Part # L20-361 R2
EX257375
10/1/2013

PFS

OWNER'S MANUAL

INSTALLATION, INSPECTION, MAINTENANCE & RECHARGE

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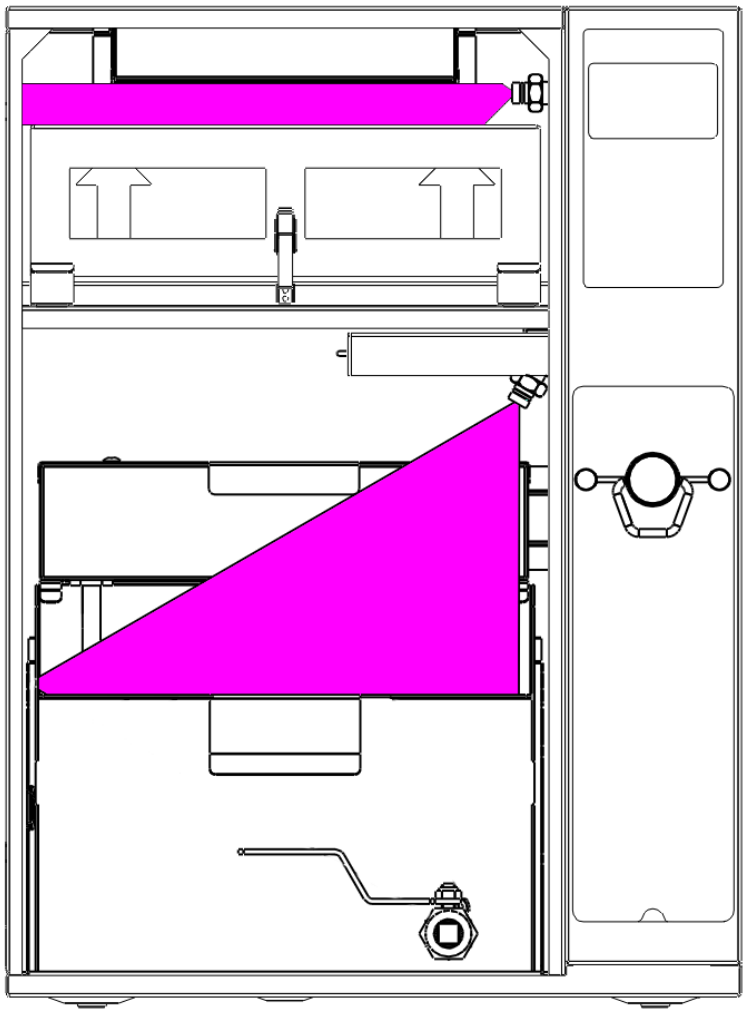
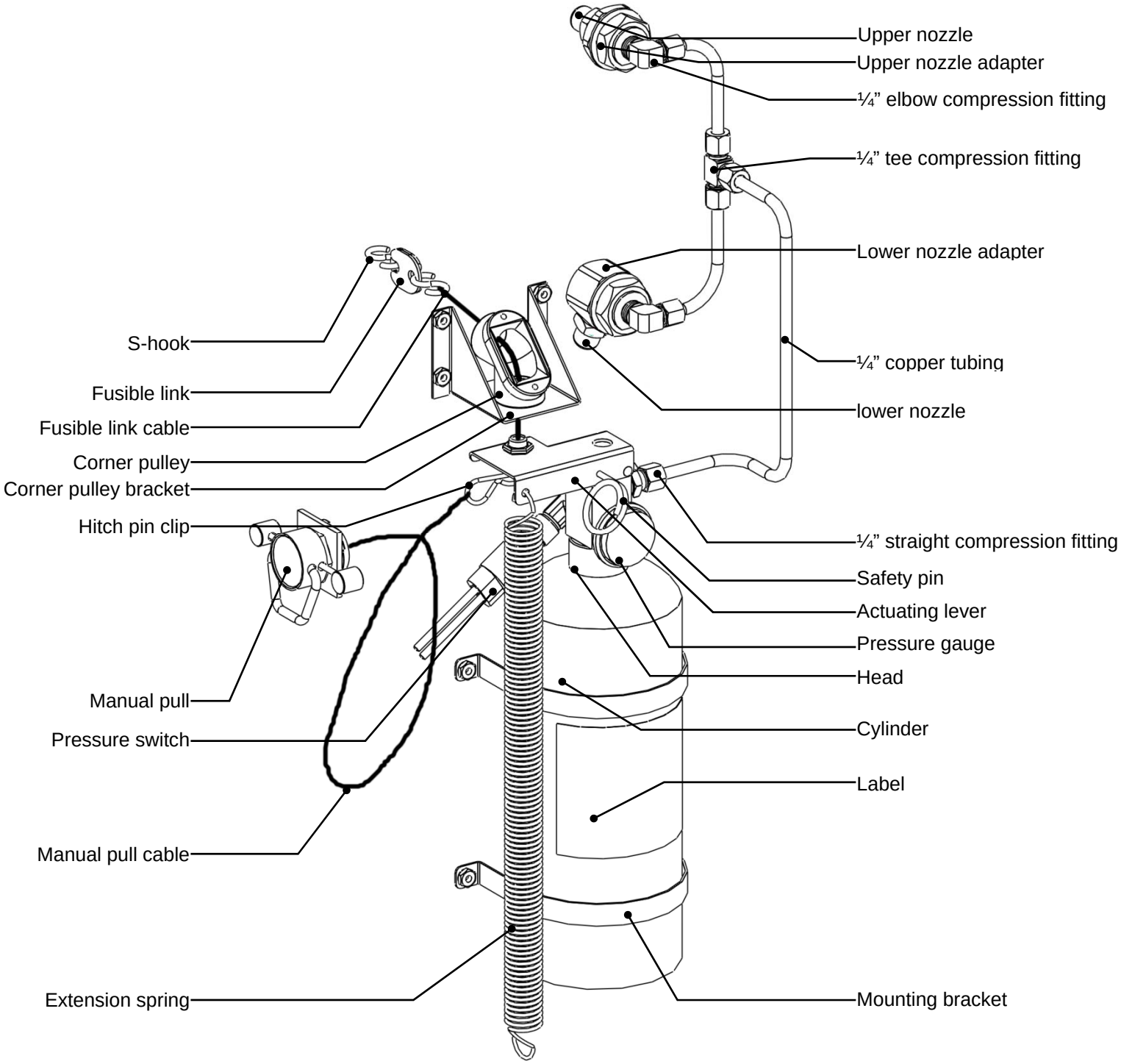


Figure 1: PFS shown in PFC Series Fryer

PFS Automatic Extinguisher

This manual is intended for use with the PFS automatic extinguisher. Those who install, operate, inspect or maintain the PFS should read this entire manual. Specific sections will be of particular interest depending on one's responsibilities.

The installation limitations for the PFS are outlined in this manual. The installation, inspection, testing, maintenance and recharge of the PFS is to be performed by Perfect Fry Company authorized service personnel only.



GENERAL DESCRIPTION

The PFS consists of a cylinder assembly (with pressure switch and gauge), actuating lever, fusible link assembly, manual pull station, and two nozzles. It is designed and acceptable for use in areas that have ambient conditions between 0°C (32°F) and 50°C (120°F).

