressurized, and battery has been removed before conducting any maintenance. Cleaning and user maintenance shall not be made by children without supervision. Servicing or modifying 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. Verify all hose clamps are in good condition and properly secured.
- Check the suction line and strainer for debris. Clean as needed.
- If foam quality begins to decrease, inspect the wadding. Replace as needed.
- Store battery in a half-charged state and maintain battery every 3-6 months.

Servicing Your Unit

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

- | | |
|-------------------------|--------------------------------|
| • Crescent wrench (2x) | • #2 Phillips head screwdriver |
| • ¼ in. (7 mm) hex bit | • #3 Phillips head screwdriver |
| • Flat head screwdriver | • Hose cutters |
| • Thread seal tape | • Knife |

Troubleshooting Your Unit

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

Issue	Solution
Pump is cycling improperly	• Verify pump did not fail from chemical attack, or electrical malfunction. • Ensure proper chemical and concentration are being used. • Inspect suction line and strainer for debris or damage. • Needle valve may be open too far. Close and readjust the needle valve. • Verify ball valve is open and suction lines are secured properly. • Ensure all hose clamps are fully tightened. • Verify hoses are not pinched or kinked anywhere. • If pump turns on automatically, pressure switch may need to be replaced.
Foam comes out wet, no matter where the needle valve is positioned	• The check valve may need to be replaced. • Verify correct chemical concentration is being used. • If only the fluid pump is running, the electric air compressor may need to be replaced. • Check if wadding is plugged. Remove and inspect it by following instructions below: 1. Verify the unit does not have the battery installed or the power on. 2. Relieve all stored pressure in the unit by squeezing the trigger handle. 3. Remove nozzle selector from the spray gun. 4. Remove and inspect the wadding from inside the nozzle selector. 5. Replace wadding if necessary. Reattach nozzle selector.
Sporadic wet foam	• Verify correct chemical concentration is being used. • Ensure discharge hose is not kinked or damaged. • Inspect wadding. Replace wadding if it is clogged.
Sporadic dry foam	• Inspect suction line and strainer for debris or damage. • If pump is cycling improperly or has failed, replace the pump.
The unit operates at a reduced pressure	• Inspect 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. • Inspect wadding. Replace if necessary.
Battery will not completely charge	• Place a secondary battery on the charger. If the secondary battery charges as expected, it indicates that the initial battery is faulty and should be replaced. • If the problem continues to occur, the charger is bad. Replace battery charger.
Battery discharges too quickly	• Battery has reached life expectancy. Replace battery.
Power button LED slow flashing	• Dead battery. Charge or replace battery.
Power button LED fast flashing	• Compressor startup failure. Reset with a power cycle. • A faulty pump or compressor may need to be replaced.
Power button LED double flashing	• Pump or compressor is over temperature. Allow unit to cool before use.
Triple click nozzle is leaking from the rear	• Tighten bolt on face and try again. • If leak persists remove bolt and inspect nozzle selector o-rings. Replace if needed.
Membrane switch buttons not operating properly	• Faulty switch. Replace membrane switch.
Battery/charger fault light is flashing	• Refer to the separate manuals supplied with the battery and charger for more information regarding indicator and fault lights.

Tank Assembly

Front view

TNKA-CN15N-BK:

15 gallon natural tank assembly - portable concentrate - black* lid - includes drain plug, swivel casters, wheels, tank suction, backplate thumb nuts, and container bracket

LDA-7BK:

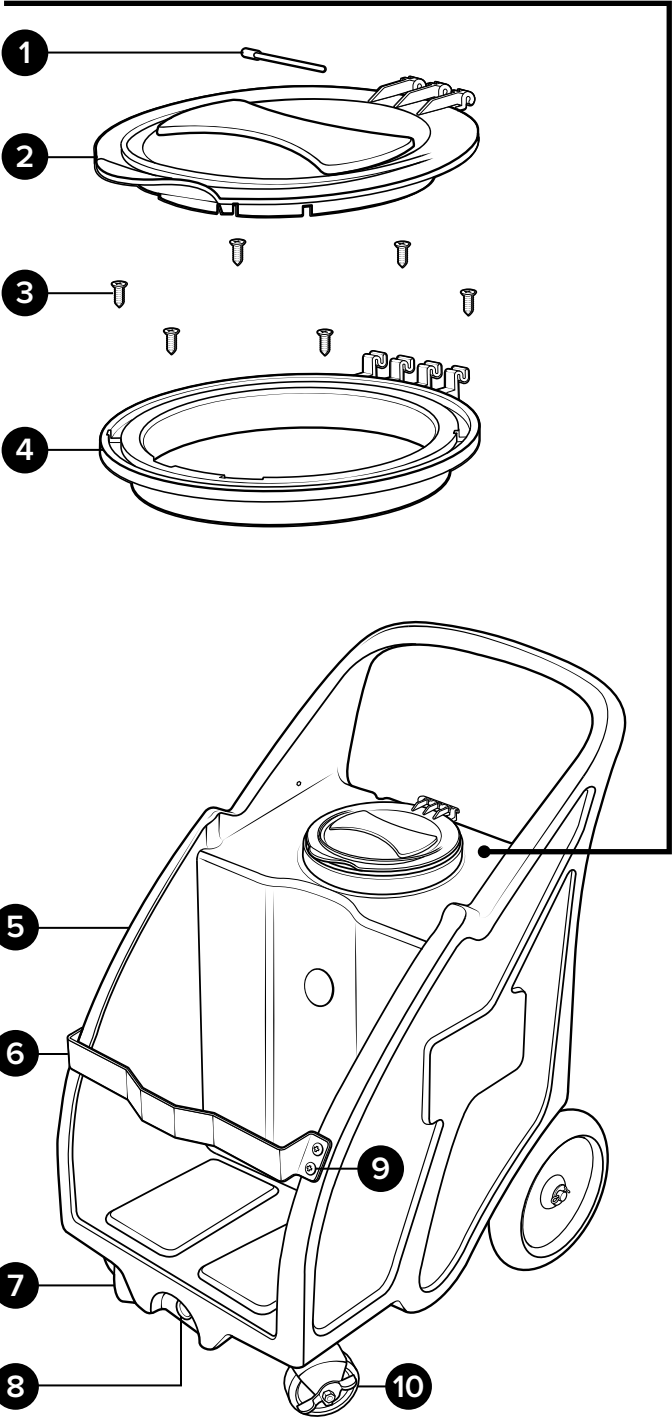
Lid assembly - includes 7 in. black* lid, lid flange, hinge pin, and mounting screws

