

CITY OF SACRAMENTO

Permit No: 9811717

1231 I Street, Sacramento, CA 95814

Insp Area: 3

Site Address: 6425 FLORIN PERKINS RD SAC

Sub-Type: COM

Parcel No: 0640200037

Housing (Y/N): N

CONTRACTOR

INTERNATIONAL FIRE EQUIPMENT
133 OTTO CR
SACRAMENTO, CA

OWNER

WARREN N III

ARCHITECT

95822

Nature of Work: INSTALL KITCHEN HOOD SYSTEM

CONSTRUCTION LENDING AGENCY : I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name _____ Lender's Address _____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class 516 License Number 253912 Date 11/24/98 Contractor Signature [Signature]

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. _____ B & PC for this reason: _____

Date _____ Owner Signature _____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 11/24/98 Applicant/Agent Signature [Signature]

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:

I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier Rockwell Insurance Co of America Policy Number 13611301 Exp Date 1-01-99

(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 11/24/98 Applicant Signature [Signature]

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.



Design, Installation & Maintenance Manual

MODELS:

- RG-1.25G
- RG-2.5G
- RG-4GS
- RG-4GT
- RG-6G

MANUAL PART NO. 9127100

MANUAL ISSUE DATE: SEPTEMBER 1997

BADGER FIRE PROTECTION

ADDRESS

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 Charlottesville, VA 22911

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This manual is for use in buildings of the same type as those shown in the illustrations. The user should consult the manufacturer's instructions for details.

ISSUED

NOV 24 1998

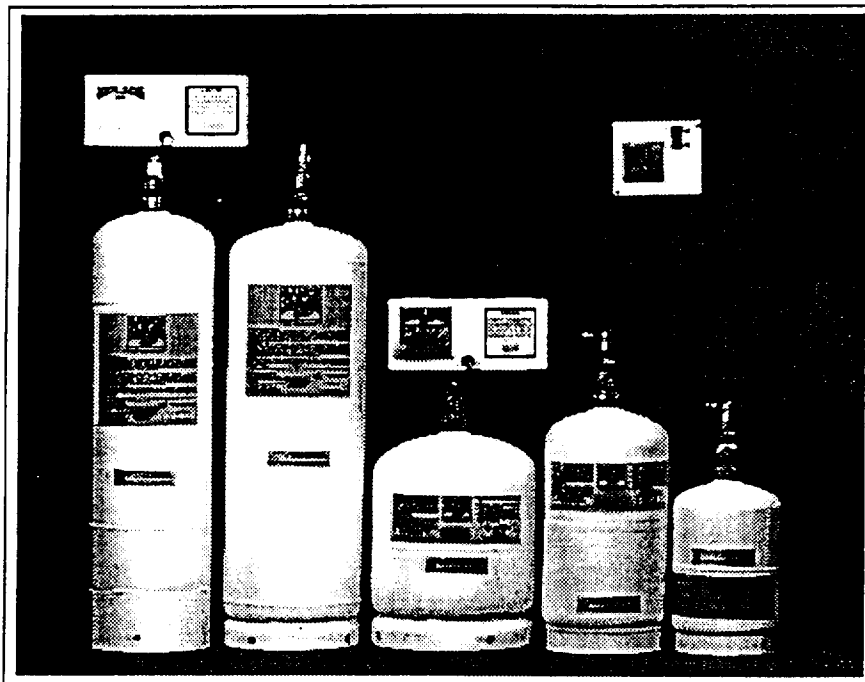
Cylinders

Cylinders

Range Guard systems have available five different cylinder sizes: 5 Quart (4.7L), 2-1/2 gallon (9.5L), 4 gallon long (15 L), 4 gallon snort (15L) and 6 gallon (22.7L). The cylinder size is

expressed in terms of the Karbaloy® capacity. Each cylinder is pressurized with nitrogen or air to 175 psig (1205 kPa). at 70° F (21°C).

Note: It is recommended that cylinders be stored upright.



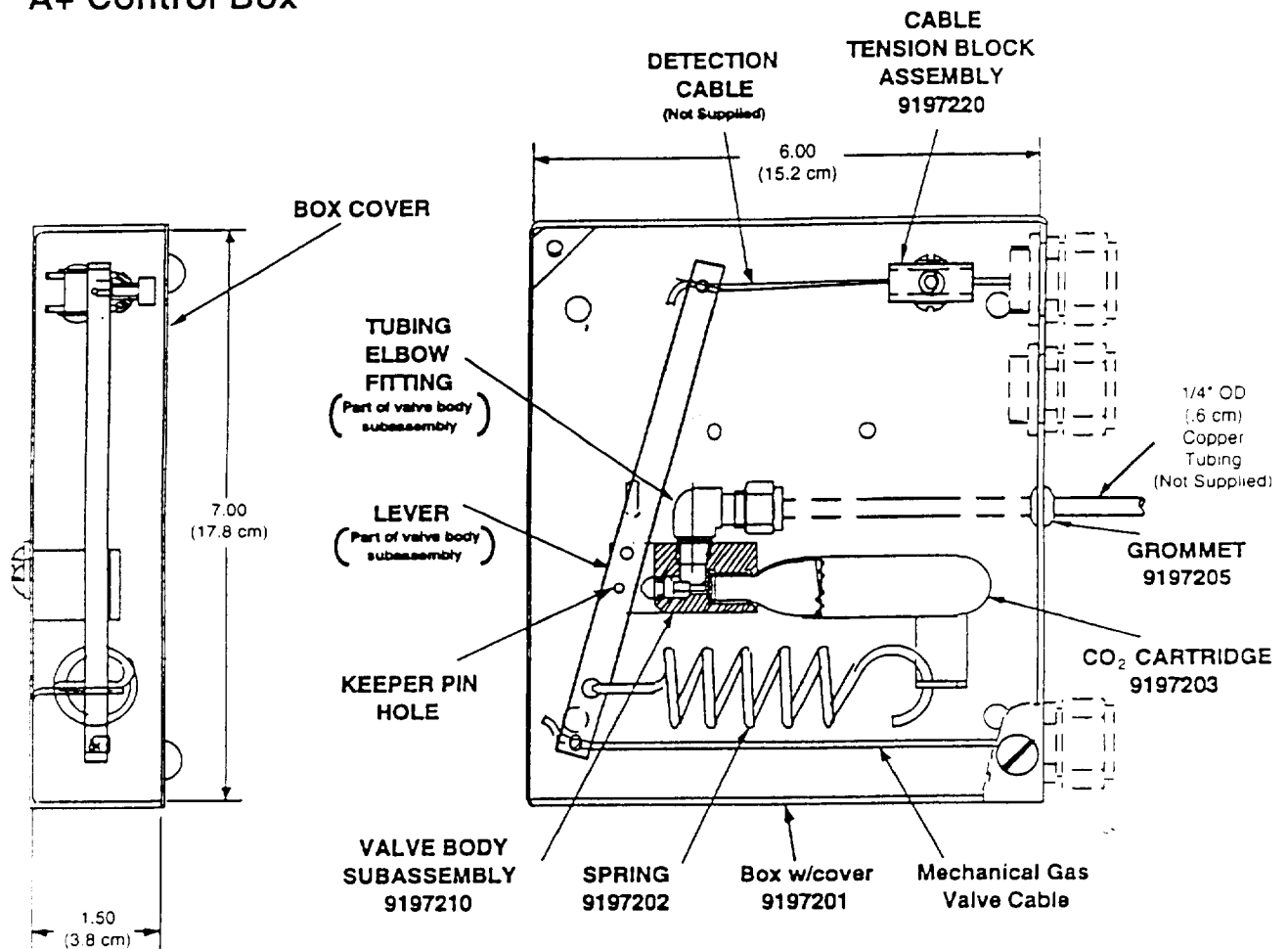
4 GALLON (LONG) (15L) 6 GALLON (22.7L) 4 GALLON (SHORT) (15L) 2-1/2 GALLON (9.5L) 5 QUART (4.7L)

■ Table 1c

Cylinder Size	Part No.	Charged Weight Lbs	Diameter Inches	Height to Center of Discharge Port Inches	Overall Height Inches	Overall Height With Mech Actuator* Inches	Overall Height With Pneumatic Control Head Inches
5 Quart (4.7L)	97422	28.5 (12.9 Kgs)	7-1/2 (19 cm)	16 (41 cm)	17 (43 cm)	28-1/4 (71.8 cm)	18-3/4 (47.6 cm)
2-1/2 Gallon (9.5L)	97250	53 (24 Kgs)	9 (23 cm)	21-3/8 (54 cm)	22-3/8 (57 cm)	33-5/8 (85.4 cm)	24-1/8 (61.3 cm)
4 Gallon-S (15L)	97157	80 (36.3 Kgs)	12 (30.5 cm)	19-1/4 (49 cm)	20-1/4 (51 cm)	31-1/2 (80 cm)	22 (55.9 cm)
4 Gallon-L (15L)	96823	88 (40 Kgs)	8-1/4 (21 cm)	35-3/4 (91 cm)	36-3/4 (93 cm)	48 (122 cm)	38-1/2 (97.8 cm)
6 Gallon (22.7L)	96776	110 (50 Kgs)	10-3/16 (26 cm)	35-1/8 (89 cm)	36-1/8 (92 cm)	47-3/8 (120 cm)	37-7/8 (96.2 cm)

* Measured with cover fully open to allow normal servicing of the system.

