OPERATORS MANUAL

AVTEC®

This manual provides
Installation & Operating instructions for

MIST-A-FIRE SYSTEM

NOTIFY CARRIER OF DAMAGE AT ONCE.
It is the responsibility of the consignee to inspect the container upon receipt of same and to determine the possibility of any damage, including concealed damage. Avtec suggests that if you are suspicious of damage to make a notation on the delivery receipt. It will be the responsibility of the consignee to file a claim with the carrier. We recommend that you do so at once.

Manufacture Service/Questions 888-994-7636.

Information contained in this document is known to be current and accurate at the time of printing/creation. Unified Brands recommends referencing our product line websites, unifiedbrands.net, for the most updated product information and specifications.

P/N OMANUAL_MAF-02/07

UNIFIED BRANDS
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I. GENERAL DESCRIPTION

Water spray systems used for extinguishing cooking equipment [grease] fires are recognized by the National Fire Protection Association's (NFPA) Standards 13 and 96.

The Mist-A-Fire system is a water spray system that includes sprinklers to extinguish a fire.

Note: The word "sprinkler" is used in this document to indicate either a Listed Sprinkler or a Listed Automatic Spray Nozzle. The specifications for sprinklers are given in Section IV., 6.0.

All plumbing within the canopy is pre-piped chrome plated or stainless steel where exposed. Interconnection from the building sprinkler system to the Mist-A-Fire Control Panel and from the Control Panel to the ventilator are to be made by the Sprinkler Contractor.

The Mist-A-Fire Control Panel is Listed by Underwriters Laboratories Inc. (UL) as an Attachment to Sprinkler Systems as shown in the UL Fire Protection Equipment Directory. The Panel complies with the following specification:

NFPA 72: National Fire Alarm Code

All support plumbing and electrical components for the Mist-A-Fire System are located within the Mist-A-Fire Control Panel or Energy Distribution System. The panel should be located in an accessible area.

The Mist-A-Fire System is to be used in a building with a "wet" sprinkler system and installed in accordance with NFPA 13.

It is suggested that prior approval for installation be obtained from the Authority Having Jurisdiction.

II. INSTALLATION

A. General

Water pipes up to and including the sprinklers for cooking equipment surface protection, plenum protection [behind filter banks] and duct protection at the duct collar are installed by AVTEC during ventilator construction. Additional duct protection is usually installed at the job site.
Installation at the job site should be handled by the Sprinkler Contractor.

The local district office of Grinnell Fire Protection Systems may also be contacted. They can handle the contracting and entire installation. The telephone number for the local district office can be found in the Yellow Pages under "Sprinklers-Automatic Fire Systems", with over 70 locations across the United States and Canada.

B. Contractor Requirements

Refer to the AVTEC blueline drawing for your specific project. All connections are shown under:

MIST-A-FIRE ELECTRICAL CONTRACTOR REQUIREMENTS [NOTES: ME1A, ME1B, ME2] AND MIST-A-FIRE SPRINKLER CONTRACTOR REQUIREMENTS [NOTES: MC1, MP1, MP2, MP3, MP4, MP5, MP6, General Notes]

III. SEQUENCE OF OPERATION

A. General

This is a guide to the operation and testing of the Mist-A-Fire Control Panel. Personnel who are responsible for the operation and maintenance of the system should be familiar with the Panel and all of the detectors and alarm devices interfaced with it. Installations vary greatly from site to site, therefore, it is necessary for the operator to know what to expect from his particular system.

B. Normal Operation

When power is applied and all monitored circuits are in their normal operating condition, the green Light Emitting Diode [LED] will be illuminated and the Liquid Crystal Display [LCD] will read, "NORMAL OPERATION".

C. Trouble Conditions

A Trouble Condition occurs when a monitored circuit detects a condition which may prevent the Mist-A-Fire System from properly reacting to a fire. A Trouble Condition should be corrected as soon as possible. Whenever a Trouble Condition occurs, an alarm horn will sound [which can be silenced by pressing the MAF Horn Silence Switch] and the Trouble Relay contacts [TB-7] will switch.

1.0 Power Loss

If the power supply is interrupted the amber LED will illuminate, an alarm will sound and the display will read "TROUBLE POWER LOSS". The alarm can be silenced by pressing the MAF Horn Silence Switch, but the amber LED will remain lit, the display will continue to display "TROUBLE POWER LOSS" and the TB-7 contacts will remain in the Trouble position. When power is restored, the system will return to its Normal Operation condition.

2.0 Loss of Water Pressure

If the water pressure drops below thirty pounds per square inch [30 psi] and the system is equipped with the low pressure switch, the amber LED will illuminate, an alarm will sound and the display will read "TROUBLE PRESSURE LOW". The alarm can be silenced by pressing the MAF Horn Silence Switch, but the amber LED will remain lit, the display will continue to read "TROUBLE

PRESSURE LOW' and the TB-7 contacts will remain in the Trouble position. When pressure returns above 30 psi, the system will automatically return to the Normal Operation condition.

3.0 Supervised Shut-off Valve

If the supervised shut-off valve is closed, the amber LED will illuminate, an alarm will sound, fuel will shut OFF, and the display will read, "TROUBLE VALVE CLOSED". The alarm can be silenced by pressing the MAF Horn Silence Switch, but the amber LED will remain lit, the display will continue to display "TROUBLE VALVE CLOSED" and the TB-7 contacts will remain in the Trouble position. When the valve is fully opened, the system will automatically return to the Normal Operation condition.

NOTE: If the system is equipped with both the optional Low Pressure Switch and the Supervised Shut-off Valve, the amber LED will illuminate, the horn will sound, the Trouble Relay contacts [TB-7] will switch to the Trouble position and the LCD will alternate between "TROUBLE PRESSURE LOW" and "TROUBLE VALVE CLOSED". Pressing the Horn Silence Switch will turn OFF the alarm.