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 ½ 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-CN15N	Tank - 15 gallon natural - portable concentrate
6	BRKT-TNK-CNTNR	Bracket - stainless steel
7	CST5SS	Swivel caster - stainless - 5 in. clearance - 4 in. wheel
8	DPA	Drain plug assembly for portable units - includes gasket
9	B142012-VS	Bolt - ¼-20 x ½ in. - stainless steel - truss head Phillips - Vibra-Seal
10	CST5SS-L	Swivel caster - stainless - 5 in. clearance - 4 in. wheel - with lock

LDA-7BK



Tank Assembly

Back view

TNKA-CN15N-BK:

15 gallon natural tank assembly - portable concentrate - black* lid - includes drain plug, swivel casters, wheels, tank suction, backplate thumb nuts, and container bracket

BPTNA:

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

Item number	Description	
1	BST1420118-VS	Bolt - set - ¼-20 x 1 ½ in. - stainless steel - Vibra-Seal
2	TN1420	Thumb nut - ¼-20 x 1 ¼ in. - PP - brass insert - assembled with tether

VLVA-BVPVC34:

Suction valve assembly - includes ¾ in. PVC valve, bushing, ¾ in. hose barb elbow, and screw band clamp

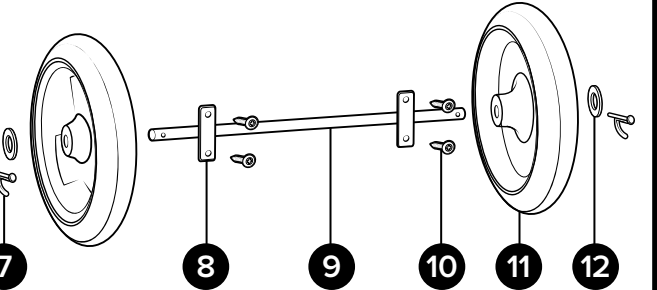
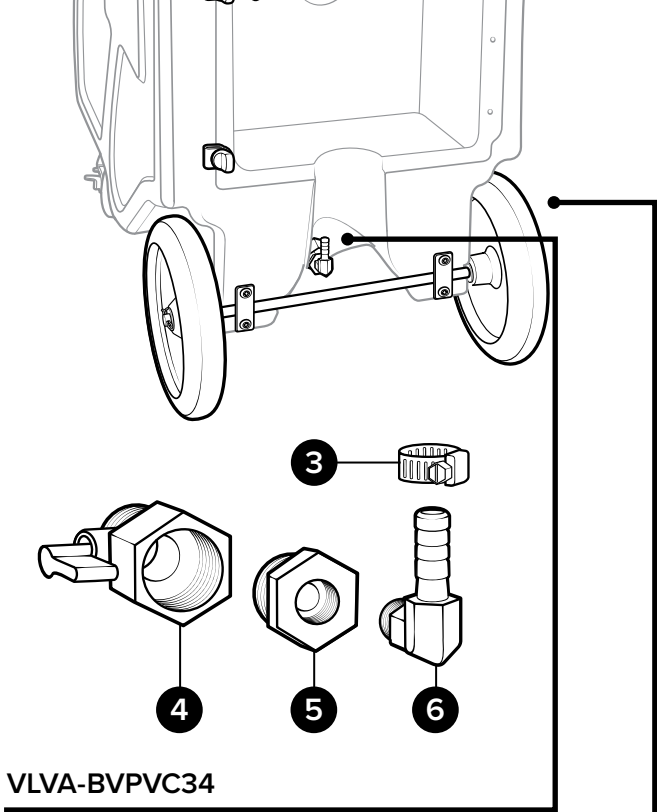
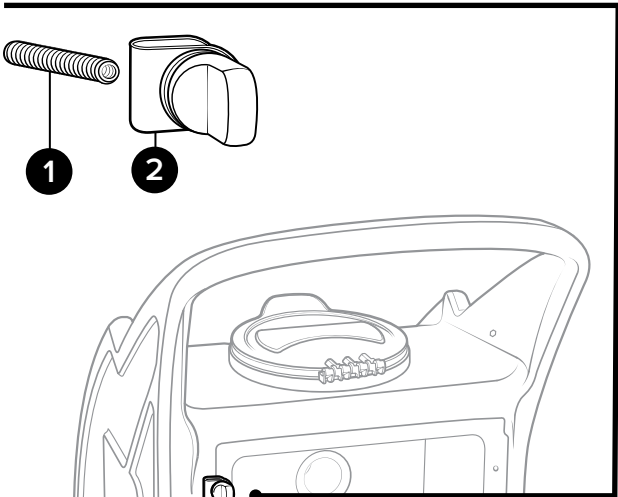
Item number	Description	
3	SSC38	Screw band clamp - stainless steel - for ¾ in. hose
4	BVPVC34MF	Ball valve - PVC - ¾ NPT to ¾ FNPT - Buna seal
5	HHPB3414	Hex head poly bushing ¾ MPT x ¼ FPT
6	HBSSEL1438	Hose barb - stainless steel - elbow - ¼ in. MPT x ¾ in. barb