A+ Control Box



**A+ CONTROL BOX: 97200
FIGURE 7c**

A+ Control Box

The A+ Control Box (shown in Figure 7c) is composed of a CO₂ cartridge, spring mechanism and a discharge lever which discharges the CO₂ cartridge when: (a) a fusible link actuates in any detector or (b) the Remote Manual Control is operated. The valve, with the CO₂ cartridge, is connected to a Pneumatic Control Head mounted on the system cylinder by 1/4" (.6 cm) O.D. copper tubing using compression or flare fittings. (The tubing is standard, commercially available tubing and is not supplied with the system.) When the CO₂ cartridge discharges, the CO₂ gas pressurizes the 1/4" (.6 cm) O.D. tubing to the Pneumatic Control Head(s), located on the system Cylinder Valve, and actuates the cylinder(s).

The A+ Control Box can operate a maximum of five cylinders, regardless of size. A Pneumatic Control Head (99429) is required on each system cylinder, one is supplied with the A+ Control Box.

One 1/2" (1.3 cm) Liquid Seal Adapter, 3/8" (1.0 cm) Liquid Seal Adapter and one vent plug is supplied with each A+ Control Box.

The A+ Control Box can be mounted in any orientation.

Refer to page I-12 of this manual for installation limitations

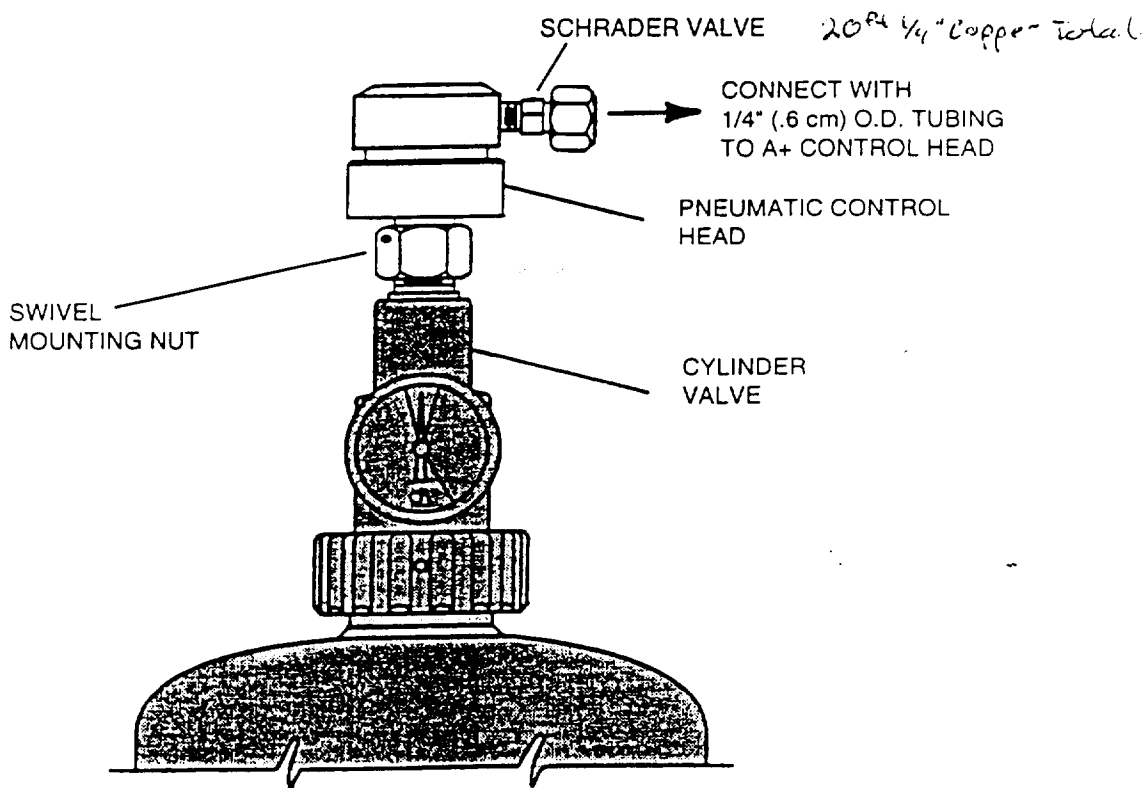
C-8

Pneumatic Control Head

Pneumatic Control Head

The Pneumatic Control Head is used only with the A+ Control Box. It contains a piston that is driven down by the CO₂ pressure when the A+ Control Box is activated. The piston will

remain in the "discharged" position as long as CO₂ pressure is maintained. A maximum of 5 Pneumatic Control Heads can be used with a single A+ Control Box.



PNEUMATIC CONTROL HEAD 99429
FIGURE 8c

3-14 Designing for Plenum Protection

A single ADP nozzle will protect a single filter or "V" filter bank plenum with the following maximum dimensions:

Plenum Length 10 Feet (3.0 m)

Plenum Width 4 Feet (1.2 m)

When no filters are present, the nozzle protecting the plenum is used to discharge the wet chemical on the underside of the hood. In this case, the hood may not exceed a length of 10 ft. (3.0 m). The hood shall not exceed a width of 4 ft. (1.2 m).

A plenum with either a single filter bank or "V" filter bank and a length of 10 ft. (3.0 m) or less may be protected

by one ADP nozzle. The nozzle shall be located at one end of the plenum. Longer plenums may be similarly protected with a single ADP nozzle being used for each 10 ft. (3.0 m) of plenum length and each 4 ft. (1.2 m) of plenum width.

ADP nozzles may be used in combinations (see Figure 3-28). Multiples may be installed in pairs at the midpoint of the plenum or installed at each end of the plenum with the discharges directed at the midpoint. Installation of a pair of nozzles back to back on a tee in any combination is permissible.

ADP nozzles must be centrally located in the plenum with their discharge directed along the length of the plenum and located in relation to the filters as shown in figure 3-28.