D. Fire Condition

A fire condition is detected when water flows through the system [actuating the Water Flow Switch] as a result of either an activated sprinkler or an open test valve. In order to avoid nuisance actuation, there is an adjustable delay built into the system. When the Water Flow Switch is actuated, the red LED will illuminate, the display will flash "FIRE", the alarm will sound, fuel will shut OFF, and the Fire Relay contacts [TB-8] will switch. The alarm CANNOT be silenced. The panel will remain in Fire Condition as long as water continues to flow through the Water Flow Switch. When the flow of water has stopped [either as a result of closing the test valve or closing the Supervised Shut-off Valve] the fire condition will automatically clear itself.

NOTE: By closing the Supervised Shut-off Valve, the system will be put into a Trouble Condition. [See Section III. C. 1.2]

E. Diagnostic LED Indicators

D-12 GREEN
Illuminates when the MAF II horn is energized.

D-15 RED
Illuminates when the Water Flow Switch is activated.

D-17 RED
Illuminates when the MAF II Horn Silence Switch is pressed.

D-22 GREEN
Illuminates when the 120vac power supply is energized.

D-24 GREEN
Illuminates when the MAF II Supervised Shut-off Valve is open [circuit closed].

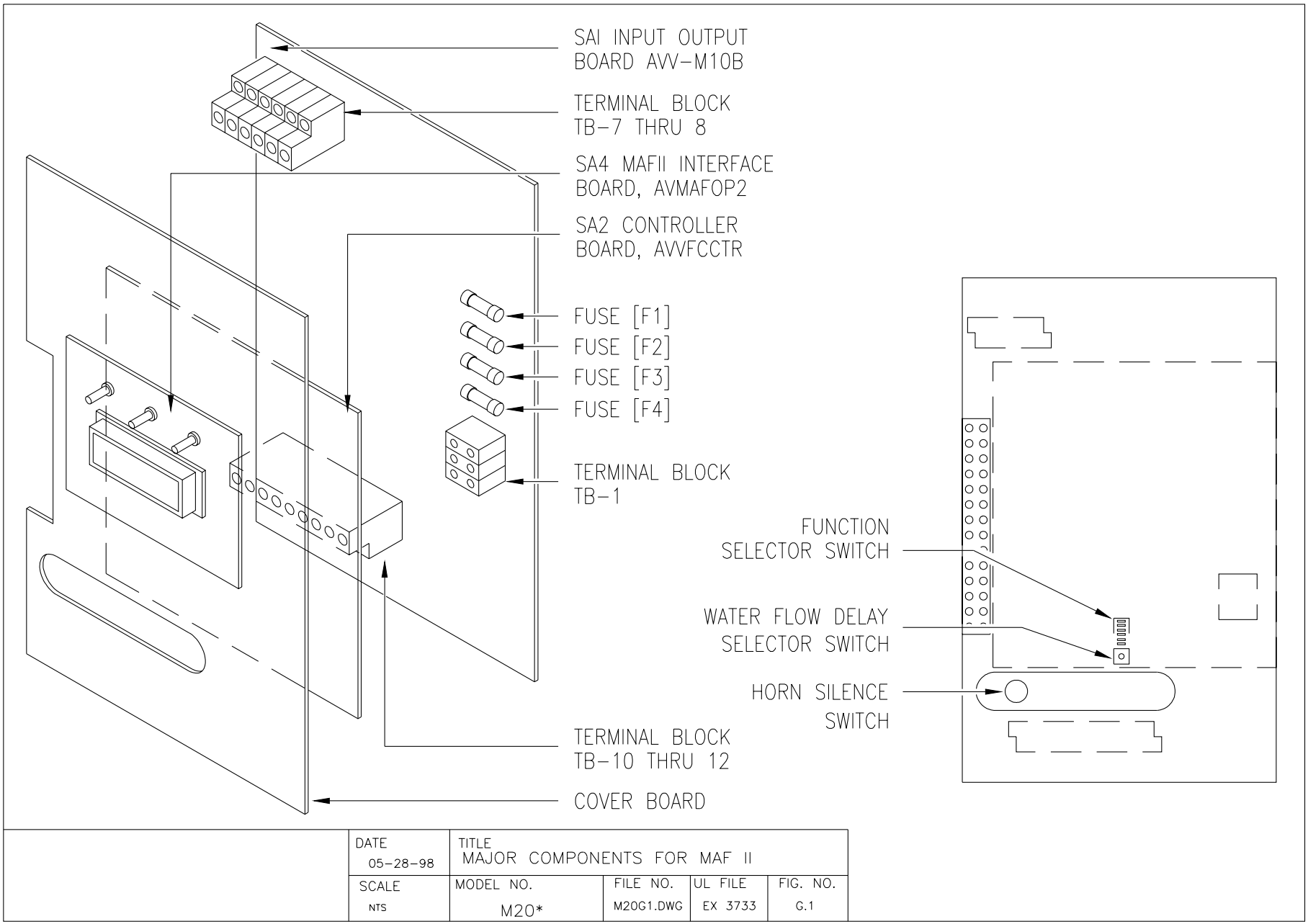
D-25 GREEN
Illuminates when the MAF II Water Flow Switch is not actuated [circuit closed].

D-26 GREEN
Illuminates when the MAF II Water Pressure Switch is above 30 psi. [circuit closed].