The PFS must be stored above 0°C (32°F)

OPERATION

Automatic Operation

Upon the detection of a fire, the PFS will automatically operate. The fusible link rated at 138ºC (280ºF) will operate when exposed to the fire and operate the PFS automatic extinguisher unit. When operated, the PFS unit will discharge wet chemical agent through the provided discharge piping and distribution nozzles.

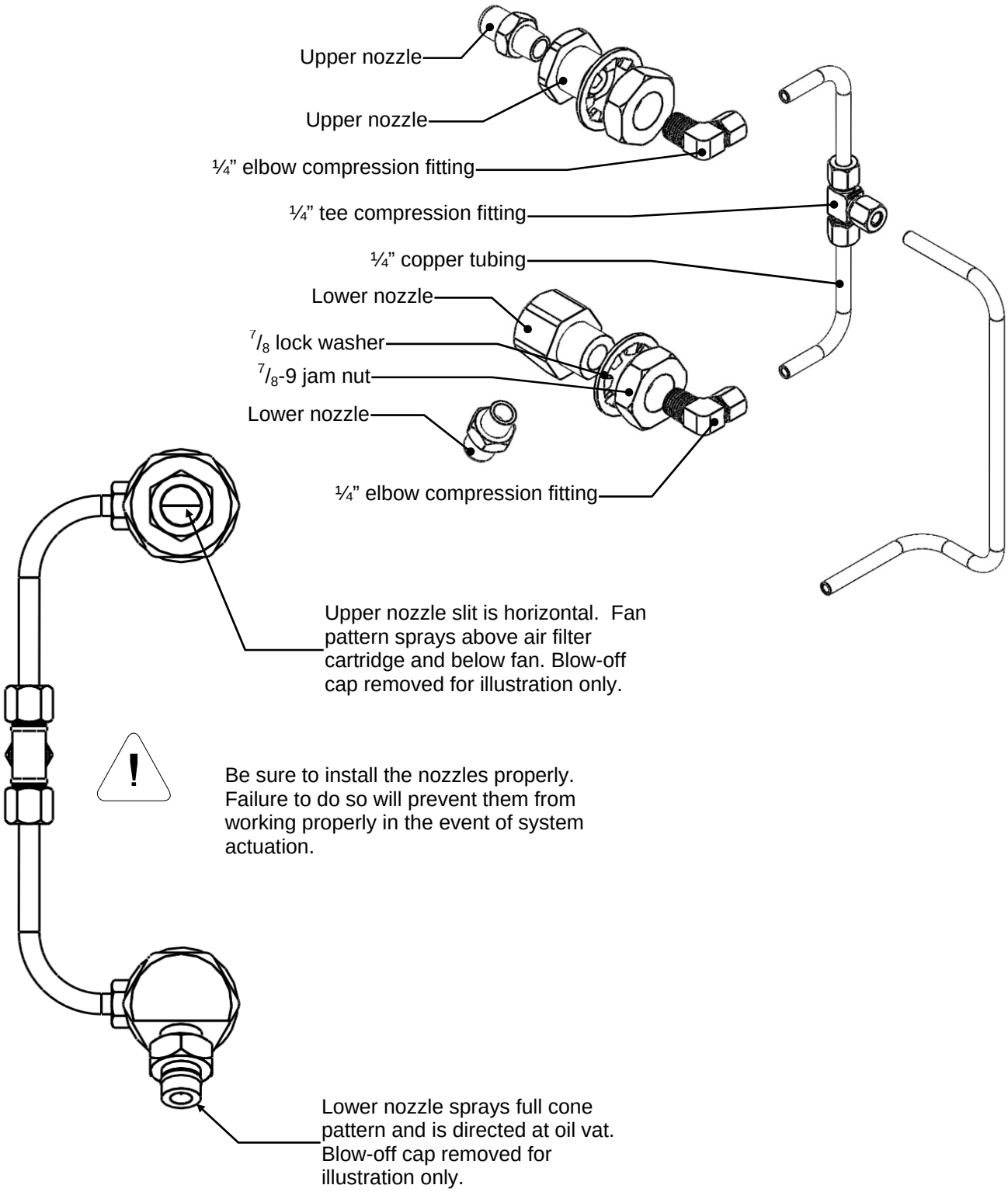
Manual Operation

The PFS unit can also be operated manually by pulling the remote lever (to be mounted on the front of the cooking appliance) that is clearly marked “In Case Of Fire - PULL”.

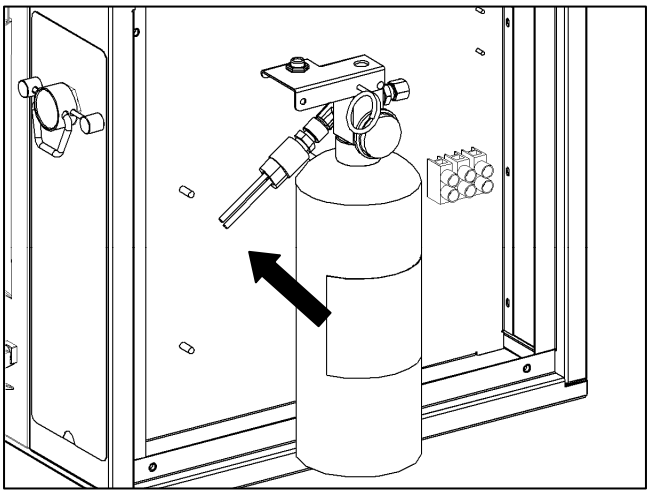
Power shut-off is also achieved by system operation. If the pressure in the cylinder(s) drops below 92 psi, the pressure switch opens, deactivating the power relay causing the appliance to de-energize.

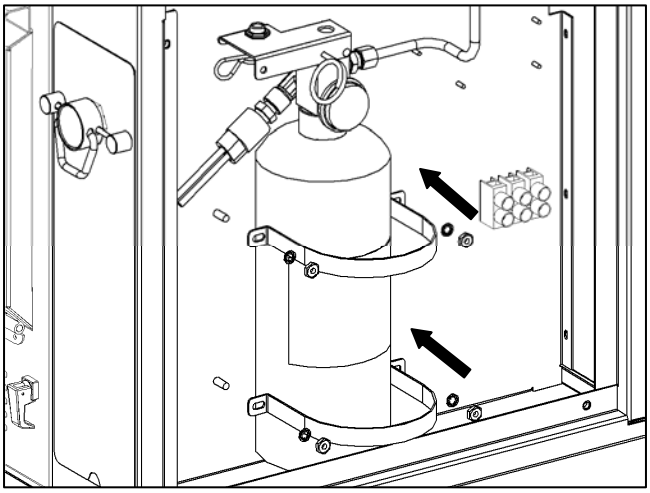
PFS Installation

1. Install nozzle adapters, nozzles, and tubing and compression fittings as shown below. Appliance wall should be located between adapters and lock washer. Tighten all adapters, compression fittings and pipe threads securely. 1-$^{5}/_{16}$", ¾" & ½" open end wrenches are required.