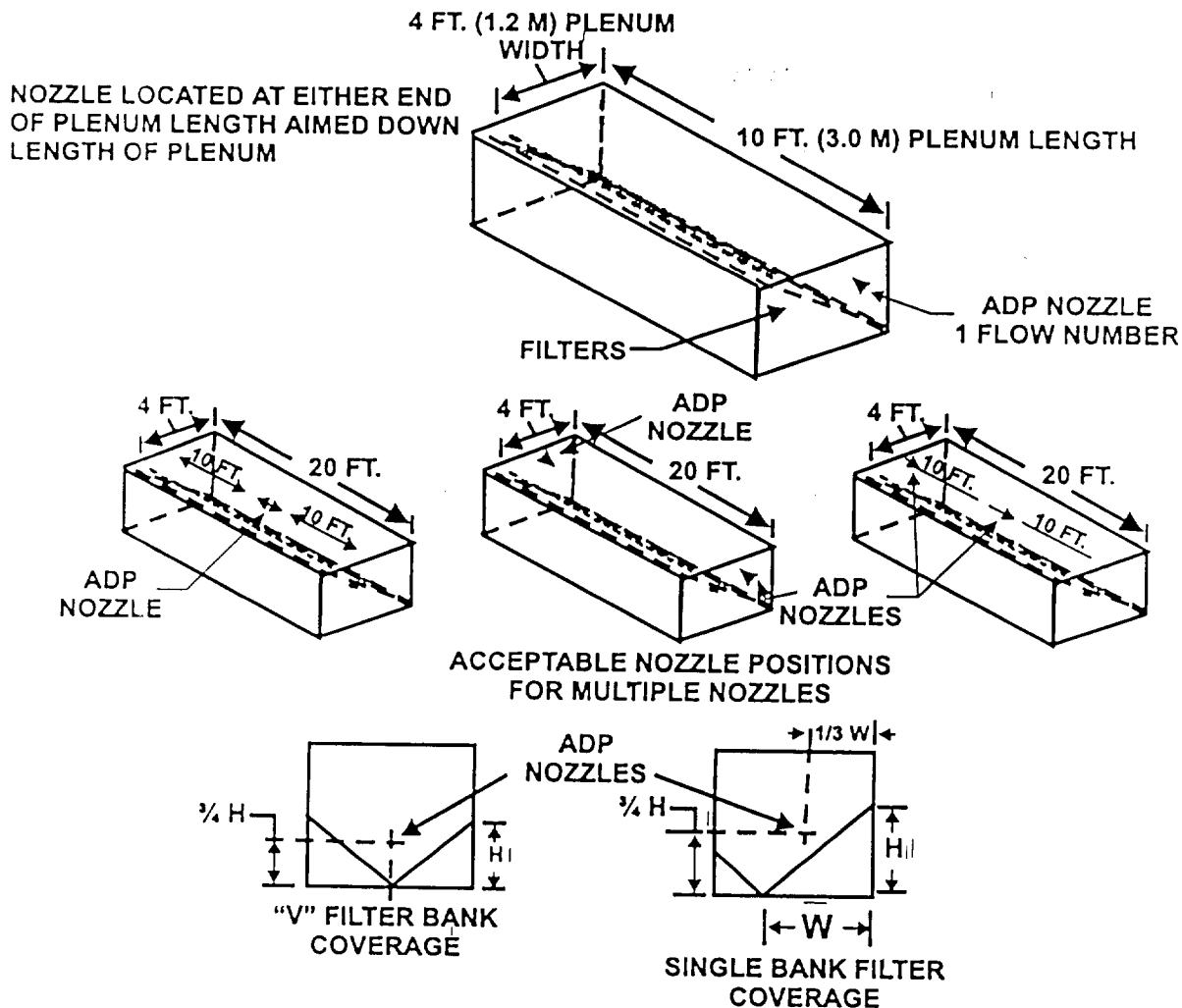


Figure 3-28. Plenum Protection

D-14

Designing for Plenum Protection

A single ADP nozzle will protect a single filter bank plenum with the following maximum dimensions:

Plenum Length	6 Feet (1.8 m)
Plenum Width	4 Feet (1.2 m)
Filter Area	6 (1.8 m) Feet Long – 20 Inches (51 cm) Wide

A single ADP nozzle will protect a "V" filter bank plenum with the following dimensions:

Plenum Length	3 Feet (.9 m)
Plenum Width	4 Feet (1.2 m)
Filter Area	3 Feet (.9 m) Long – 40 Inches (102 cm) Wide

A single plenum nozzle will protect a single filter or "V" filter bank plenum with the following maximum dimensions:

Plenum Length	10 Feet (3.0 m)
Plenum Width	4 Feet (1.2 m)
Filter Area	10 Feet (3.0 m) Long – 40 Inches (102 cm) Wide

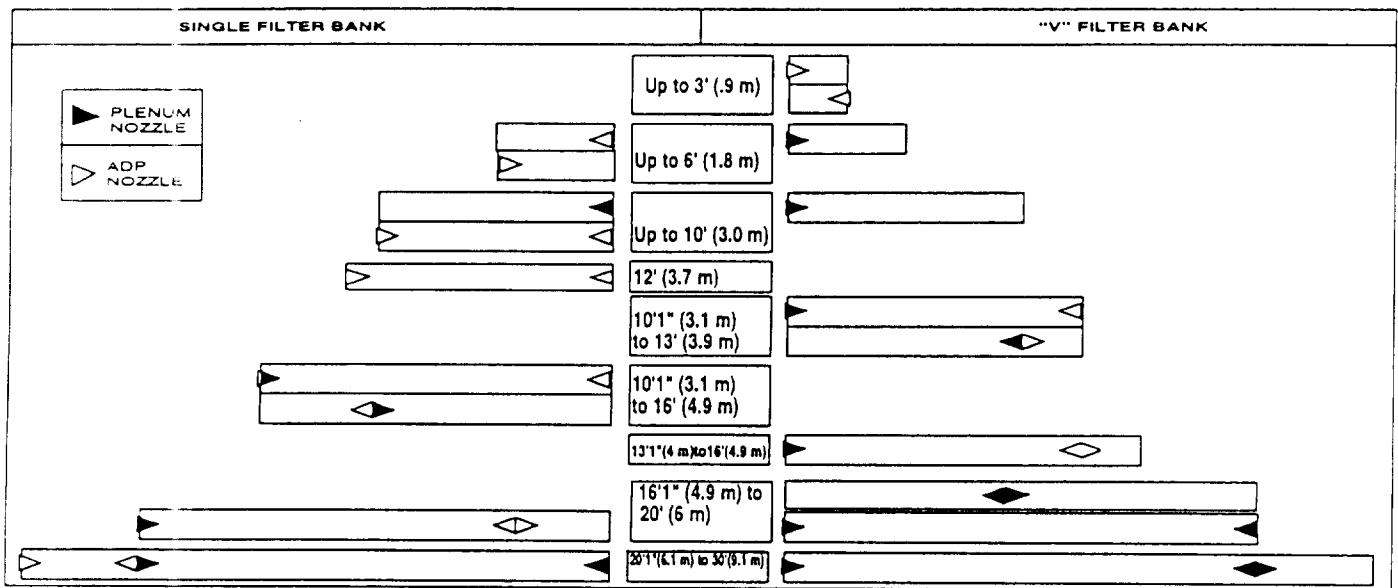
NOTE: 40" (102 cm) WIDE FILTER AREA IS MADE UP OF TWO FILTERS WHICH BOTH HAVE AN EXPOSED FILTER SURFACE OF 20" (51 cm). THIS DOES NOT INCLUDE THE FILTER FRAME.

When no filters are present, the nozzle protecting the plenum is used to discharge Karbaloy® on the underside of the hood. In this case, the hood may not exceed a length of 6 ft. (1.8 m) for the ADP nozzle and 10 ft. (3.0 m) for the plenum nozzle. The hood shall not exceed a width of 6 ft. (1.8 m) for either nozzle.

A single filter bank plenum with a length of 6 ft. (1.8 m) or less may be protected by one ADP nozzle. A "V" filter bank plenum with a length of 3 ft. (.9 m) or less may also be protected by one ADP nozzle. A plenum with either a single filter bank or "V" filter bank and a length of 10 ft. (3.0 m) or less may be protected by one plenum nozzle. Either nozzle shall be located at one end of the plenum. Longer plenums may be similarly protected with a single ADP nozzle being used for each 3 or 6 ft. (.9 or 1.8 m) of plenum length (depending on the type of filter bank) and each 10 ft. (3.0 m) of plenum length for plenum nozzles.

ADP and plenum nozzles may be used in any combinations (see Figure 19d). Multiples may be installed in pairs at the midpoint of the plenum with their discharges directed at the ends of the plenum or installed at each end of the plenum with the discharges directed at the midpoint.

ADP and plenum nozzles must be centrally located in the plenum (see figure 32d) with their discharge directed along the length of the plenum. In no case, however, shall the horizontal center line of the nozzles be located more than 15 (38 cm) inches from the inside filter surface.



EXAMPLES OF TYPICAL NOZZLE PLACEMENTS USED TO PROTECT PLENUMS OF VARIOUS LENGTHS

PLENUM OR ADP NOZZLE CENTERED IN PLENUM

FIGURE 31d

PLENUM OR ADP NOZZLE CENTERED IN PLENUM



SINGLE FILTER BANK

LOCATION OF NOZZLE WITHIN PLENUM
FIGURE 20a



"V" FILTER BANK

AD-4 Designing for Duct Protection

Duct Protection

The ADP nozzle, P/N B120011, is used for protection of the exhaust ductwork.

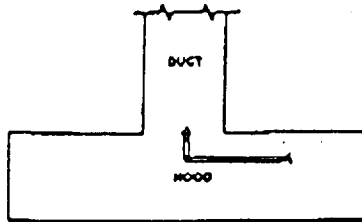
The duct cross section can be any shape (i.e., round, square, or rectangular) and the duct (itself) can be of unlimited length. In accordance with NFPA 96, the exhaust fan should be left running at the time of system discharge. A damper, if present, should be left open at system discharge. However, if the damper is closed, the system designer must insure that the duct nozzle discharge is not impeded by the closed damper.

Protection of Ducts 0 to 50 inches perimeter

One ADP nozzle, P/N B120011, is required for protection of a duct with a perimeter up to 50 inches. (See Figure AD-4). Length of duct is unlimited.

The nozzle is located at the geometric center of the cross-sectional area that it is protecting and is located in the duct within six inches of the entrance.

Note: All Range Guard systems are listed by UL for use with the exhaust fan either on or off when the system is discharged.