WHLA-AXL18:

10 in. wheel assembly - includes 18 in. stainless steel axle, axle plate, bolts, washers, and cotter pins

Item number	Description	
7	COT	Cotter pin - stainless steel - ⅛ in. dia x 1 in. long
8	PLSS-AXL	Axle plate - stainless steel - 2.5 in. x 1 in. - 2 holes
9	AXL18	Axle - stainless - 0.625 dia. x 18.31 in.
10	B142012-VS	Bolt - ¼-20 x ½ in. - stainless steel - truss head Phillips - Vibra-Seal
11	W10	Wheel - 10 in. - non-marking
12	FW58	Flat washer for ⅝ in. od pipe or axle - stainless steel - 0.64 in. id x 1.2 in. od x 0.05 in. thk

BPTNA



WHLA-AXL18

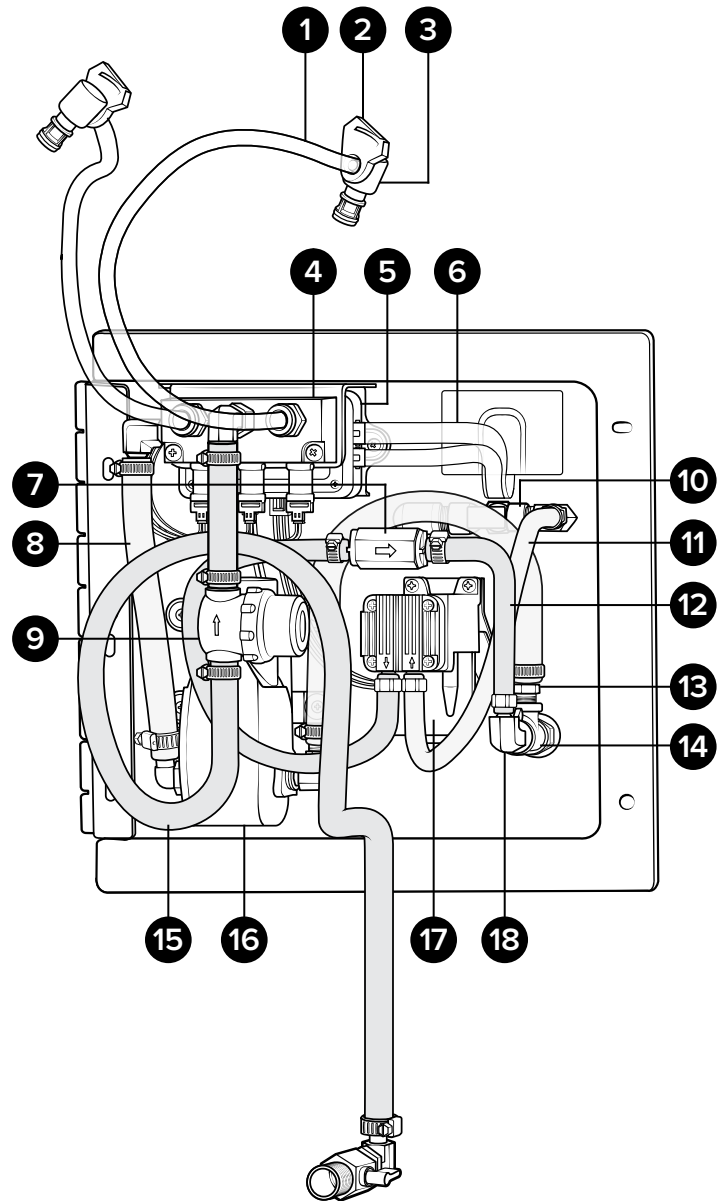
Back Plate Assembly

Inside view

PA-PFRS38-BP:

Plate assembly for portable foam rinse sanitize battery unit - 24 Volt battery and air compressor - 3/8 in. discharge

Item number		Description
1	H14CL-PV	1/4 in. id 3/8 in. od clear hose - PVC - available per ft.
2	CLMPTB38-ADJ	Clamp - plastic - for 3/8 in. od tube - adjustable
3	QCPP-PLG-HBEL14	Quick connect plug - PP body with Hastelloy spring - elbow barb for 1/4 in. id hose
4	MNVA-FRS-WF	Manifold and valve assembly includes manifold and bullet valves - with fittings
5	LVRC-24V-MC-FRS	Low voltage relay controller 24 Volt with motor controller
6	MSW-FRS	Membrane switch for FRS
7	CV14-HT	Check valve - 1/4 in. barbs - 1 lb. - stainless spring and ball - Viton seals - PVC body - gray - high temp
8	H38BL-F	3/8 in. id blue hose - hybrid TPE available per ft.
9	STR38-IL-80	In line strainer - 2x 3/8 hose barb - EPDM gasket - #80 mesh stainless steel screen - gray bowl
10	NV14	Needle valve - 1/4 in. NPT - includes black knob
11	H14BL-F	1/4 in. id blue hose - hybrid TPE available per ft.
12	H14BK-HT	1/4 in. black hose - high temp EPDM rubber - available per ft.
13	HBSS1438	Hose barb - stainless steel - 1/4 in. MPT x 3/8 in. barb
14	SST14	Stainless tee 1/4 FPT
15	H38BK-HT	3/8 in. black hose - high temp EPDM rubber - available per ft.
16	EP24VDC-1-PS-MLX	Electric fluid pump - 24 VDC - 1 GPM open flow - 40 PSI max - Viton seals - Santo diaphragm includes pressure switch and molex connector
17	ACA-AC24VDC-1.4	24V air compressor assembly - includes 1 lb. SS check valve, hoses, and screw band clamps
18	HBSEL1414	Hose barb - stainless steel - elbow - 1/4 in. MPT x 1/4 in. barb