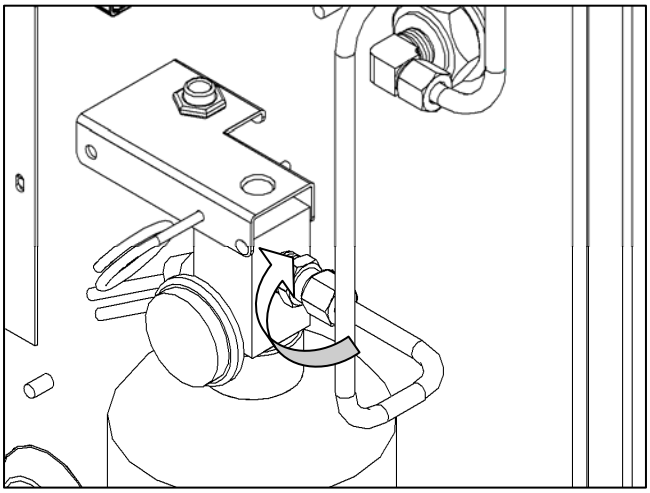


2. Install PFS to appliance with mounting brackets and hardware. Tighten nuts with $^{3}/_{8}$" nut driver or open end wrench.

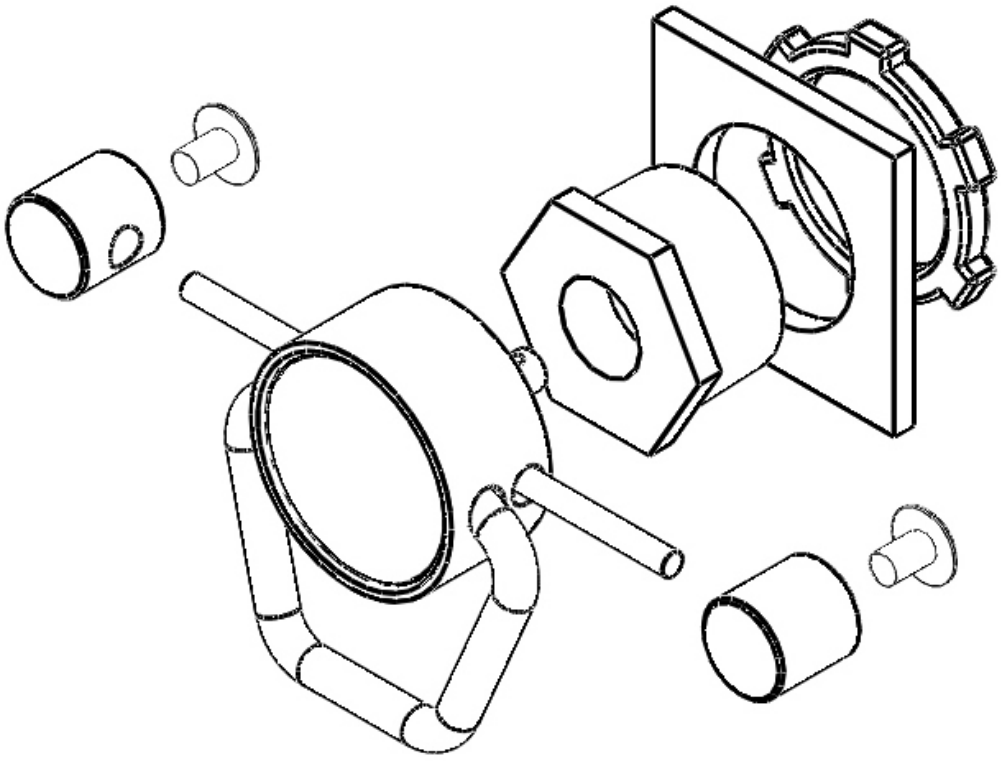




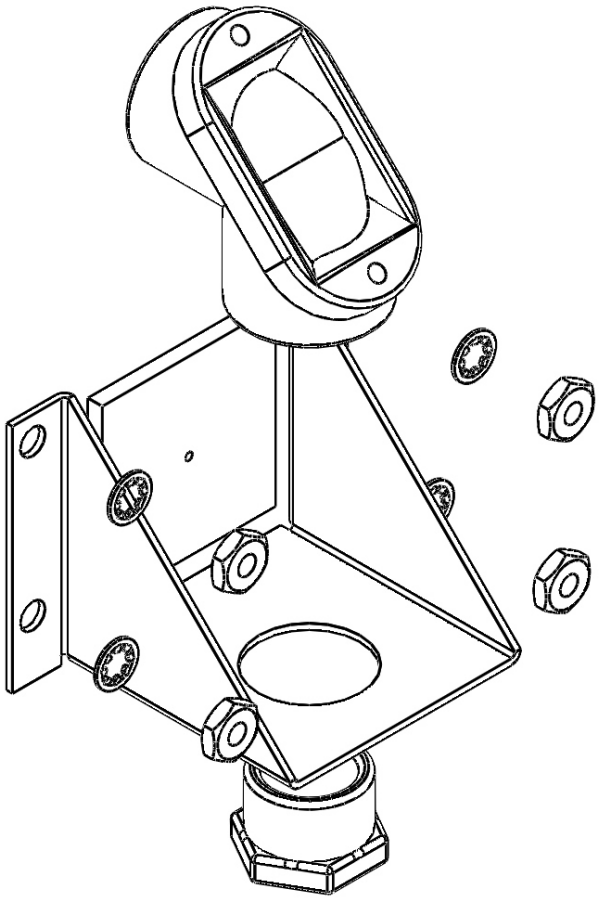
3. With ½" open end wrench, attach tubing to ¼" compression fitting.



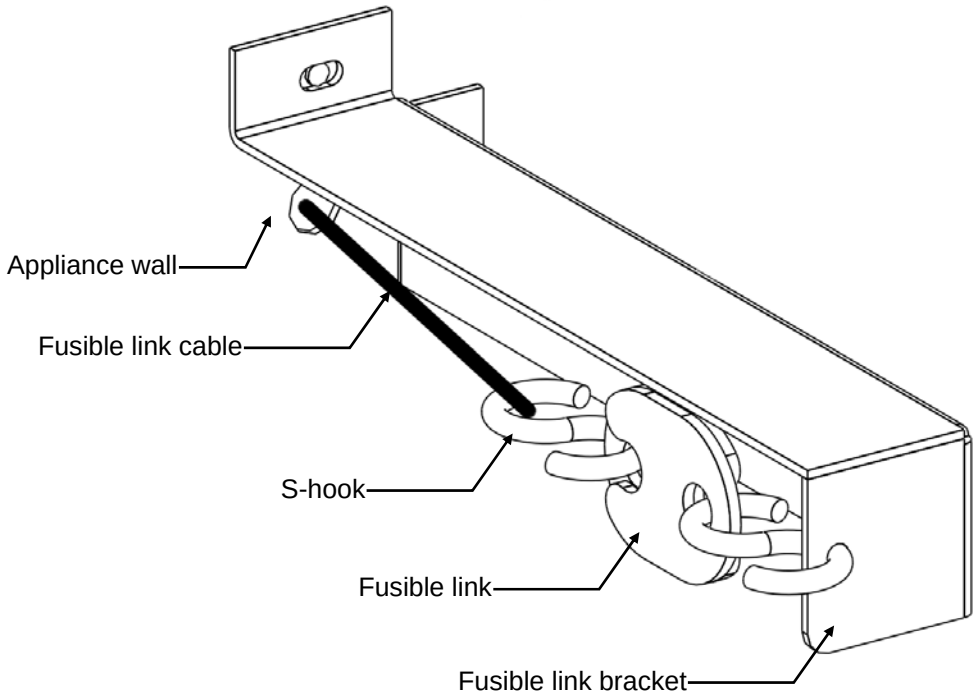
4. Install manual pull.