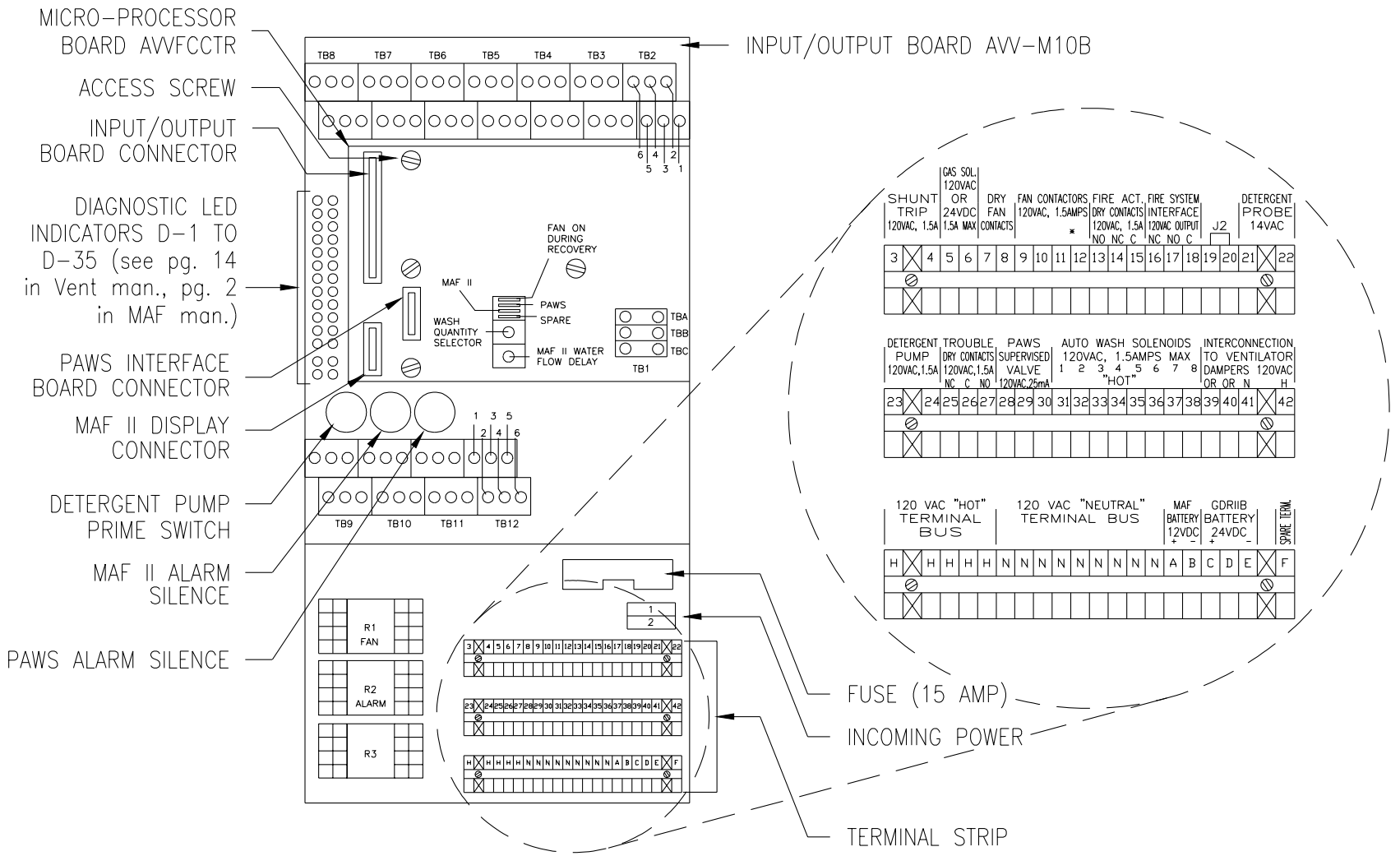
D-32 RED
Illuminates when the battery is being charged.

F. Input/Output Capacities

TB-1		1-Line Hot			
		2-Line Neutral	Incoming Power Supply 120vac, 15 amps. 60 Hz		
		3-Mech. Ground			
TB-2	*	1-Switched Hot	Wash Solenoid ≠ 1, 120vac, 1.5 amps max.		
	*	2-Neutral			
	*	3-Switched Hot	Wash Solenoid ≠ 2, 120vac, 1.5 amps max.		
	*	4-Neutral			
	*	5-Switched Hot	Wash Solenoid ≠ 3, 120vac, 1.5 amps max.		
	*	6-Neutral			
TB-3	*	1-Switched Hot	Wash Solenoid ≠ 4, 120vac, 1.5 amps max.		
	*	2-Neutral			
	*	3-Switched Hot	Wash Solenoid ≠ 5, 120vac, 1.5 amps max.		
	*	4-Neutral			
	*	5-Switched Hot	Wash Solenoid ≠ 6, 120vac, 1.5 amps max.		
	*	6-Neutral			
TB-4	*	1-Switched Hot	Wash Solenoid ≠ 7, 120vac, 1.5 amps max.		
	*	2-Neutral			
	*	3-Switched Hot	Wash Solenoid ≠ 8, 120vac, 1.5 amps max.		
	*	4-Neutral			
TB-5	*	1-Switched Hot	Detergent Pump, 120vac, 1.5 amps max.		
	*	2-Neutral			
	*	3-Switched Hot	PAWS alarm Horn, 120vac, 16 ma. max.		
	*	4-Neutral			
	*	5-Switched Hot	Fan Contactor, 120vac, 1.5 amps max.		
	*	6-Neutral			
TB-6	*	1-Switched Hot	Spare Output [PAWS] 120vac, 1.5 amps		
	*	2-Neutral			
		3-Switched Hot	Spare Output]MAF II] 120vac, 1.5 amps		
		4-Neutral			
		5-Neutral	Auxiliary	120vac, 8 amps max.	
		6-Hot	Power Tap		
TB-7		1-NC			
		2-C	Trouble Dry Contacts [MAF II] 1.5 amps @ 28vdc/120vac		
		3-NO			
		4-NC			
		5-C	Trouble Dry Contacts [MAF II] 1.5 amps @ 28vdc/120vac		
		6-NO			
TB-8		1-NC			
		2-C	Fire Dry Contacts [MAF II] 1.5 amps @ 28vdc/120vac		
		3-NO			
		4-NC			
		5-C	Fire Dry Contacts [MAF II] 1.5 amps @ 28vdc/120vac		
		6-NO			
TB-9	*	1-Line Hot	PAWS Supervised	120vac, 25 milliamps	
	*	2-Switched Hot	Valve Switch		
	*	3-Line Hot	PAWS Manual	120vac, 25 milliamps	
	*	4-Switched Hot	Fire Pull Switch		
	*	5-Line Hot	PAWS Automatic	120vac, 25 milliamps	
	*	6-Switched Hot	Fire Switch		
TB-10		1-Line Hot	MAF II Water	12vdc, 25 milliamps	
		2-Switched Hot	Flow Switch		
		3-Line Hot	MAF II Water	12 vdc, 25 milliamps	
		4-Switched Hot	Pressure Switch		
		5-Line Hot	MAF II Supervised	12vdc, 25 milliamps	
		6-Switched Hot	Valve Switch		
TB-11	*	1-Detergent	20vdc, 2 milliamps		
	*	2-Probe			
		3-Positive	MAF II Horn, 12vdc, 1.5 amps		
		4-Negative			
TB-12		1-Positive	Battery, 12v, 5A Hours		
		2-Negative			
		3-Positive	Auxiliary Power Tap, 19vdc, 0.5 amps		
		4-Negative			