Back Plate Assembly

Back view

PA-PFRS38-BP:
Plate assembly for portable foam rinse sanitize battery unit - 24 Volt battery and air compressor - 3/8 in. discharge

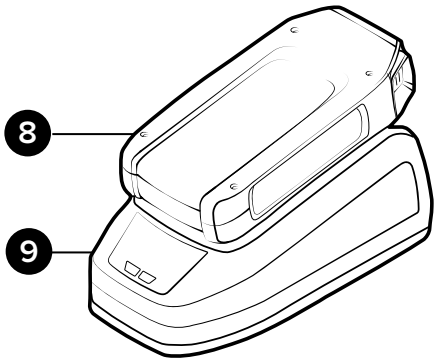
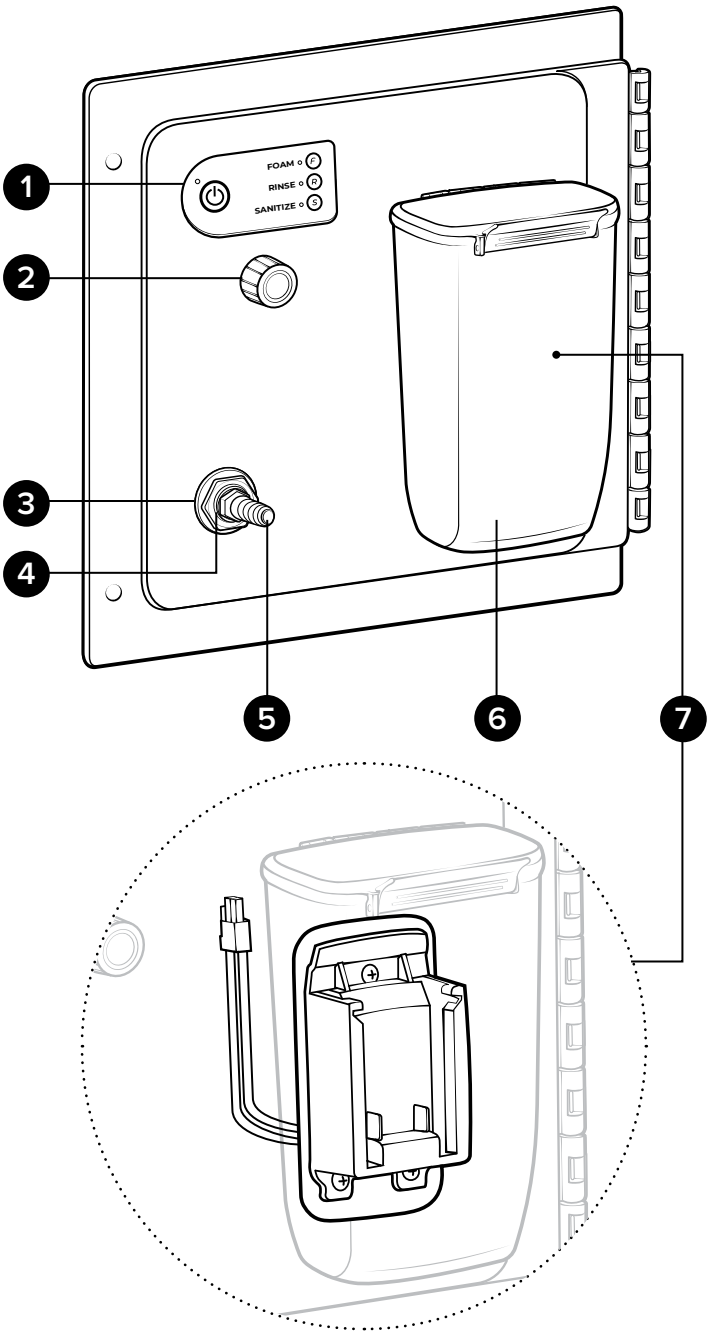
Item number		Description
1	MSW-FRS	Membrane switch for FRS battery unit
2	NV14-HNDL	Black knob for needle valve
3	SSSFN12	Serrated stainless steel flange nut - 1/2 in.
4	SSA14BKH	Bulkhead adapter - stainless steel 1/4 in. NPT x 1/4 in. NPSM
5	HBSS1438	Hose barb - stainless steel - 1/4 in. MPT x 3/8 in. barb
6	BLI-24V-BB	Battery box assembly - Equip Series - includes, box, lid, latch, pins, and gaskets
7	BLI-24V-RCVR	Battery receiver interface plate for BLI-24V system

Battery and Charger*

*not included with backplate assembly

Item number		Description
8	BLI-24V-4AH	Battery - lithium ion - 24V 4AH - includes manual
9	BLI-24V-CHRGR	Battery - lithium ion - 24V - charger - includes NA power cord and manual

Note: Refer to battery and charger user manuals for more information.