5. Install corner pulley. Tighten nuts with $^{3}/_{8}$" nut driver or open end wrench.

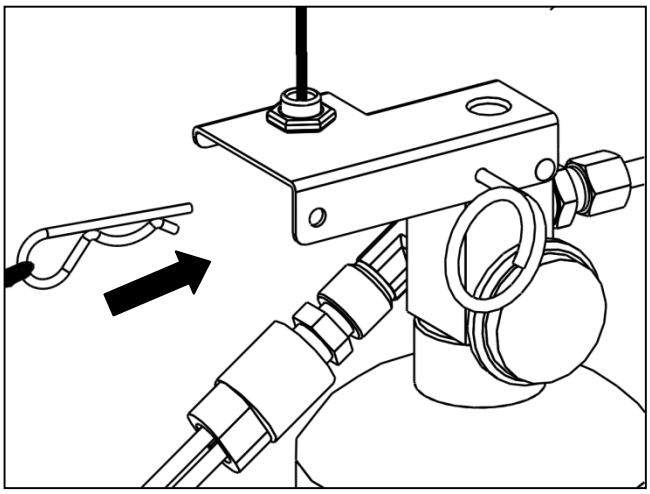


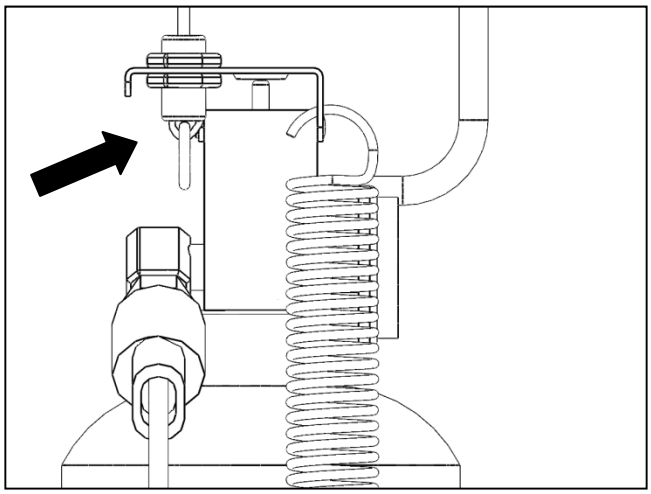
6. Install 138°C / 280°F fusible link (6GT587) between two s-hooks and attach far ends to fusible link bracket and fusible link cable (6GT599-2). Route fusible link cable through appliance wall. Use small flat screwdriver or small pliers to help pull cable through if necessary.



7. **INSTALL SAFETY PIN**.

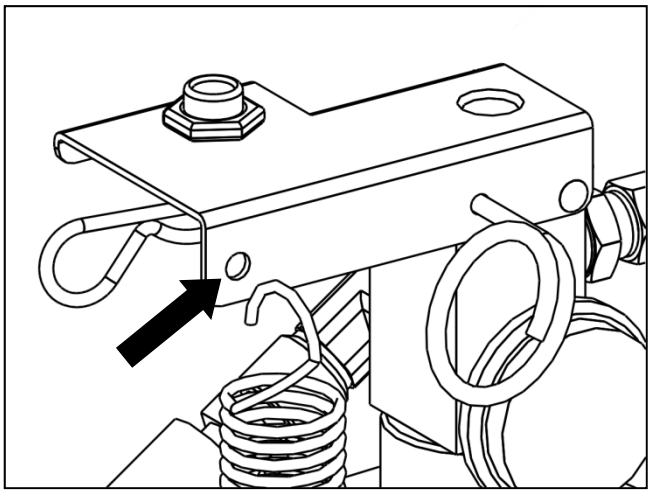
8. Run fusible link cable through adjuster and attach hitch pin clip from manual pull cable to underside of actuating lever. Move adjuster as needed to ensure proper tension on cable and keep actuating lever horizontal.





9. Attach extension spring to actuating lever and appliance cutout.

Before arming the PFS, ensure that the safety pin is in place under the actuating lever.



10. Connect pressure switch wires. Switch is designed for normally closed operation within appliance to control relay/controller (and therefore shut down appliance). It must be installed according to ratings listed in table below.

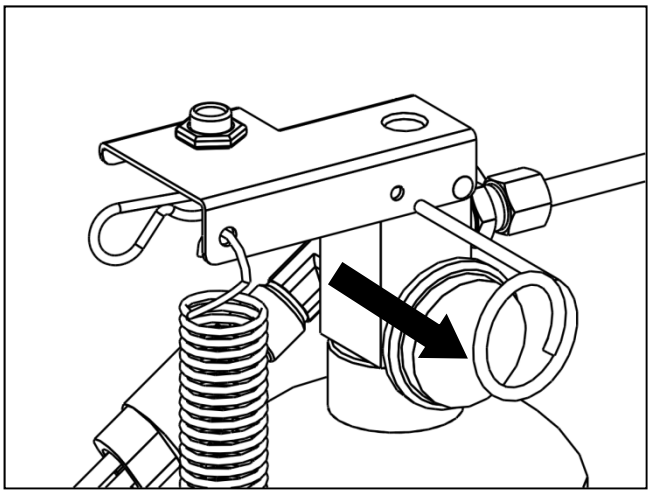
Switch Ratings	Switch Operation	Switch Configuration	Application Voltage	Electrical Current
AC Voltage	Auto Reset	SPST (NC)	5-28 VDC	5-400 mA
DC Voltage	Auto Reset	SPST (NC)	120/240	5.8/2.9 A

The appliance will not operate and will display a system error message if wires are not connected.

Normally Closed SPST Switch

11. Remove safety pin. The PFS is now armed.

The safety pin is for maintenance purposes only. If the safety pin is not removed, the PFS will not operate. THE PIN MUST BE REMOVED.



Inspection & Maintenance

The PFS Automatic Extinguisher must be serviced on a regular basis. Three types of servicing are required:

Monthly - an inspection or "quick check" must be conducted by the owner/operator and include verification of the following:

1) The PFS is in its proper location.

2) The PFS shows no physical damage or condition that might prevent operation.

3) The pressure gauge is in the green operating range.

4) The maintenance tag is in place and is up to date.

5) The manual pull is unobstructed.

6) The nozzle blow-off caps are intact and undamaged.

Semi-Annually / Yearly – maintenance must be conducted by authorized service personnel (as per NFPA 17A) and include the following:

1) A check to see that the hazard has not changed.

2) Examination of the fusible link, cylinder, tubing, nozzles and all auxiliary equipment.

3) Fusible links must be replaced at least annually from the date of installation. They must be destroyed when removed. They need to be replaced with the proper rated link (6GT587). A fusible link loaded with grease or other material can result in an excessive delay in actuation.

4) Verification that the agent distribution piping is not obstructed. Remove the blow-off caps (6GT014) from the nozzles to ensure that they are free of grease build-up and inspect them for deterioration. Replace them as necessary.