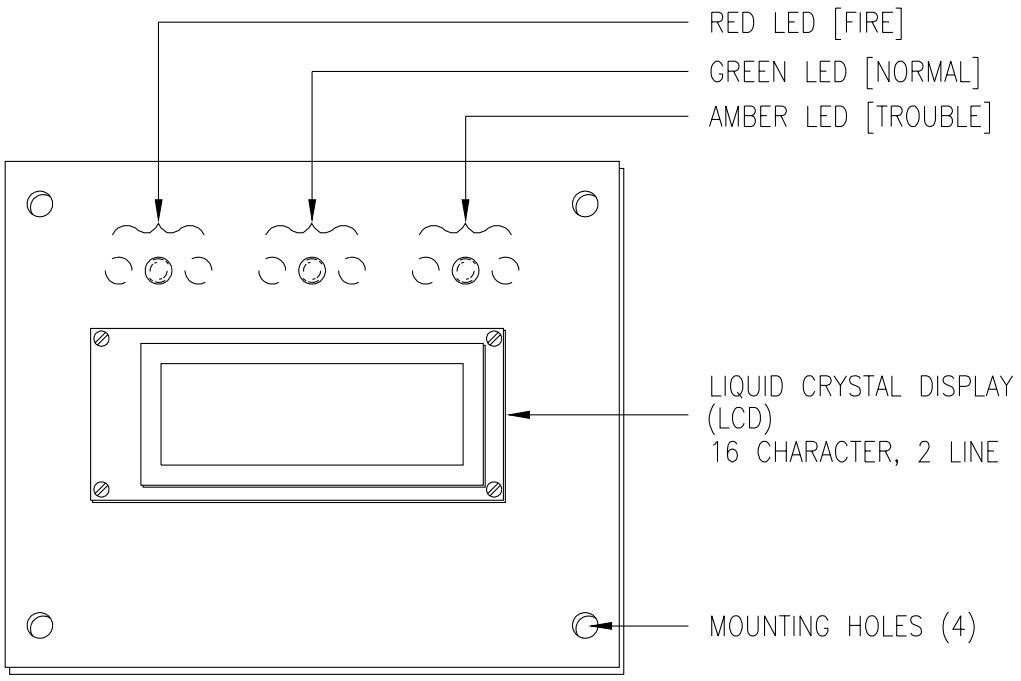


	DATE	TITLE			
	05-28-98	MAJOR COMPONENTS FOR MAF II			
	SCALE	MODEL NO.	FILE NO.	UL FILE	FIG. NO.
	NTS	M20*	M20G1.DWG	EX 3733	G.1

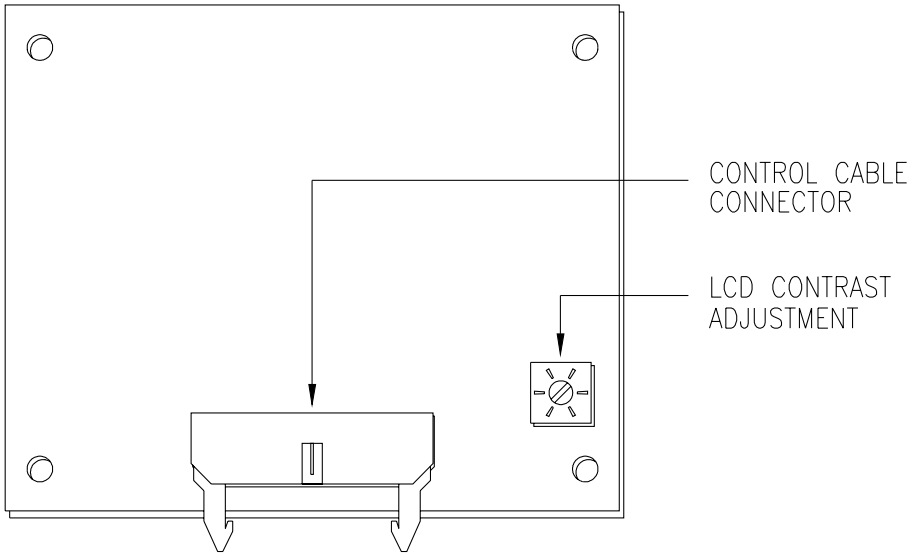


	DATE	TITLE			
	05-28-98	PAWS INPUT/OUTPUT AND MICRO-PROCESSOR BOARD COMPONENT LAYOUT			
	SCALE	MODEL NO.	FILE NO.	UL FILE	FIG. NO.
	NTS	M20*	M20G2.DWG	EX 3733	G.2

*Note: Optional Remote Cold Water Mist solenoid connected to terminals 11 & 12.



MAF II DISPLAY BOARD
FRONT (DISPLAY SIDE)



MAF II DISPLAY BOARD
BACK (CONNECTOR SIDE)

	DATE 05-28-98	TITLE MIST-A-FIRE II DISPLAY BOARD ASSEMBLY COMPONENTS			
	SCALE NTS	MODEL NO. M20*	FILE NO. M20G3.DWG	UL FILE EX 3733	FIG. NO. G.3

H. Gas Fuel Reset Station [GDRIIA]

1.0 General

The Gas Fuel Reset Station [GDRIIA] is primarily designed to provide a latching circuit for the gas valve[s] which is held open electrically. In addition, it provides circuitry to maintain the latching relay in the event of a momentary power loss shorter than one and one-half [1-1/2] seconds. A power loss longer than one and one-half [1-1/2] seconds will require that the circuit must be physically reset. [A contactor may be used for electrical cooking equipment].

2.0 Visual Indicators

2.1 Red Light Emitting Diode [LED] - Fuel Off

The red LED will glow when power to the gas valve solenoid[s] is interrupted and the fuel flow is shut off.