DUCT PERIMETER UP TO AND INCLUDING 50 INCHES

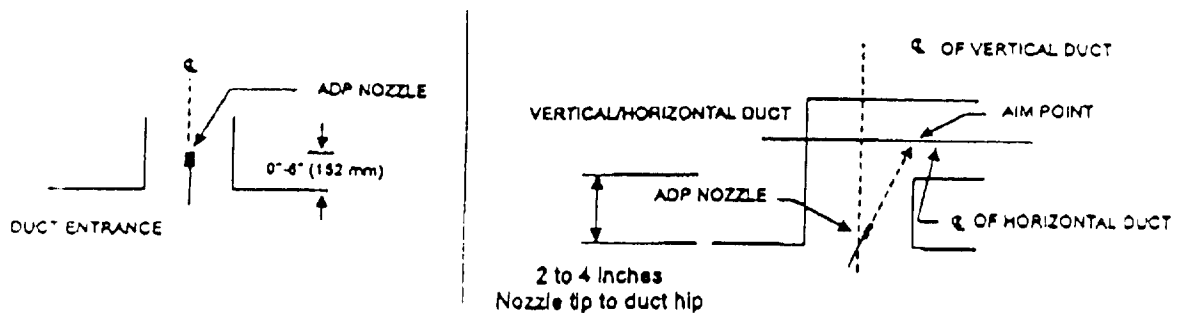
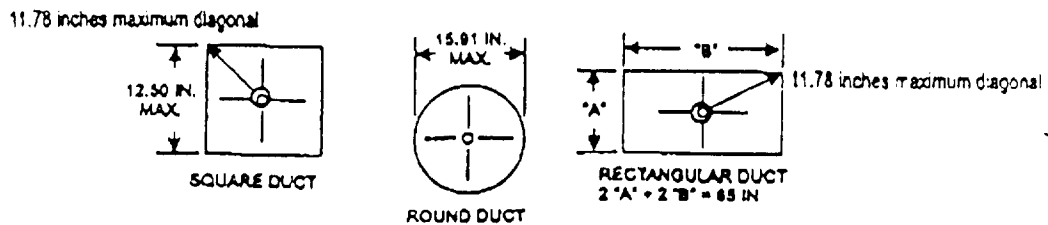


Figure AD-4 Duct Protection Using Single ADP Nozzle, P/N B120011

D-22

Designing for Pipe Size and Type Within the Bounds of Piping Limitations

Piping and Fittings

Range Guard systems do not require balanced piping to achieve proper distribution of Karbaloy® to all nozzles. Balanced piping is not necessary because a liquid has no difficulty in turning corners or changing directions. Range Guard nozzles come equipped with permanent predetermined orifices. This means that the liquid will be delivered in the exact quantities necessary to the duct, plenum and appliance hazards as required.

All pipe shall be schedule 40 (standard weight) black steel. Pipe may be chrome plated. Galvanized pipe shall not be used. All pipe and fittings must be made tight without pipe dope or thread sealant.

Pipe fittings shall be standard weight steel, cast iron, malleable iron or ductile iron. Galvanized fittings shall not be used. Branch line connection and individual nozzle connections may be made by using either the outlet or the run of a tee.

Stainless Steel Tubing and Fittings

Stainless steel tubing may be used on all Range Guard systems. Fittings may be stainless steel compression or stainless steel flare types. Bending of tubing using mandrels is permissible.

Pipe Sizing

Pipe sizes are determined by the total number of flow numbers running through a particular piece of pipe. This is the flow demand for that portion of the system.

NOTE: It is not permissible to drop pipe diameters below the required value. For example, using 1/2" (1.3 cm) pipe to flow 18 flow numbers is not permissible. However, increasing pipe diameter is acceptable (i.e., using 1" (2.5 cm) pipe to flow 18 flow numbers) providing the system complies with internal pipe volume limitations.

■ Table 5d

Flow Number Range	Minimum Pipe Size	.035 wall Stainless-Steel Tubing Size
1 - 2	1/4" (.6 cm)	3/8" (1.0 cm)
1 - 8	3/8" (1.0 cm)	N/A
1 - 12	1/2" (1.3 cm)	5/8" (1.6 cm)
13 - 24	3/4" (1.9 cm)	7/8" (2.2 cm)
25 - 48	1" (2.5 cm)	1" (2.5 cm)

GENERAL RULES

- A maximum of 100 equivalent feet (30.5 m) (but not more than 40 (12.2 m) linear feet) of 1/4" (.6 cm) pipe may be used for each branch line
- The highest point of the system shall not exceed 12 feet (3.7 m) above the cylinder outlet.
- The vertical rise of a branch line above the supply line shall not exceed a maximum of 4 feet (1.2 m).
- Maximum discharge pipe volume limitations shall not be exceeded.
- Maximum equivalent length limitations shall not be exceeded.
- Maximum flow points for a given pipe shall not be exceeded.
- There are to be no low points or "traps" present in discharge piping.

Cylinder Sizing

After finding how many nozzles of each type are required for a system, the sum of all the nozzle flow numbers is used to determine the number and size of the cylinders required, in accordance with the cylinder flow number limits given below.

■ Table 3d

Maximum Flow Numbers of Cylinders						
Cylinder	Flow Number					
5 Quart (4.7 L)	4 Single Cylinder Only (Cannot Manifold)					
2-1/2 Gallon (9.5 L)	8 Single Cylinder Systems Only (Cannot Manifold)					
4 Gallon (15 L) (Long or Short)	<table border="0"> <tr> <td>12</td> <td rowspan="4">} Can Manifold * Up to 4 Cylinders</td> </tr> <tr> <td>24</td> </tr> <tr> <td>36</td> </tr> <tr> <td>48</td> </tr> </table>	12	} Can Manifold * Up to 4 Cylinders	24	36	48
12		} Can Manifold * Up to 4 Cylinders				
24						
36						
48						
1 Cylinder						
2 Cylinders						
3 Cylinders						
4 Cylinders						
6 Gallon (22.7 L)	<table border="0"> <tr> <td>18</td> <td rowspan="3">} Can Manifold * Up to 2 Cylinders</td> </tr> <tr> <td>36</td> </tr> <tr> <td></td> </tr> </table>	18	} Can Manifold * Up to 2 Cylinders	36		
18		} Can Manifold * Up to 2 Cylinders				
36						
1 Cylinder						
2 Cylinders						

*Only like cylinders can be manifolded (ie, four 4 gallon, two 6 gallon.)

The system can be actuated through various control boxes, in accordance with Table 4d. To actuate a single cylinder system, use either the Mechanical Control Box or the A+ Control Box with pneumatic control head. To actuate two or three cylinders, use either one or two Tandem Control Box and a Mechanical Control Box or the A+ Control Box with 1-3 pneumatic control head(s). To actuate more than 3 cylinders, the A+ Control Box with pneumatic control head(s) must be used.

■ Table 4d

System Size	Mechanical Control Box	Tandem Control Box	A+ Control Box
1 Cylinder	√		√
2 Cylinders	√*	√*	√
3 Cylinders	√**	√**	√
4 Cylinders			√
5 Cylinders			√

* Requires both a mechanical control box and tandem control box

** Requires a mechanical control box and two tandem control boxes

Design/Single Cylinder Actuation

General

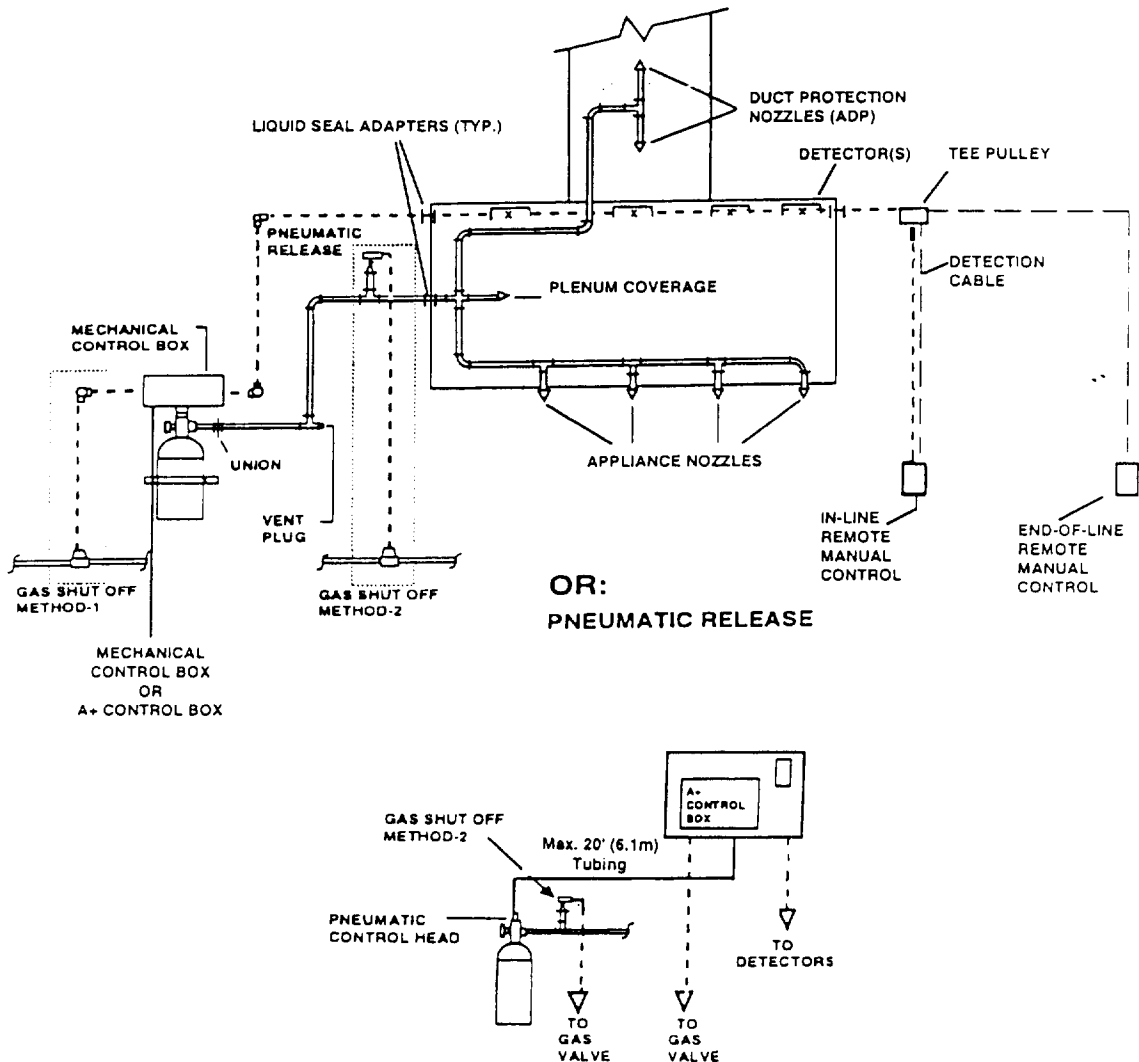
This section covers the design aspects of the 5 quart (4.7L), 2-1/2 gallon (9.5L), 4 gallon (15L) and 6 gallon (22.7L) systems. It contains all the necessary information to design a complete system including nozzle placement, detector placement, cylinder sizing, piping limitations and auxiliary hardware.