5) Where semi-annual maintenance of any wet chemical containers or PFS components reveals conditions such as, but not limited to, corrosion or pitting in excess of manufactured limits, structural damage or fire damage, repairs by soldering, welding, or brazing, the affected part(s) shall be replaced or hydrostatically tested. The hydrostatic testing of wet chemical containers shall follow the applicable procedures outlined in NFPA 17A.

6) All wet chemical systems must be tested for proper operation. A discharge of the wet chemical is normally not part of the test. Simply remove one lead from the pressure switch to initiate appliance shut-down.

7) Where the maintenance of the PFS reveals defective parts that could cause an impairment or failure of proper operation of the PFS, the affected parts must be replaced or repaired.

8) The maintenance report, with recommendations if any, shall be filed with the owner or with the designated party responsible for the PFS.

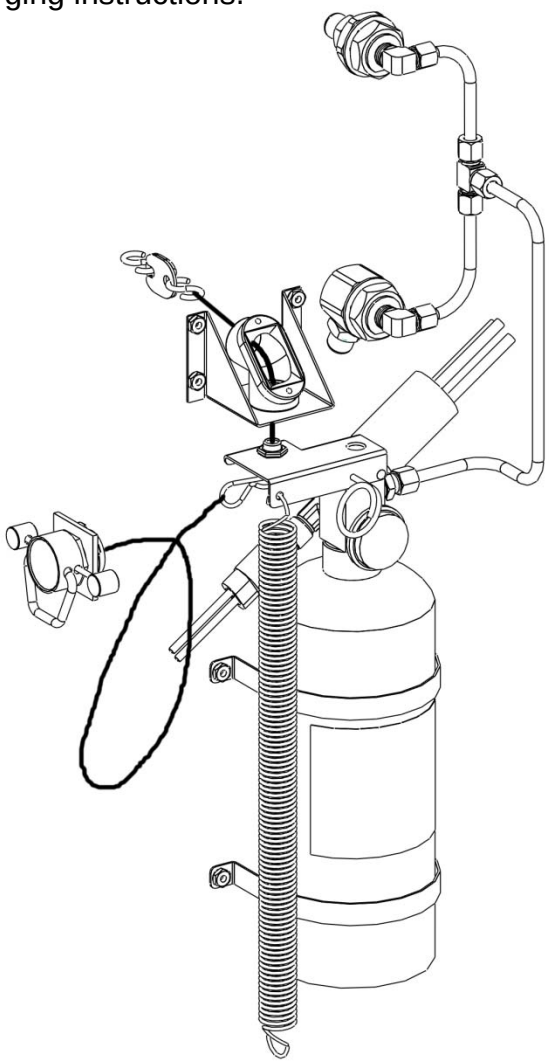
9) The PFS must have a tag or label indicating the month and year the maintenance is performed and identifying the person performing the service. Only the current tag or label must remain in place.

Twelve Year – maintenance must be conducted by authorized service personnel (as per NFPA 17A) and include the following:

1) The wet chemical extinguishing agent must be removed and discarded.

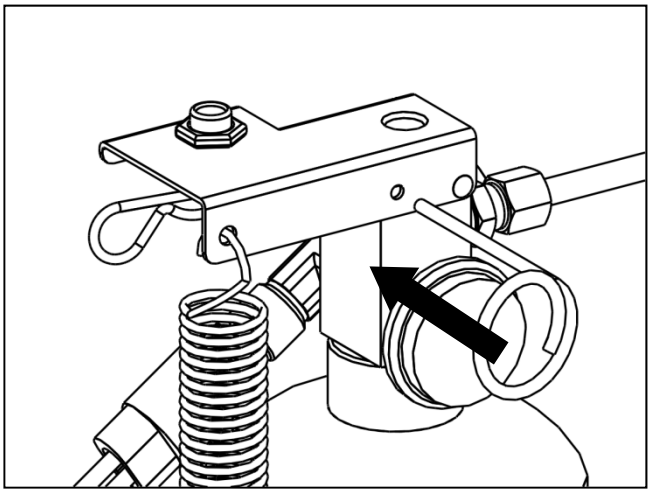
2) The cylinder needs to be hydrostatically tested to 300 psi.

3) If the cylinder shows no signs of rupture or distortion, recharge the PFS as directed in the recharging instructions.

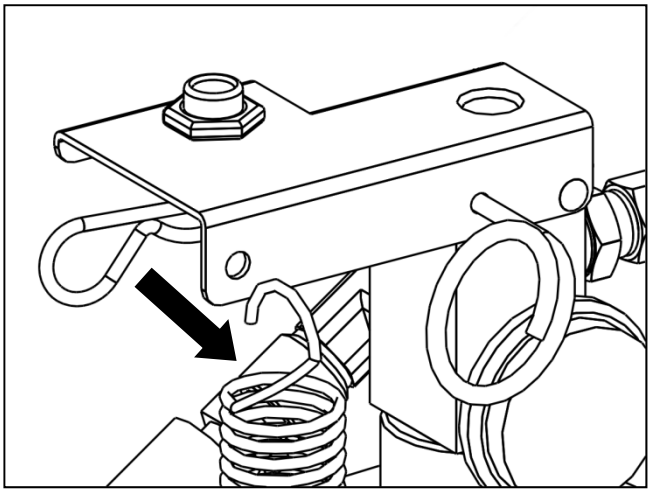


PFS Removal & Recharge

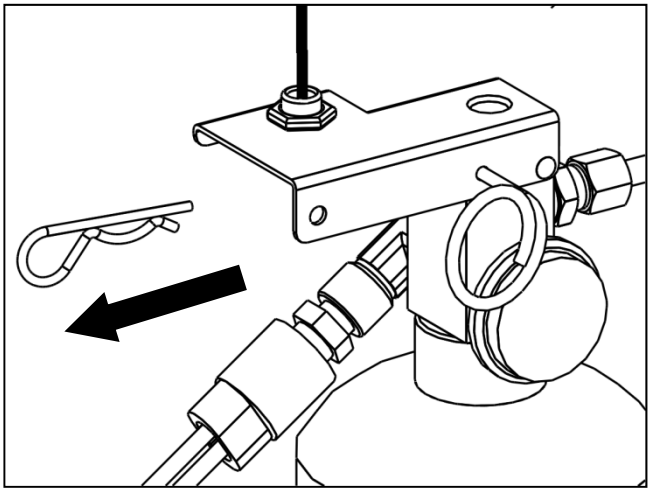
1. **INSTALL SAFETY PIN**.