2.2 Amber Light Emitting Diode [LED] - Fuel Reset

The amber LED will glow when power is available to reset the latching circuit and the fuel flow is shut off. An audio alarm accompanies the amber LED indicating to the operator that fuel flow is ready to be restored.

2.3 Green Light Emitting Diode [LED] - Fuel On

The Green LED will glow when the latching circuit is energized and fuel is available to the cooking equipment.

3.0 Fire Condition

When the extinguishing system is in the "TROUBLE" or "FIRE" condition, power to the solenoid[s] and/or contactor[s] is interrupted. If the circuit breaker[s] is equipped with a fire shut off connection, the circuit breaker will trip off. Pressing the "Push To Reset" switch will not allow power to be applied to the gas valve solenoid[s].

NOTE: It is recommended that the circuit breaker[s] be equipped with self-interrupting capabilities.

4.0 Resetting the Circuit

When power is restored after an interruption greater than one and one-half [1-1/2] seconds [e.g., after a fire, power outage or initial start-up] the amber "Fuel Reset" LED and red "Fuel Off" LED will glow and the audio alarm will sound.

CAUTION

Ensure that all cooking equipment controls are in the "OFF" position before pressing the "Push To Reset" switch. Pilot lights must be manually relit after fuel flow is restored.

Press the "Push To Reset" switch. The audio alarm will be silenced, the amber and red LED's will go out and the green "Fuel ON" LED will illuminate. The pilot lights on the individual pieces of cooking equipment will now need to be manually relit.

5.0 Input/Output Capacities

Connector "A" [12 pin]

1.	**Line Hot**	Incoming Power Supply
2.	**Line Neutral**	120v/60/1ø, 2 amps
3.	**Common**	Form "C" Fire Switch 1.5 amps, 120vac
4.	**"Tripped" or "Fire"**	Form "C" Fire Switch
5.	**"Armed" or "Normal"**	Form "C" Fire Switch
6.	+	Audio Alarm 12vdc, 1.5 amps
7.	–	Audio Alarm
8.	**Switched Hot**	Fire Shut-Off, Breaker or Relay 120v/60/1.5amps
9.	**Neutral**	Fire Shut-Off, Breaker or Relay
10.	**Switched Hot**	Gas Solenoid 120v/60/1.5amps
11.	**Neutral**	Gas Solenoid
12.	**(Unused)**	

I. Gas Fuel Reset Station [GDRIIB]

1.0 General

The Gas Fuel Reset Station [GDRIIB] converts incoming power to charge the batteries and energize the gas valve solenoid[s]. It also incorporates a latching circuit for the gas valve[s] which is held open electrically.

The GDRIIB is also connected to the cooking equipment fire extinguishing system. In the event of actuation of the extinguishing system, power is removed from the gas valve solenoid[s] and applied to the circuit breaker fire shut-off terminals, thus cutting the fuel source.

2.0 Visual Indicators

2.1 Red Light Emitting Diode [LED] - Fuel Off

The red LED will glow when power to the gas valve solenoid[s] is interrupted and the fuel flow is shut off.

2.2 Amber Light Emitting Diode [LED] Fuel Reset

The amber LED will glow when power is available to reset the latching circuit and the fuel flow is shut off. An audio alarm accompanies the amber LED, indicating to the operator that fuel flow is ready to be restored.

2.3 Green Light Emitting Diode [LED] -Fuel On

The Green LED will glow when the latching circuit is energized and fuel is available to the cooking equipment.

3.0 Battery Circuit

The GDRIIB contains a circuit to constantly provide power to charge the batteries and operate the gas valve solenoid[s]. A red LED located on the reverse side glows whenever the batteries are being charged. In the event of a power loss, the gas valve[s] will continue to be held open for as long as one and one-half [1-1/2] hours depending on size, type and quantity of gas valve solenoid, and the condition of the batteries.

4.0 Fire Condition

When the extinguishing system is in the "TROUBLE" or "FIRE" condition [other than power loss] power to the solenoid[s] is interrupted. If the circuit breaker[s] is equipped with a fire shut-off connection, the circuit breaker will trip off. Fuel may not be restored until the fire condition has been cleared.

NOTE: It is recommended that the circuit breaker[s] will be equipped with self-interrupting capabilities.

5.0 Resetting the Circuit

After power to the gas valve solenoid[s] has been interrupted [e.g., after a fire or at initial start-up] and is restored, the red "Fuel Off" LED and amber "Fuel Reset" LED will glow and the audio alarm will sound.

CAUTION

Ensure that all cooking equipment controls are in the "OFF" position before pressing the "Push to Reset" switch. Pilot lights must be manually relit after fuel flow is restored.

Press the "Push To Reset" switch. The audio alarm will be silenced, the amber and red LED's will go out and the green "Fuel ON" LED will illuminate. The pilot lights on the individual pieces of cooking equipment will now need to be manually relit.

6.0 Input/Output Capacities

Connector "A" [12 pin]

1. **Line Hot** — Incoming Power Supply
2. **Line Neutral** — 120v/60/1ø, 2 amps
3. **Common** — Form "C" Fire Switch
4. **"Tripped" or "Fire"** — Form "C" Fire Switch
5. **"Armed" or "Normal"** — Form "C" Fire Switch 1.5 amps, 120vac
6. **+** — Audio Alarm 12vdc, 1.5 amps
7. **–** — Audio Alarm
8. **Switched Hot** — Fire Shut-Off, Breaker or Relay 120v/60/1.5amps
9. **Neutral** — Fire Shut-Off, Breaker or Relay
10. (Unused)
11. (Unused)
12. (Unused)

Connector "B" [9 pin]

1. **Hot** [#4] — Transformer Primary [120v/60/1ø]
2. **Neutral** [#2] — Transformer Primary
3. **Hot** [#6] — Transformer Secondary [32v]
4. **Common** [#8] — Transformer Center Tap [32v]
5. **Hot** [#10] — Transformer Secondary
6. **+** — Batteries [24vdc]
7. **–** — Batteries
8. **+** — Gas Solenoid [24vdc, 1.5 amps]
9. **–** — Gas Solenoid

IV. ENGINEERING DATA

A. General

The Mist-A-Fire system is to be interconnected to the building sprinkler system. The following are requirements of the system:

1.0. Pipe Size

Pipe size is determined by the quantity of sprinklers required. [See Pipe Sizing Guide, paragraph 5.0, figure 1]

2.0. Water Pressure

30 PSI Minimum, 175 PSI Maximum as shown on the pressure gauge within the panel. NOTE: If water pressure exceeds 175 PSI, a pressure reducing valve [approved by the authority having jurisdiction] must be supplied and installed ahead of the Mist-A-Fire panel by the Sprinkler Contractor [or other prescribed contractor].