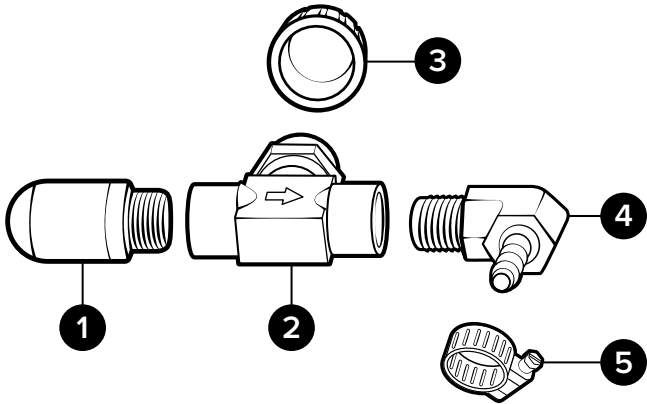
*Not included with backplate assembly

Back Plate Sub-assemblies

NVA-NV14-BP-EL:

Needle valve assembly - includes needle valve, polyethylene muffler, hose barb, and screw band clamp

Item number		Description
1	MFLRPE14	Muffler - ¼ in. male NPT - polyethylene
2	NV14	Needle valve - ¼ in. NPT - includes black knob
3	NV14-HNDL	Black knob for needle valve
4	HBSS1414	Hose barb - stainless steel - ¼ in. MPT x ¼ in. barb
5	SSC14	Screw band clamp - stainless steel - for ¼ in. hose



NVA-NV14-BP-EL

Back Plate Sub-assemblies

MNVA-FRS-WF:

Manifold and valve assembly for FRS units - includes manifold, bullet valves, wiring, and fittings

Item number	Description	
1	HBSEL1438	Hose barb - stainless steel - elbow - ¼ in. MPT x ⅜ in. barb
2	QF1438	Quick fit - ¼ MPT x ⅜ od tube - polypropylene
3	SSA14	Stainless adapter ¼ MPT x ¼ FPT
4	MNV-FRS	Manifold and valve assembly for FRS - includes manifold and bullet valves - no fittings or wiring
5	WRHN-FCV-FRS-JST	Wire harness - flow control valve - JST connectors

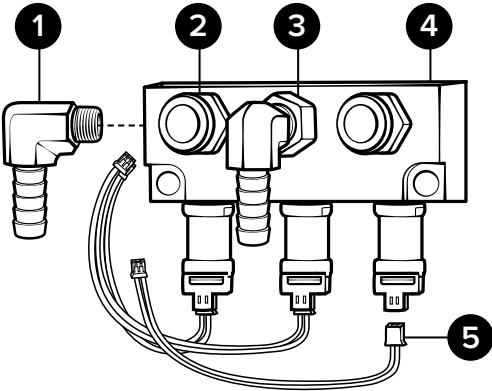
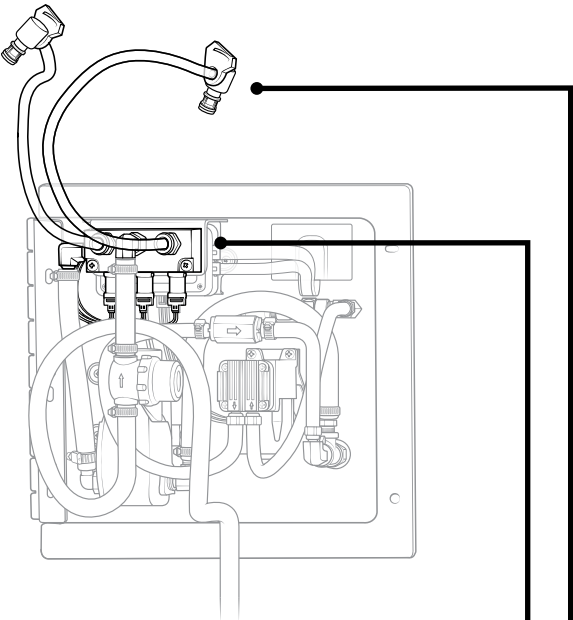
SCTNA-MNV-F:

Suction assembly for manifold valve - includes hose, quick connect plug elbow with foam label, and adjustable clamp

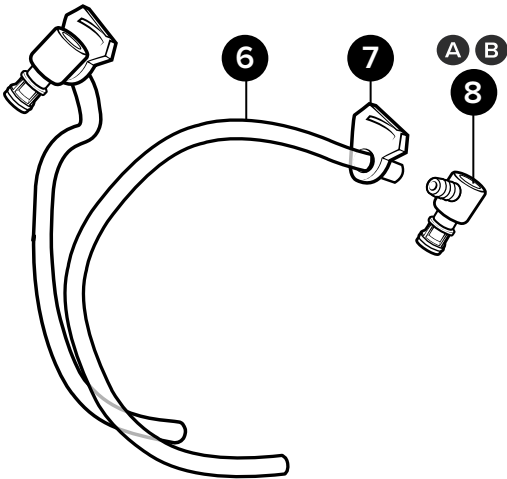
SCTNA-MNV-S:

Suction assembly for manifold valve - includes hose, quick connect plug elbow with sanitize label, and adjustable clamp

Item number	Description	
5	H14CL-PV	¼ in. id ⅜ in. od clear hose - PVC - available per ft.
6	CLMPTB38-ADJ	Clamp - plastic - for ⅜ in. od tube - adjustable
7	A QCPP-PLG-HBEL14-F	Quick connect plug - PP body with Hastelloy spring - elbow barb for ¼ in. id hose includes foam label
	B QCPP-PLG-HBEL14-S	Quick connect plug - PP body with Hastelloy spring elbow barb for ¼ in. id hose includes sanitize label