2. Detach extension spring.

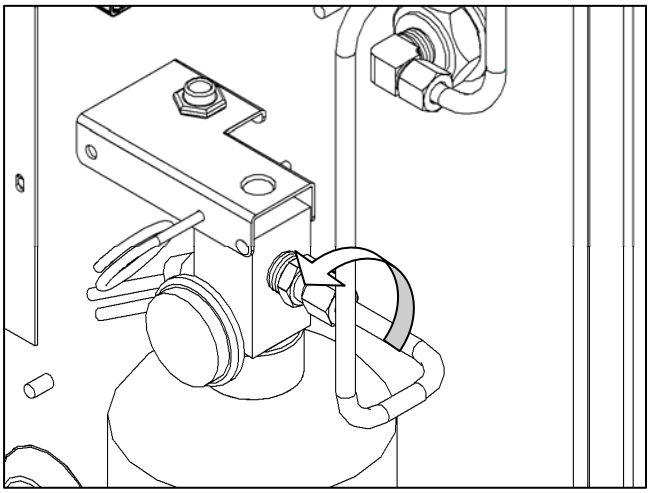


3. Remove hitch pin clip.

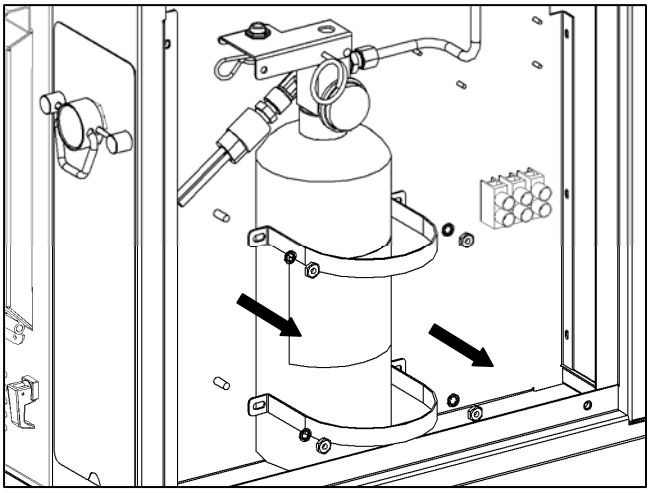


4. Disconnect pressure switch wires.

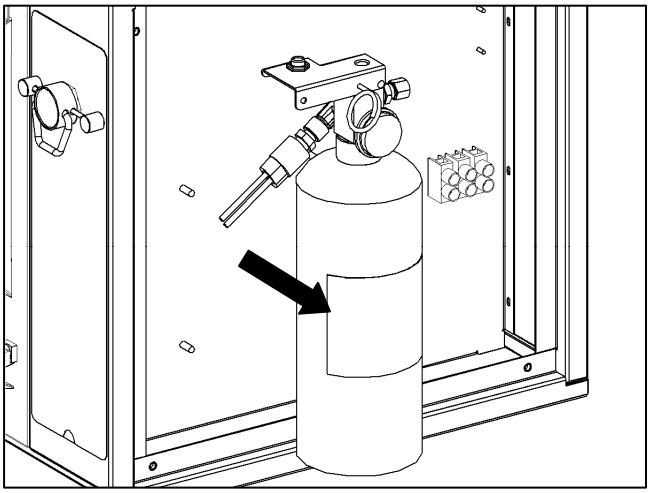
5. With ½" open end wrench, remove tubing from ¼" compression fitting.



6. Remove mounting brackets and hardware.



7. Remove PFS from appliance.

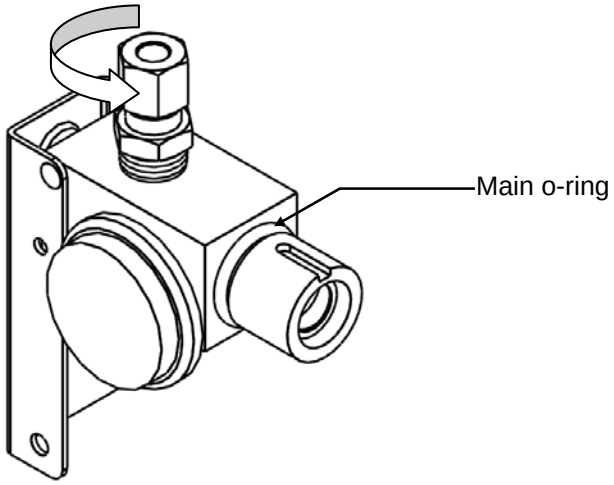


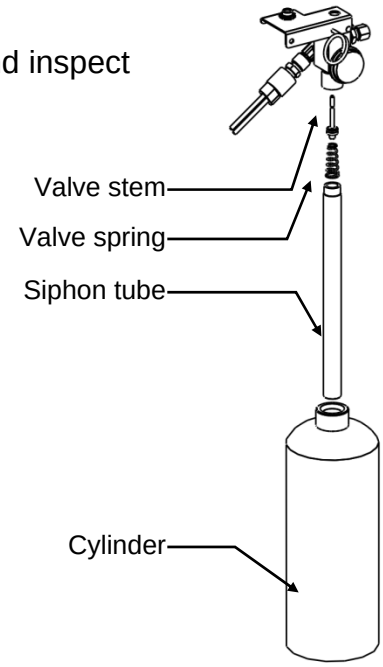
8. Obtain replacement PFS from Perfect Fry or follow steps 9-20.

Ensure the system has fully discharged. If the system is still pressurized, bleed slowly by unscrewing the head from the cylinder until dry nitrogen begins to escape. Failure to do so could cause personal injury or property damage.

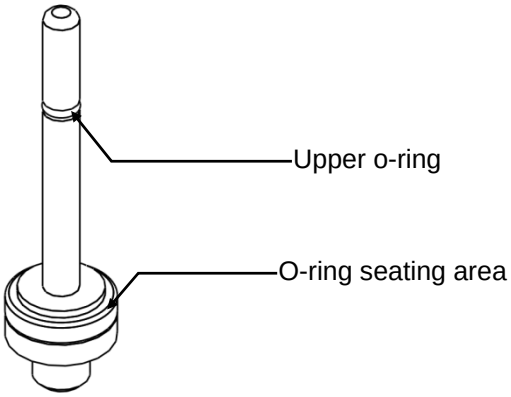
9. Unscrew aluminum head from cylinder. Unscrew siphon tube and remove spring from head.

10. Remove main o-ring (6GV064) from head assembly and inspect for damage. Replace if necessary.





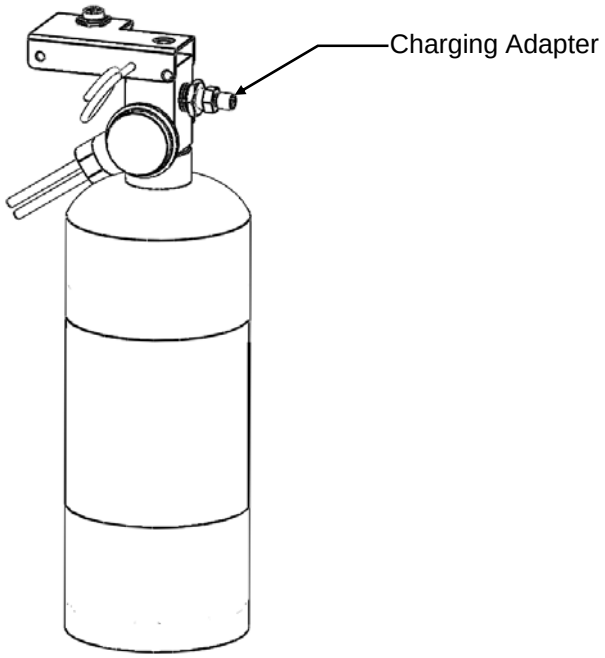
11. Remove valve stem (6GT591) by pressing down on actuating lever. Be careful not to damage seating area or o-ring. Thoroughly rinse all parts with warm water and let dry. Apply a high quality o-ring lube (Parker O-Lube) to all o-rings (two on valve stem and one main one).