3.0. Volume of Water [GPM]

Refer to Pipe Sizing Guide, paragraph 5.0 [figure 1] to determine the volume of water required. We recommend that the building sprinkler contractor review plans to ensure that adequate water volume will be supplied.

4.0. Duct and Plenum Protection

4.1. Plenum

One (1) Listed sprinkler or spray nozzle will protect up to ten feet (10'-0") of plenum [maximum of five feet (5'-0") from the centerline of sprinkler]. Temperature rating: 325 - 375°F. The sprinkler is to be located to provide a maximum distance of 5'-0" from the center line of the sprinkler to the end of the plenum or 10'-0" to the next sprinkler.

4.2. Exhaust Duct

Temperature rating: 325 - 375°F. Each exhaust duct will be provided with one (1) sprinkler. Additional sprinklers may be required per NFPA 13, standard for the Installation of Sprinkler Systems. All exhaust duct sprinklers [unless otherwise specified] will have a removable panel for servicing.

4.3. Additional Sprinklers

NFPA 13 requires sprinklers at the top of each vertical duct riser and at each duct offset except when all equipment is served by Listed grease extractors.

If these additional sprinklers are required, they shall be supplied and installed by the Sprinkler Contractor and connected to the building sprinkler system.

5.0. Pipe Sizing Guide (Fig. 1)

The following data is based on NFPA 13 and 96. Check with the authority having jurisdiction to determine the quantity and location of sprinklers to comply with local codes.

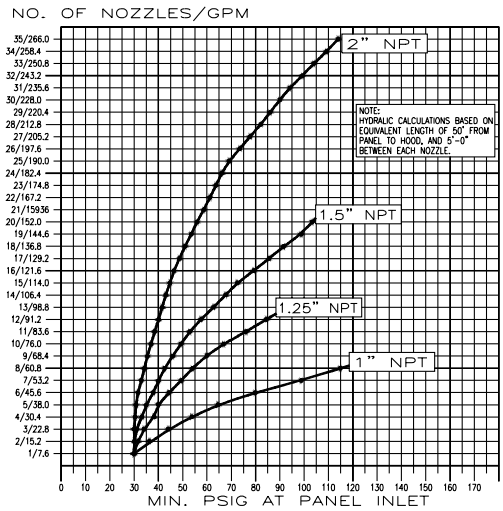


fig. 1

NOTES:

1. All data based upon a flow pressure of 30 PSI out the sprinkler.
2. 1¼" minimum pipe size for ventilators requiring duct and plenum protection.