MNVA-FRS-WF



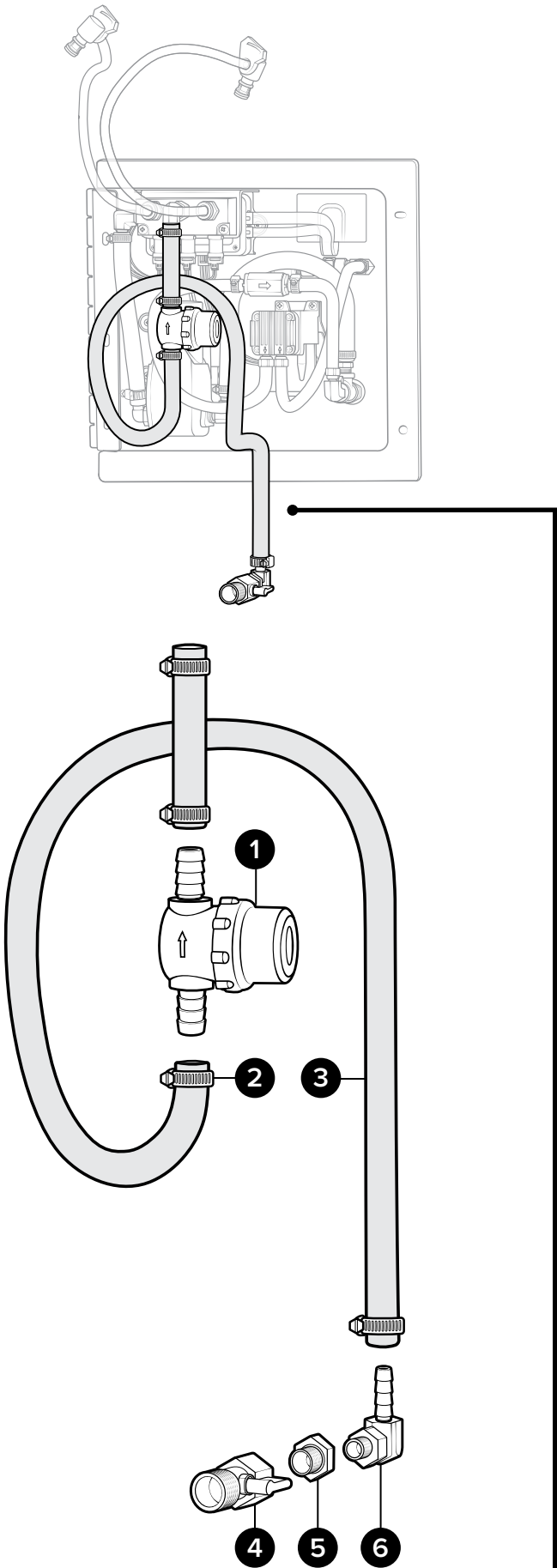
SCTNA-MNV-F
SCTNA-MNV-S

Back Plate Sub-assemblies

SCTNA-PFRS-BP:

Suction assembly for battery power portable foam rinse sanitize units - includes in-line strainer, high temp hose, suction valve, and screw band clamp

Item number		Description
1	STR38-IL-80	In line strainer - 2x 3⁄8 hose barb - EPDM gasket - #80 mesh stainless steel screen - gray bowl
2	SSC38	Screw band clamp - stainless steel - for 3⁄8 in. hose
3	H38BK-HT	3⁄8 in. black hose - high temp EPDM rubber - available per ft.
4	BVPVC34MF	Ball valve - PVC - 3⁄4 NPT to 3⁄4 FNPT Buna seal
5	HHPB3414	Hex head poly bushing 3⁄4 MPT x 1⁄4 FPT
6	HBSEL1438	Hose barb - stainless steel - elbow - 1⁄4 in. MPT x 3⁄8 in. barb



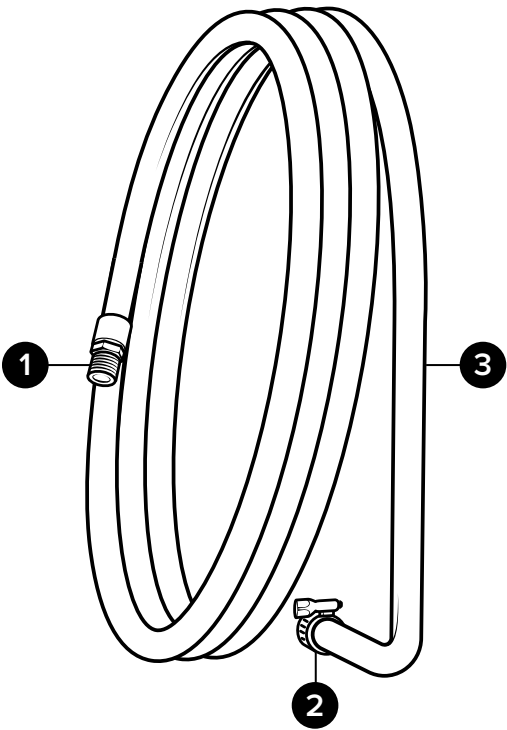
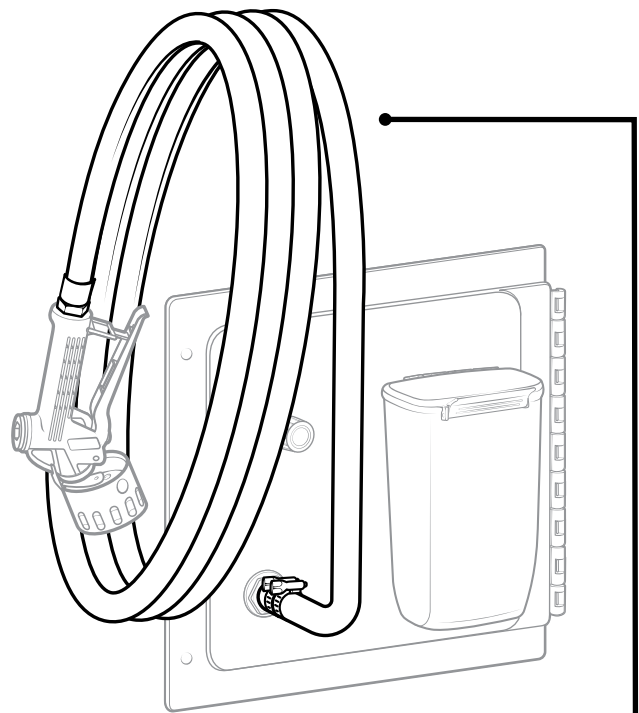
SCTNA-PFRS-BP