All system designs and installations must comply with all requirements of this manual. A well thought out design will save time and money when it comes time to perform the installation.

SINGLE CYLINDER ACTUATION

Figure 1d illustrates single cylinder actuation using either the Mechanical Control Box or the A+ Control Box. Note that with both the Mechanical Control Box and the A+ Control Box, the

gas valve can be shut off through the control box or by using a pneumatic release. Multiple gas valve actuation must be accomplished with the use of pneumatic releases.



TYPICAL SINGLE CYLINDER SYSTEM
FIGURE 1d

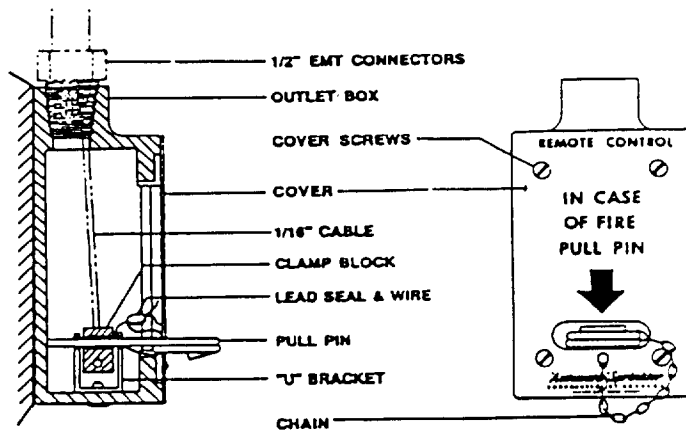
Surface Mounted Remote Manual Controls

Remote Manual Controls

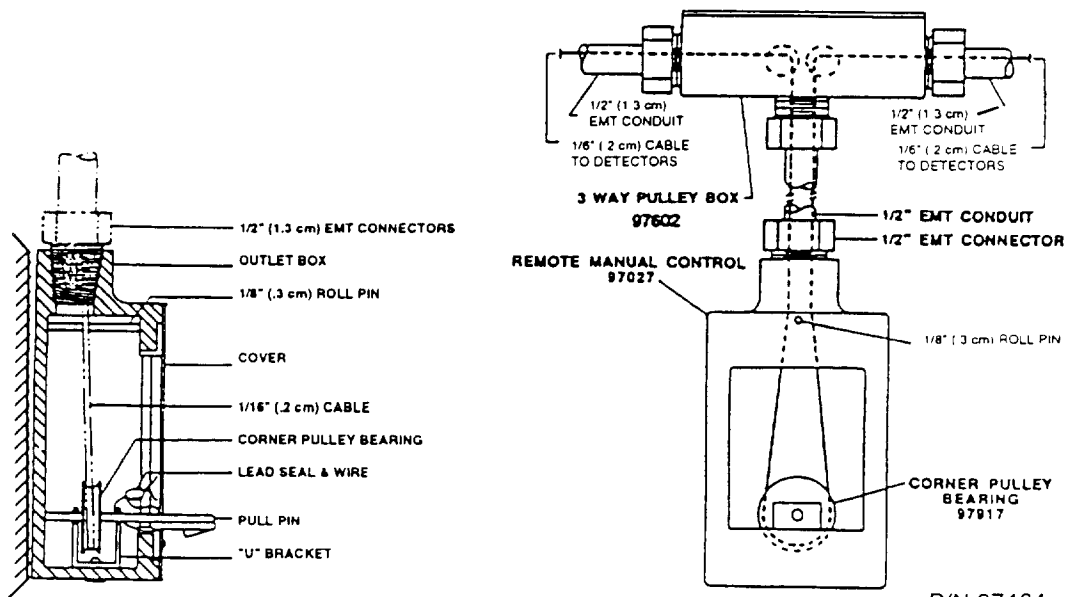
There are two types of Surfaced Mounted Remote Manual Controls available, End-of-Line (Figure 14c) and In-Line (Figure 15c). Each is used as a means to actuate the system manually from a remote location. This is accomplished by removing the pull pin releasing the tension in the detection cable, allowing the Control Head to activate the cylinder.

If an End-of-Line Remote Manual Control is not applicable, it can be converted to an In-Line Remote Manual Control by using an In-Line Kit. Refer to page I-3 of this manual. An In-Line Kit uses a BFPI approved Tee Pulley and Corner Pulley Bearing (see Figure 15c) to modify the End-of-Line Remote Manual Control.

Refer to page I-3 of this manual for installation limitations.



Surface Mounted End-of-Line Remote Manual Control, 97463
FIGURE 14C



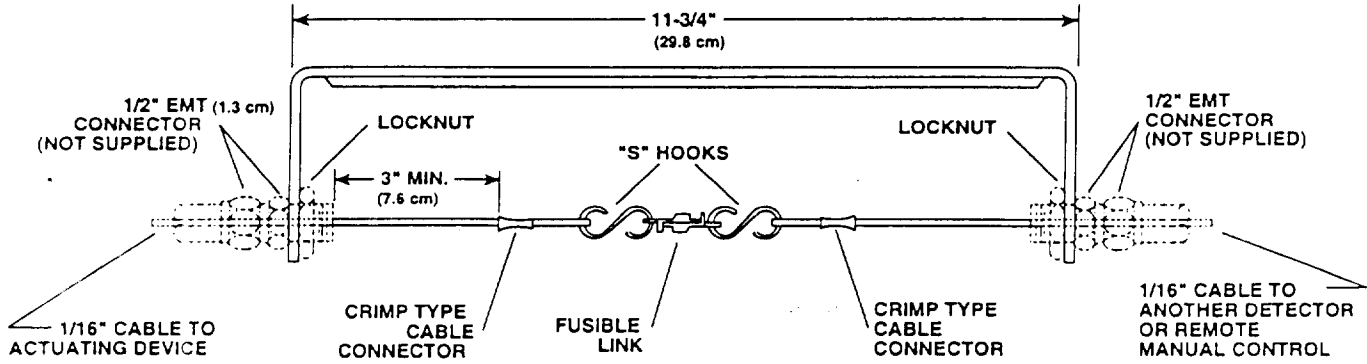
SURFACE MOUNTED REMOTE MANUAL CONTROL IN-LINE CONFIGURATION
IN-LINE KIT, 97464
FIGURE 15c

C-10

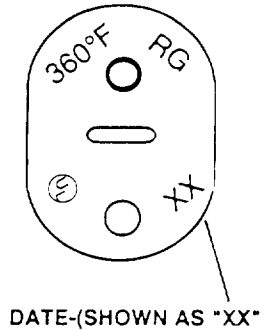
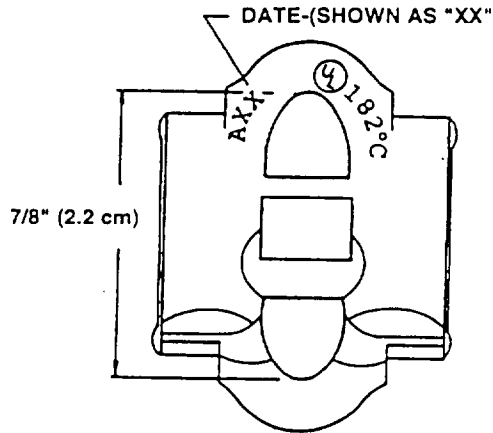
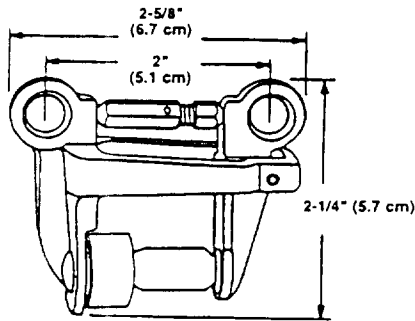
Detector

Detector

The detector consists of a plated steel bracket 11-3/4" (29.8 cm) long, a Listed fusible link, 2 cable crimps and 2 "S" Hooks to connect the fusible link to the detection system cable.