6.0. Sprinkler Data

6.1. Temperature Rating & Frame Color:

250 - 300°F	-	Blue
325 - 375°F	-	Red
400 - 475°F	-	Green
500 - 575°F	-	Orange

6.2. Angle of Deflection:

150° - 180°

6.3. Orifice Size:

Diameter : 0.25" minimum
K factor : 1.3 minimum

6.4. Material & Finish:

Duct & Plenum: Brass, natural
Surface Protection: Brass, chrome plated

7.0. Sprinkler Locations

7.1. Canopy Hood

Typical sprinkler drops for canopy hoods are shown in figure

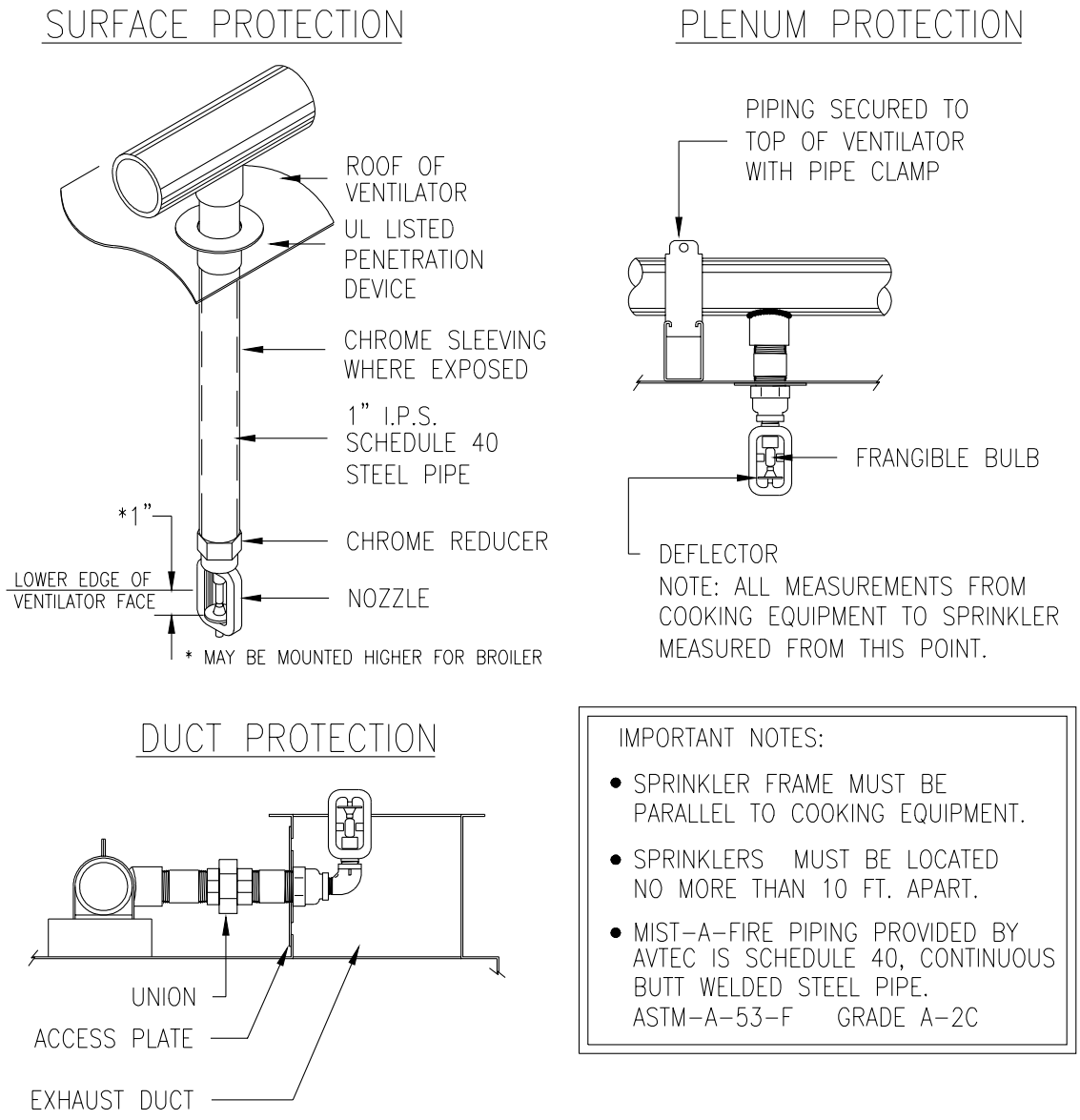


fig. 2

7.2. Backshelf Hood

Typical sprinkler drop for back shelf hood is shown in figure 3.

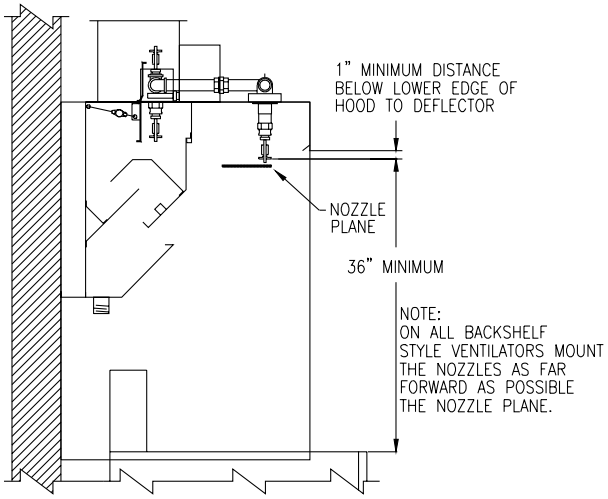


fig. 3

7.3. Exhaust Duct and Plenum

Typical Sprinkler drop for exhaust duct and plenum protection is shown in figure 2.

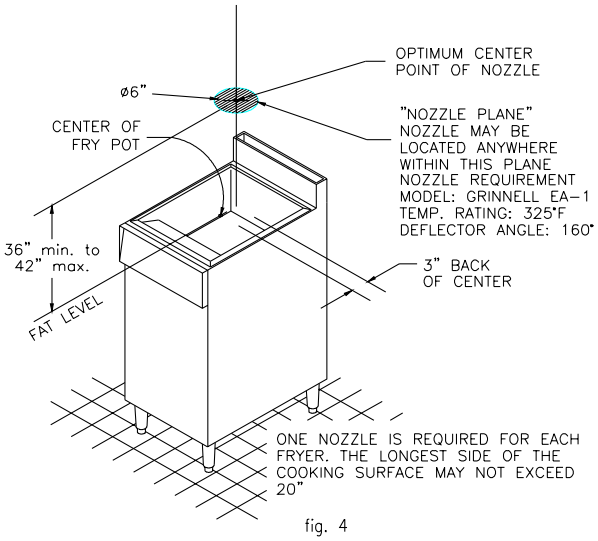


fig. 4

7.4. Fryers

One (1) sprinkler is required for each fryer, provided that the fryer does not exceed 20" in any plan dimension. [See figure 4]

NOTE: Sprinklers must be Listed for use above deep fat fryers. Model EA-1, 160º angle, 250 - 325ºF, 1/4" Orifice, date coded prior to October 2, 1997.

7.5. Ranges, Griddles, Hot Tops and Hot Plates with High Shelves

One (1) sprinkler will cover up to six (6) linear feet of ranges, griddles, hot tops and/or hot plates. The sprinkler must be located within a 6" by 6" area [deflector plane] starting 1" in front of the high shelf and centered [left to right] over the equipment. The mounting height of the sprinkler is 24" minimum and 42" maximum, measured from the cooking surface to the deflector of the sprinkler. [See figure 5]

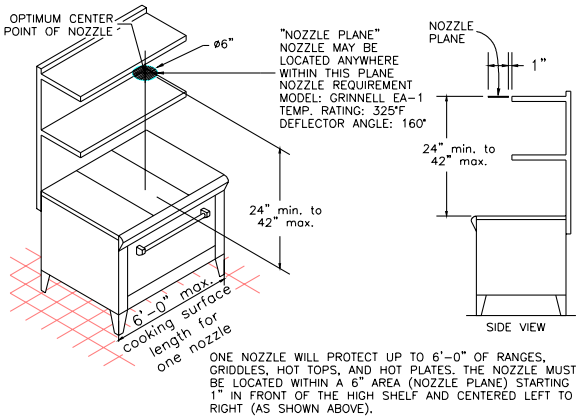


fig. 5

7.6. Salamander Broiler

One (1) sprinkler is required for each salamander broiler. This sprinkler will protect the equipment below the salamander as long as the sprinkler falls within the sprinkler plane required for that particular piece of cooking equipment. The sprinkler may be located within an area 0-3" in front of the top edge of the compartment opening, or within a 6" by 6" area centered [left to right] and 1" above the top of the broiler. [See figure 6]