Hose Assembly

HA38BL-8:

Hose assembly - 8 ft. of 3/8 in. blue hose - includes ferruled hose barb

Item number		Description
1	HBSS1238	Hose barb - stainless steel - 1/2 in. MPT x 3/8 in. barb
2	SSC38	Screw band clamp - stainless steel - for 3/8 in. hose
3	H38BL-F	3/8 in. id blue hose - hybrid TPE - available per ft.



HA38BL-8

Wand Assembly

PSGA38-4-FRS*:

Poly spray gun assembly for 3/8 in. hose - FRS - includes selectable nozzle with four tips and labels, SS hose barb, and screw band clamp

SNZA-PSG-4-FRS*:

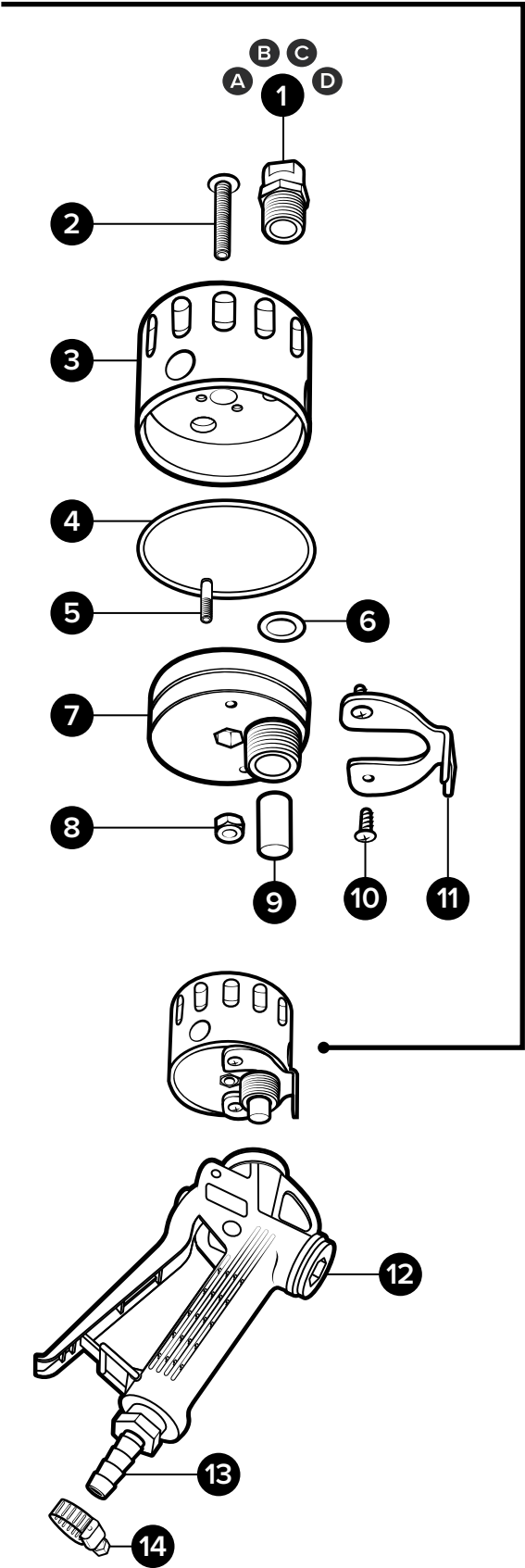
Selectable nozzle assembly for poly spray gun on FRS units- includes selector nozzle, four spray tips, and labels

Item number		Description
1	A ST8030SS	Spray tip - 80 degree - 3.0 GPM - stainless - 1/4 MPT - Foam
	B ST2508SS	Spray tip - 25 degree fan - 0.8 GPM - stainless - 1/4 MPT - Rinse
	C STSLD0009SS	Spray tip - solid stream - 0.9 GPM - stainless steel - 1/4 in. MPT - Rinse
	D ST4003SS	Spray tip - 40 degree fan - 0.3 GPM - stainless - 1/4 MPT - Sanitize
2	B1032114	Bolt - 10-32 x 1 1/4 in. - stainless steel - truss head Phillips
3	MN-SNZ-CLR-4*	Manifold - 4 way selectable nozzle - collar - black - polypropylene
4	ORV-034	O-ring - Viton - dash number 034 - durometer 75A
5	PIN-LNSD	Pin - long nose spring detent - stainless steel - 3.6 mm diameter
6	ORV-111	O-ring - Viton - dash number 111 - durometer 75A
7	MN-SNZ-BS	Manifold - selectable nozzle - base - black - polypropylene
8	LN1032	Locknut - 10-32 - stainless steel - nylon insert
9	MXPES-12	Mixing media - white polyester - wad - fine porosity - 1/2 in. dia x 7/8 in. tall
10	S838	Screw - #8 x 3/8 in. - stainless steel - round head Phillips
11	BRKT-SNZ-PSG	Bracket - stainless steel - for securing selectable nozzle to PSG12

Item number		Description
12	PSG12	Poly spray gun with 2x 1/2 in. straight thread - gray handle with red clip - 316SS internal spring - includes 2x o-ring
13	HBSS1238	Hose barb - stainless steel - 1/2 in. MPT x 3/8 in. barb
14	SSC38	Screw band clamp - stainless steel - for 3/8 in. hose