12. Remove straight compression fitting from head assembly using a ½" open end wrench. Use a ¼" NPT male fitting with a standard air valve as a recharge adapter.

13. Fill cylinder to rated capacity (1000 mL ±5mL or 33.8 oz. ± ¼ oz.) using only Amerex KP Wet Chemical Agent (6GT015). With a soft cloth, clean any spilled agent from main o-ring seating area, threads of cylinder and cylinder exterior.

14. Reassemble head assembly and thread it back onto cylinder. Tighten head so that it is firmly hand tight.



15. Thread charging adapter (6GTXXX) into head. Set regulator to required pressure based on chart shown below. The normal operating pressure of PFS is 100 psi at 21°C / 70°F. Press actuating lever and pressurize it with dry nitrogen from regulated source until required pressure is reached on in-line calibrated pressure gauge on fill line.

Temperature (°C)	0	5	10	15	20	25	30	35	40
Temperature (°F)	32	41	50	59	67	77	86	95	104
Pressure (psi)	93	95	97	98	100	102	103	105	107

The pressure gauge attached to the extinguishing unit should not be used to determine when the intended charging pressure has been reached. Use the calibrating gauge on the recharge system to determine if the correct pressure is being applied.

16. **INSTALL SAFETY PIN** before removal of regulated nitrogen source. Release actuating lever.

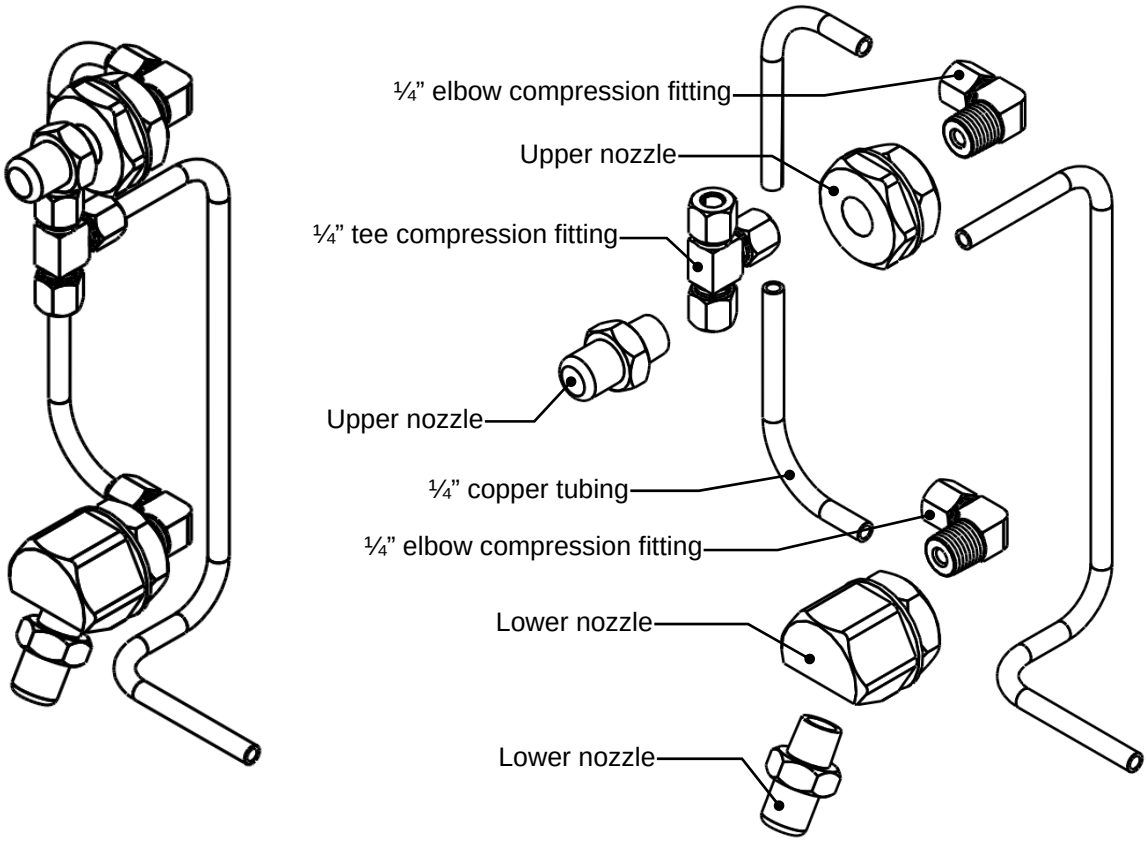
17. Remove charging adapter. Attach straight compression fitting to head assembly using a ½" open end wrench.

18. Check for leaks. Repeat steps 9-17 if PFS is leaking.

19. Re-install PFS (refer to page 3)

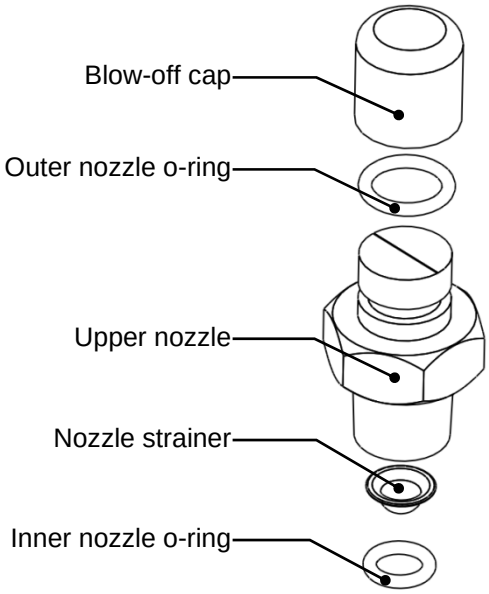
Nozzle Cleaning

20. Remove nozzles from wall adapters and disconnect tubing from compression fittings.



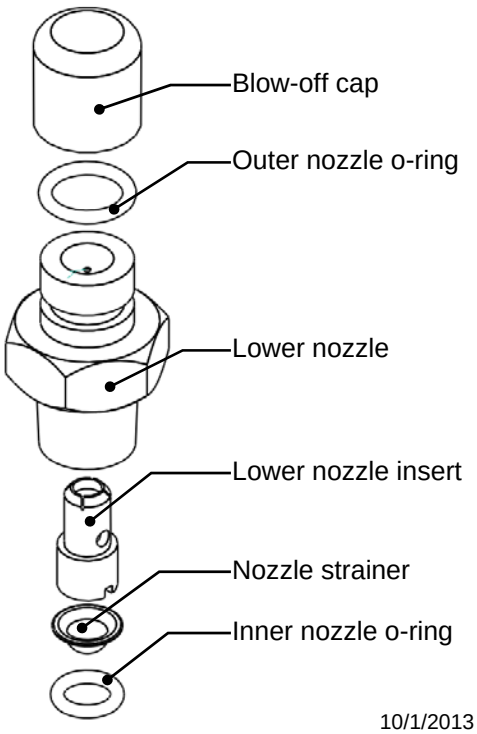
21. Clean tubing and compression fittings with warm soapy water then rinse. Blow filtered compressed air through all pieces to dry.