DETECTOR 97024
FIGURE 11c



Rating	Part No.	Maximum Ambient Temperature
400° (204°)	57643	375° F (191° C)
500° (260°)	57644	475° F (246° C)

Load rating of both links is 250# (113.4 kg).

GLASS BULB
(QUARTZOID) LINK
FIGURE 12c

300° F (149° C) maximum ambient temperature.
Min 3 lbs. (1.4 kg) – Max. 45 lbs. (20.4 kg) rated

360° (18° C) FUSIBLE LINK 96903
FIGURE 13c

3-11 Charbroilers

CHARBROILERS

Lava, Pumice, Ceramic or Synthetic Rock Charbroiler

One F or Plenum nozzle will protect a gas fired charbroiler (pumice - ceramic stone) to a maximum dimension of 22" x 23" (56 cm x 58 cm) with a maximum of two layers of lava, pumice or stone. The nozzle is located at an angle of 45° or more from the horizontal and is aimed at the midpoint of the hazard area. It shall be not more than 48" (122 cm) from the midpoint of the hazard area nor less than 24" (61 cm) above the grate surface. The nozzle can be outside the perimeter of the appliance. (See Figure 3-19).

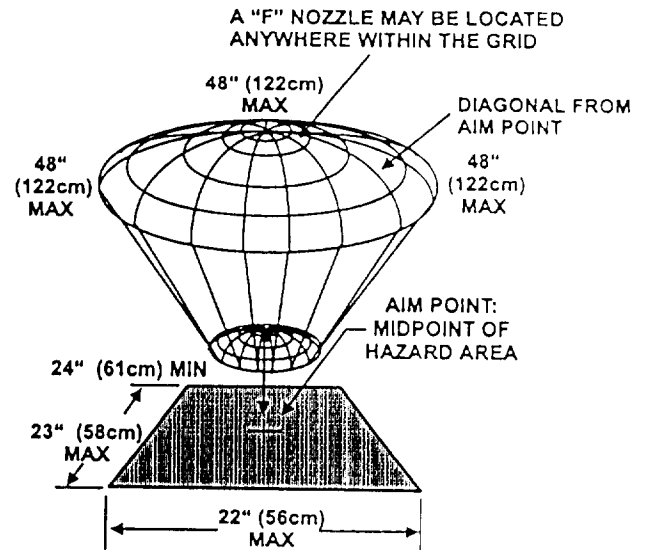


Figure 3-19. Lava, Pumice, Ceramic, or Synthetic Rock Charbroiler

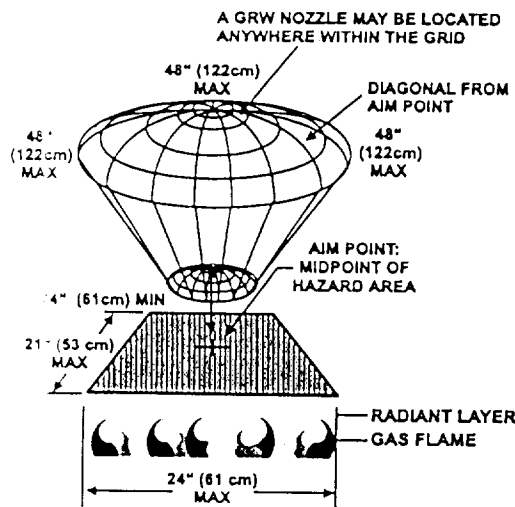


Figure 3-20. Gas/Electric Radiant Charbroiler

Gas Radiant Charbroiler

One GRW nozzle will protect a gas fired radiant charbroiler with maximum cooking surface dimensions of 21" x 24" (53 X 61 cm). The nozzle is located at an angle of 45° or more from the horizontal and is aimed at the midpoint of the hazard area. The nozzle shall be not less than 24" (61 cm) nor more than 48" (122 cm) above the cooking surface. The nozzle can be outside the perimeter of the appliance. (See Figure 3-20).

Electric Charbroilers

Grid surface electric charbroilers (a cooking surface with grids or openings in it) are protected the same as gas radiant charbroilers. (See figure 3-20).

CAUTION: ELECTRICAL APPLIANCES BEING PROTECTED MUST BE SHUT OFF AUTOMATICALLY UPON SYSTEM ACTUATION.

Natural or Mesquite Charcoal Charbroiler

One ADP nozzle will protect a natural charcoal/ mesquite-charcoal charbroiler with a maximum dimension on any side of 24" (61 cm). The nozzle is located at an angle of 45° or more from the horizontal and aimed at the midpoint of the hazard area. The nozzle shall be not less than 24" (61 cm) nor more than 48" (122 cm) above the cooking surface. The nozzle can be outside the perimeter of the appliance. (See Figure 3-21).

The depth of mesquite charcoal pieces or charcoal is limited to 6" (15 cm) maximum. Mesquite logs or wood are not acceptable.

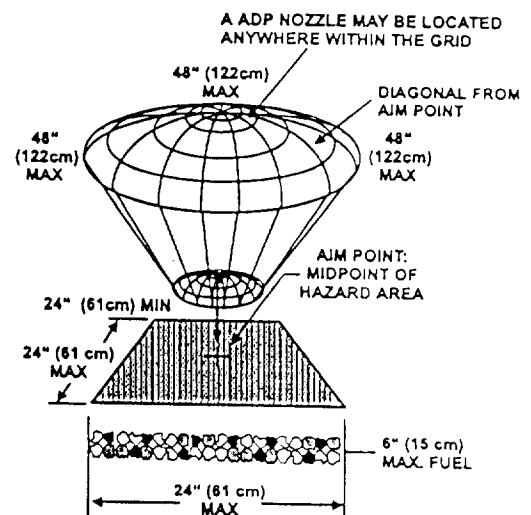


Figure 3-21. Natural or Mesquite Charcoal Charbroiler

3-5 Deep Vat Fryer and Griddle

SINGLE VAT DEEP FAT FRYER WITH DRIP BOARDS

One F nozzle or Plenum nozzle will protect one Single Vat Deep Fat Fryer with a maximum hazard area of 18" x 18" (46 cm x 46 cm) and an appliance area of 18" x 23" (46 cm x 58 cm) for fryers with a drip board. The nozzle is located at an angle of 45 degrees or more from the horizontal. It shall not be more than 45" (114 cm) nor less than 27" (69 cm) from the top of the appliance and aimed at the midpoint of the hazard area. The nozzle can be outside the perimeter of the appliance. (Hazard Area 18" x 18" (46 cm x 46 cm) - See Figure 3-7)