***Note:** 3 nozzle option also available for purchase. Ask your sales rep for more details.

SNZA-PSG-4-FRS



Jug Assembly

2.5 Gallon

JGA-2.5N-CPBK-S:

2.5 gallon natural* chemical jug assembly - includes black* vented cap, suction fitting with strainer, straight hose barb for ¼ in. id hose, and PP quick connect socket

CPA-35BK-VNT-CHN:

Cap assembly - 3.5 in. polypropylene - black* - vented - includes check valve, SS bead chain tether, and gasket

Item number		Description
1	B103234-SH-VNT	Bolt - 10-32 x ¾ in. - stainless steel - socket head - vented
2	CP-35BK	Cap - 3.5 in. - polypropylene black*
3	CHNA-CP35	Chain asm - bead chain with screw mount links - for CP-35 cap to jug
4	CV-CP35	Check valve - black EPDM
5	GSKT-CP35	Gasket - EPDM - for 3.5 in. caps

Item number		Description
6	JG-2.5N	2.5 gal natural* chemical jug - jug only

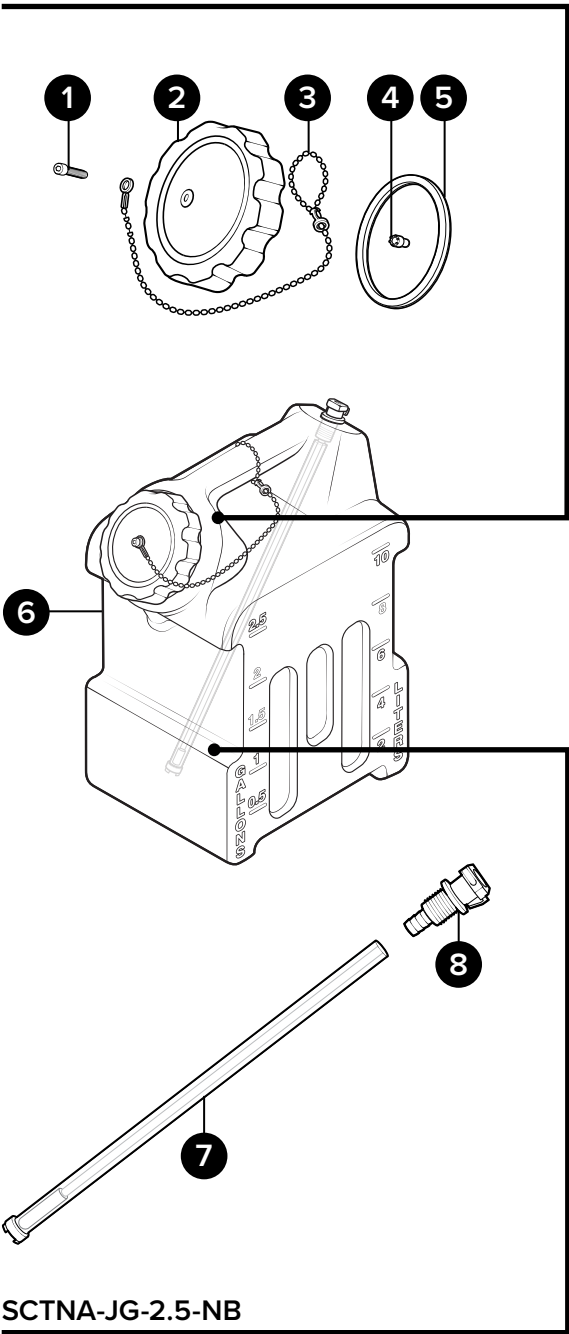
* Additional colors available, see datasheet for options.

SCTNA-JG-2.5-NB:

Suction assembly for 2.5 gallon chemical jug - includes hose, foot strainer, and quick connect socket

Item number		Description
7	SCTNA-JG-2.5-NF	Suction assembly - 2.5 gal chemical jug - hose and foot strainer - no fittings
8	QCPP-SCKT-PM	Quick connect socket - PP body with Hastelloy spring - barb for ¾ in. id hose - 11/16-24 panel mount threads

CPA-35BK-VNT-CHN



Jug Assembly

5 Gallon

JGA-5N-CPBK-S:

5 gallon natural* chemical jug assembly - includes black* vented cap, suction fitting with strainer, straight hose barb for ¼ in. id hose, and PP quick connect socket

CPA-35BK-VNT-CHN:

Cap assembly - 3.5 in. polypropylene - black* - vented - includes check valve, SS bead chain tether, and gasket

Item number		Description
1	B103234-SH-VNT	Bolt - 10-32 x ¾ in. - stainless steel - socket head - vented
2	CP-35BK	Cap - 3.5 in. - polypropylene black*
3	CHNA-CP35	Chain asm - bead chain with screw mount links - for CP-35 cap to jug
4	CV-CP35	Check valve - black EPDM
5	GSKT-CP35	Gasket - EPDM - for 3.5 in. caps

Item number		Description
6	JG-5N	5 gal natural* chemical jug - jug only

* Additional colors available, see datasheet for options.

SCTNA-JG-5-NB:

Suction assembly for 5 gallon chemical jug - includes hose, foot strainer, and quick connect socket

Item number		Description
7	SCTNA-JG-5-NF	Suction assembly - 5 gal chemical jug - hose and foot strainer - no fittings
8	QCPP-SCKT-PM	Quick connect socket - PP body with Hastelloy spring - barb for ¾ in. id hose - ¼-24 panel mount threads

CPA-35BK-VNT-CHN