22. Disassemble both upper and lower nozzle, wash with warm soapy water then rinse. Use filtered compressed air to dry.

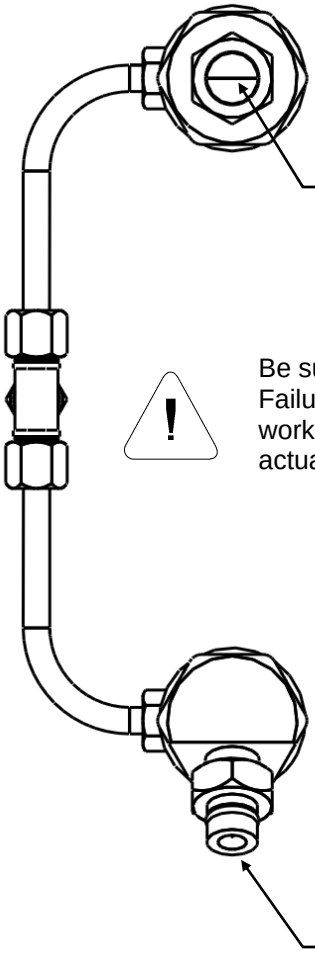


Be sure to reassemble the nozzles properly. Failure to do so will prevent them from working properly in the event of system actuation.

DO NOT USE O-RING LUBE ON INNER O-RINGS AS THEY ARE DESIGNED TO HOLD STRAINERS IN PLACE.

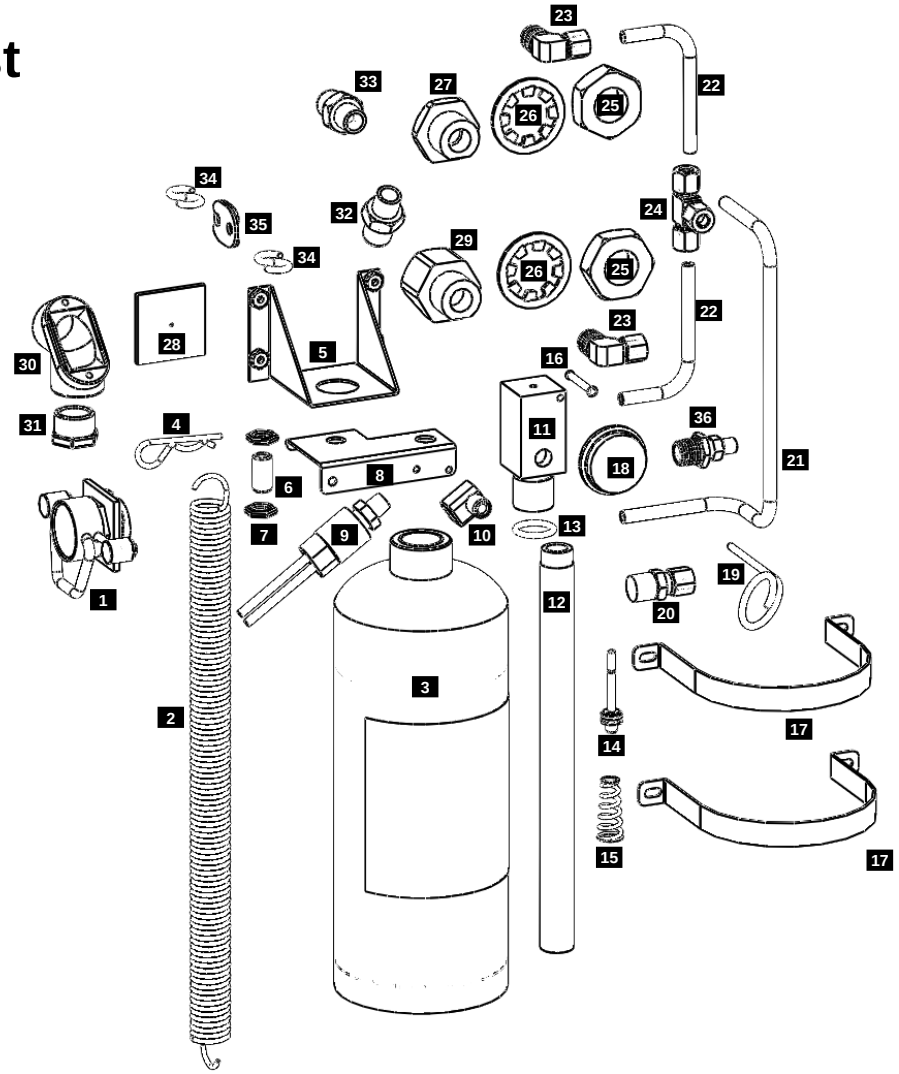


23. Reinstall tubing, compression fittings and nozzles in original positions. Use pipe thread sealant tape on pipe threads if necessary. Make sure upper nozzle flat is horizontal.



24. If nozzle blow-off caps are damaged, replace.

Parts List



#	Part#	Description	#	Part#	Description
1	6GT669	manual pull	32	N/A	lower nozzle assembly
2	6GT674	extension spring	NS	6GT006	lower nozzle
3	6GT008	cylinder	NS	6GT007	lower nozzle insert
4	6GT671	hitch pin clip	NS	6GT017	nozzle inner o-ring
5	6ST665	corner pulley bracket	NS	6GT016	nozzle outer o-ring
6	6GT800	adjuster	NS	6GT018	nozzle strainer
7	6GT801	adjuster nut	NS	6GT014	blow-off cap
8	6ST002	actuating lever	33	N/A	upper nozzle assembly
9	6GV128	pressure switch	NS	6GT005	upper nozzle
10	6GV068	brass elbow	NS	6GT017	nozzle inner o-ring
11	6GT001	head – wet chemical	NS	6GT016	nozzle outer o-ring
12	6GT002	siphon tube – wet chemical	NS	6GT018	nozzle strainer
13	6GV064	main o-ring	NS	6GT014	blow-off cap
14	6GT591	valve stem	34	6GT597	s-hook
15	6GT592	valve spring	35	6GT587	fusible link
16	6GT664	lever rivet	36	6GT019	charging adapter
17	6ST001	mounting bracket	NS	6GT599-1	manual pull cable
18	6GT009	pressure gauge	NS	6GT599-2	fusible link cable
19	6GT594	safety pin	NS	6GV013	inspection tag
20	6GT010	¼" straight compression fitting	NS	6GV071	epoxy thread sealant
21	6GT011-03 or -04	lower tube (-03 PFC/SFC, -04 PFA)	NS	6GT015	wet chemical agent
22	6GT011-01 or -02	upper tube (-01 PFA/PFC, -02 SFC)	Amerex Corporation P.O. Box 81 Trussville, AL 35173-0081 1-205-655-3271		Contains: Water, potassium acetate, potassium citrate, organic phosphate esters, pink pigment
23	6GT012	¼" elbow compression fitting			
24	6GT013	¼" tee compression fitting			
25	6NT005	7/8-9 jam nut			
26	6NT006	7/8 lock washer			
27	6GT004	upper nozzle adapter			
28	6GT673-1	fusible link gasket	Mildly irritating to the eyes, skin, and respiratory system. Symptoms may include coughing, shortness of breath, and eye and skin irritation. Ingestion, although unlikely, may cause gastrointestinal disturbance.		
29	6GT003	lower nozzle adapter			
30	6GT596	corner pulley			
31	6GT666	corner pulley bushing			

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