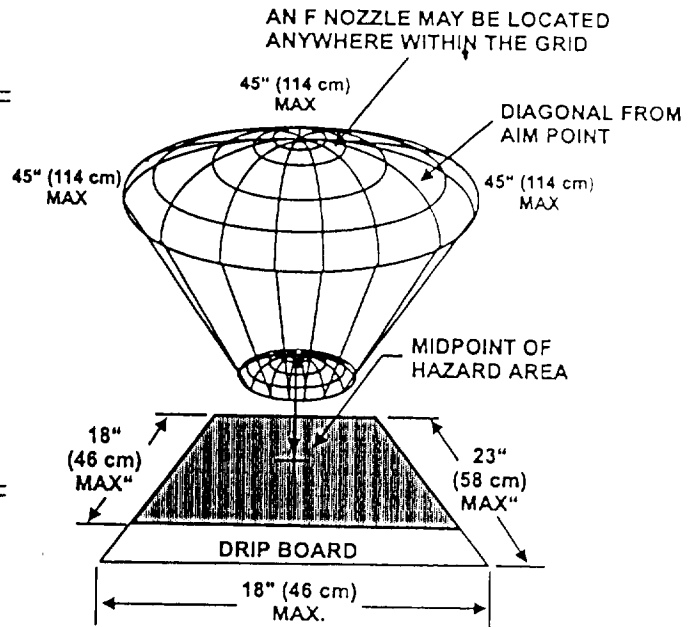


Figure 3-7. Single Vat Deep Fat Fryer

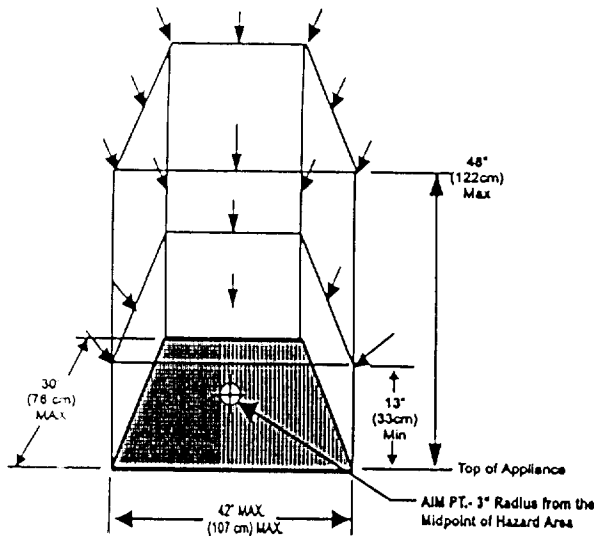


Figure 3-8. Griddle - Flat Cooking Surface

GRIDDLE - FLAT COOKING SURFACE

One ADP nozzle will protect one griddle (with or without raised ribs) with a maximum hazard area of 30" x 42" (76 cm x 107 cm). The nozzle is located at any point on the perimeter of the appliance and aimed at a point 3" (7.6 cm) from the midpoint of the hazard area. It shall not be more than 48" (122 cm) nor less than 13" (33 cm) above the edge of the appliance perimeter. Positioning the nozzle directly over the appliance is not acceptable. (See figure 3-8.)

SPLIT VAT DEEP FAT FRYER

One F nozzle or Plenum nozzle will protect a Split Vat Deep Fat Fryer with a split vat hazard area maximum of 14" x 15" (36 cm x 38 cm) without drip board and 14" x 21" (36 cm x 53 cm) with a drip board. The nozzle is located at an angle of 45 degrees or more from the horizontal. It shall not be more than 45" (114 cm) nor less than 27" (69 cm) from the top of the appliance and aimed at the midpoint of the hazard area. The nozzle can be outside the perimeter of the appliance. (Hazard Area 14" x 15" (36 cm x 38 cm) - See figure 3-9)

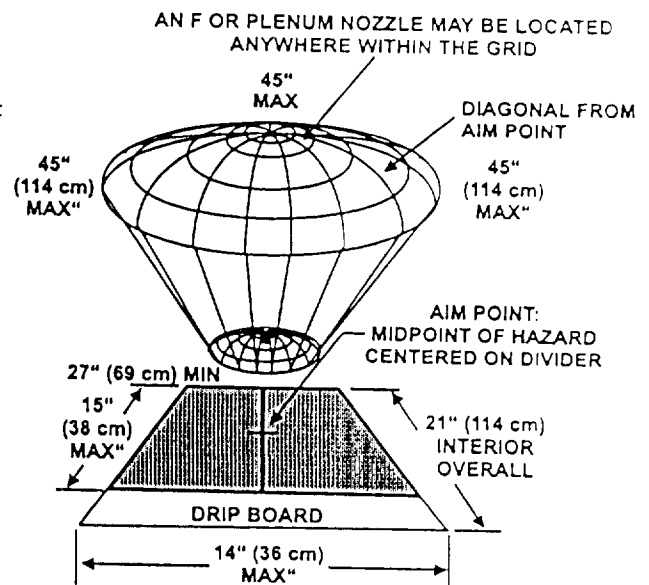


Figure 3-9. Split Vat Deep Fat Fryer

3-6 Single Vat Deep Fat Fryer (with dripboards less than 1" [2.5 cm])

One F Nozzle or Plenum Nozzle will protect a deep fat fryer with a maximum hazard area of 24" (61 cm) x 24" (61 cm) and an appliance area of 24" (61 cm) x 25" (63.5 cm) for fryers with a dripboard.

The nozzle shall be located at any point on or within the perimeter of the hazard area, aimed at the midpoint of the hazard. It shall not be more than 46" (117 cm) nor less than 27.5" (70 cm) above the edge of the appliance top. (See Figures 3-10 & 3-11).

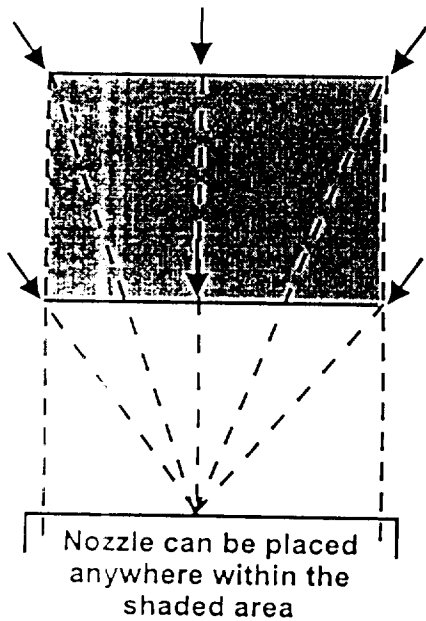


Figure 3-10. Nozzles for Deep Fat Fryer

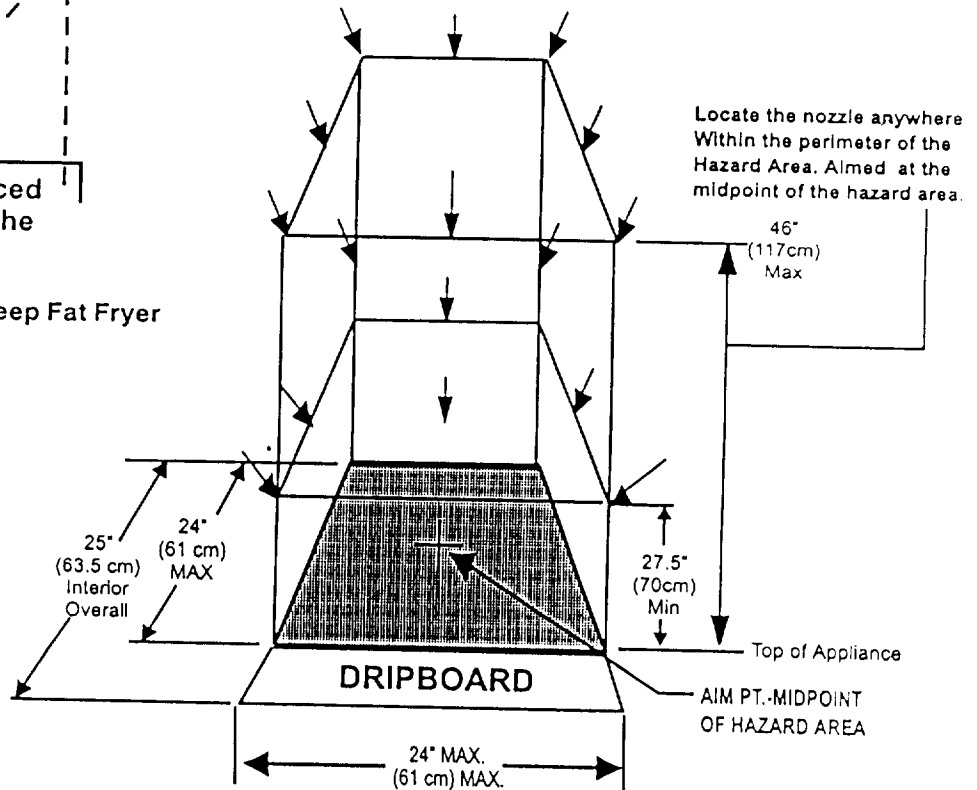


Figure 3-11. Single Vat Deep Fat Fryer

3-13 Range

RANGE

One 'R' nozzle will protect one four burner range with a maximum hazard area of 28" x 28" (71 cm x 71 cm).

The nozzle is to be located directly over the midpoint of the hazard area and anywhere within the area of a circle generated by a 9" (23 cm) radius about the midpoint. The nozzle shall not be more than 42" (107 cm) nor less than 20" (51 cm) from the midpoint of the hazard area, aimed at the midpoint. (See figure 3-25) **NOTE: SHAPE OF BURNER NOT IMPORTANT**

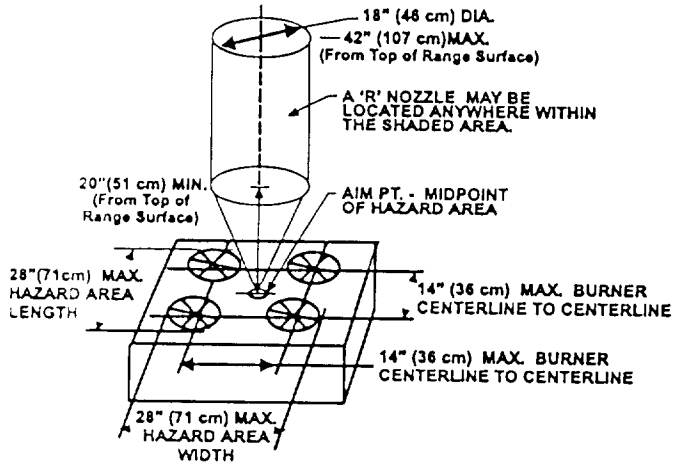


Figure 3-25. Four Burner Range

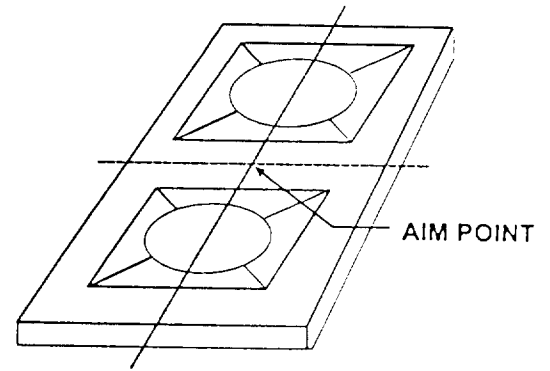


Figure 3-26. Two Burner Aim Point Center of Hazard

SINGLE BURNER RANGE

Special care is to be taken when aiming the 'R' nozzle over a single burner range. The aiming point is to be located 7" (18 cm) from the center of the burner. The nozzle placement shall fall within a cylindrical area generated by a 9" (23 cm) radius about the aiming point. The nozzle must be placed no more than 42" (107 cm) nor less than 20" (51 cm) above the hazard area. (See figure 3-27)

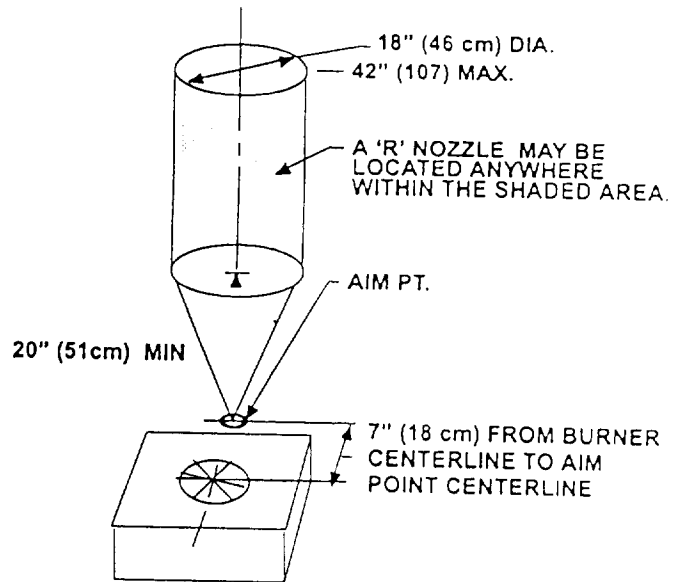


Figure 3-27. Single Burner Range

RANGE GUARD

The Wet Chemical Fire Suppression System

2-10 Nozzles Nozzles

There are essentially five types of nozzles in the Range Guard system with offerings in a one-piece and two-piece body configuration. An Appliance / Duct / Plenum Nozzle or ADP nozzle; a Fryer Nozzle or F Nozzle; a Mesquite Nozzle or DM nozzle; a Range Nozzle or R nozzle; a Gas Radiant / Wok Nozzle or GRW nozzle. Each nozzle is provided with a special foil seal over the discharge orifice to prevent grease from depositing in the orifice and plugging the nozzle. Each one-piece nozzle has a 3/8" (1.0 cm) NPT female connection while each two-piece nozzle has a 3/8" (1.0 cm) NPT male connection. All nozzles are equipped with a stainless steel internal strainer and incorporate chrome plated brass bodies. Each nozzle is identified by the nozzle type stamped on the body. Each nozzle has a flow number which is a measure of its discharge or flow rate. The nozzle types, code number and flow numbers are given in Table 2-3.

Note: it is permissible to interchange the two nozzle designs.

The swivel adapter, P/N B120021 may be used in conjunction with any one-piece nozzle. The ADP-S swivel nozzle may be used interchangeably only with the two-piece ADP nozzle.

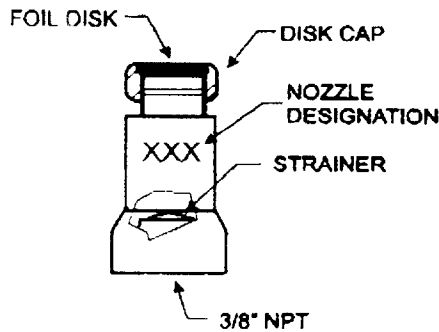


Figure 2-12. Section View for One-Piece Nozzle

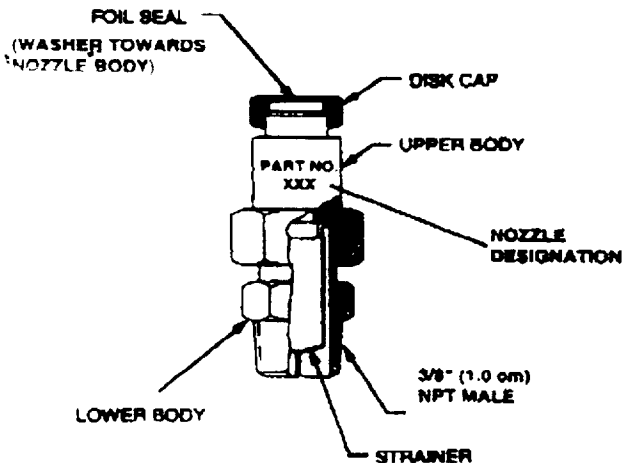


Figure 2-12a Section View for Two-Piece Nozzle

Table 2-3. Nozzle Flow Points

Nozzle Type	One-Piece Nozzle, Code No.	Two-Piece Nozzle, Code No.	Flow No.
ADP Nozzle	B120011	96981	1
GRW Nozzle	B120013	96506	1
R Nozzle	B120014	96508	1
F Nozzle (or 2-piece Plenum Nozzle)	B120012	96982	2
DM Nozzle	B120015	96980	3
ADP-S Nozzle	N/A	96979	1

Note: The "F" Nozzle in the one-piece configuration is identified as a "Plenum" nozzle in the two-piece configuration.

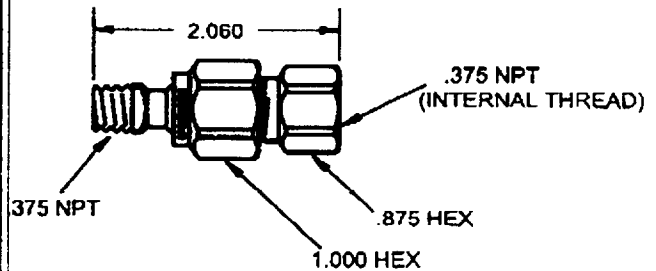


Figure 2-13. One-Piece Nozzle Swivel Adapter

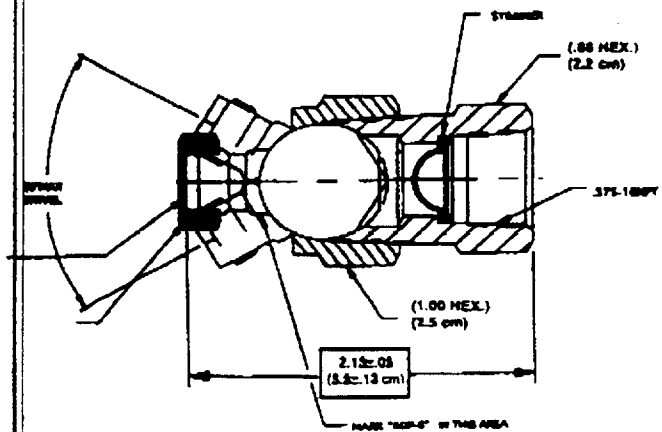


Figure 2-13a. Section View of a ADP-S Swivel Nozzle

MEMORANDUM

Sacramento Fire Department

To: BUILDING DEPARTMENT

Date: 12-4-98

From: Gordon Duncan,
Fire Marshal

Subject: **FIRE SYSTEM INSPECTION**

A final inspection of the newly installed fire system at:

6425 FLORIN PERKINS Rd

has been conducted by Inspector R. LAFOREST

on 12-1-98.

88-11717-C

Permit Number

N/A

Square Footage

KIT HOOD

Type Inspection

The system is acceptable by this department.

R Woodman

By: Ross L. Woodman,
Fire Prevention Officer II

88-309

F. D. Reference Number