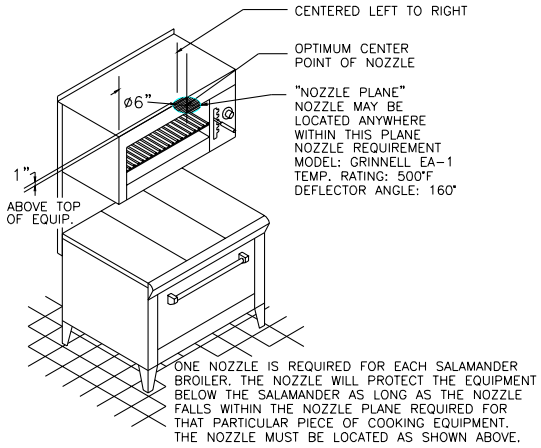


fig. 6

7.7. Upright Broiler

Upright broilers require one (1) sprinkler within a 6" by 6" area [center left to right, and from the front edge of the equipment forward] and 1" above the top of the broiler. [See figure 7]

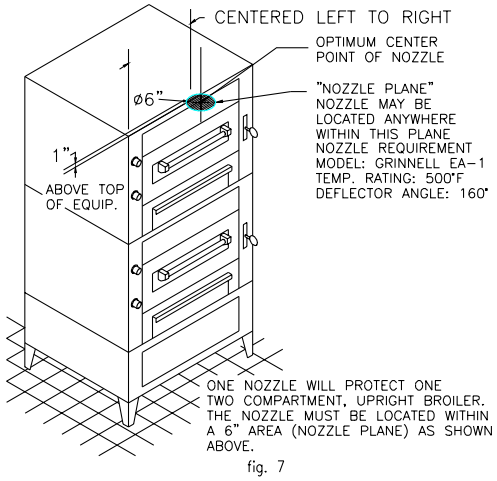


fig. 7

7.8. Tilting Braising [Fry] Pan

One (1) sprinkler will protect a tilting braising [fry] pan up to 48" wide. The sprinkler must be located within a 6" by 6" area [sprinkler plane] starting 1" in front of the center of the cooking surface and centered from left to right. The mounting height of the sprinkler is 24" minimum and 42" maximum, measured from the cooking surface to the deflector of the sprinkler. [See figure 8] The sprinkler may be offset forward to clear lid.

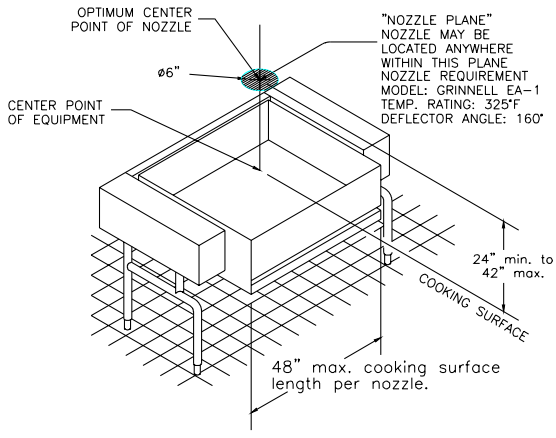


fig. 8

7.9. Conveyor Broiler

One (1) 500°F sprinkler is required for each conveyor broiler. The sprinkler must be located within a 6" x 6" area [sprinkler plane] over the center of the equipment. [See figure 9]

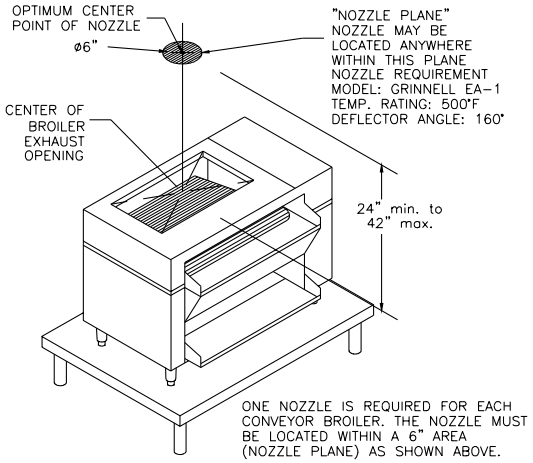


fig. 9

7.10. Broilers [Gas, Electric and Solid Fuel]

One (1) 500° sprinkler will protect up to 48" of broiler. The sprinkler must be located within a 6" x 6" area [sprinkler plane] over the center of the equipment. The mounting height of the sprinkler is a minimum of 24" and a maximum of 42" measured from the cooking surface to the deflector of the sprinkler. [See figure 10]

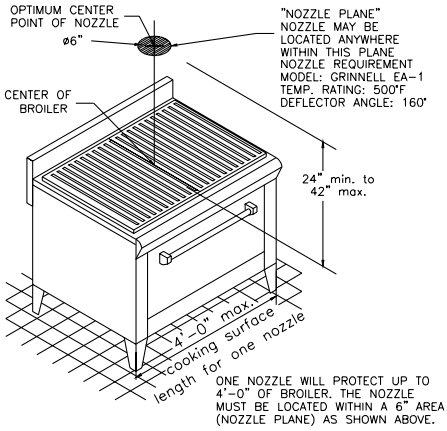


fig. 10

7.11 Ranges, Griddles, Hot Tops and Hot Plates

One (1) sprinkler will cover up to 6'-0" of ranges, griddles, hot tops and/or hot plates. The sprinkler must be located within a 6 x 6" area [sprinkler plane] centered above the equipment. The mounting height of the sprinkler is a minimum of 24" and a maximum of 42" measured from the cooking surface to the deflector of the sprinkler. [See figure 11]

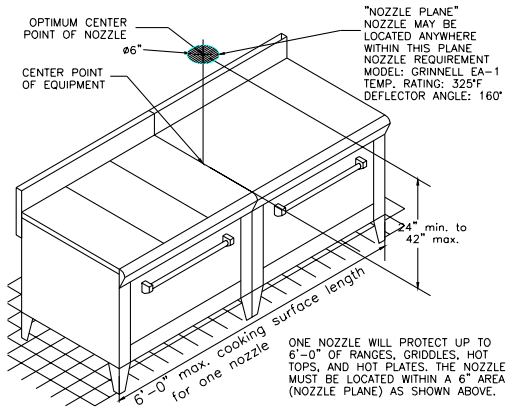


fig. 11

7.12 Range/Griddle/Hot Top w/ overshelf salamander broiler

When a Range/Griddle or a Hot Top is combined with an overshelf Salamander Broiler, (2) Mist-A-Fire nozzles are provided. [See figure 12]

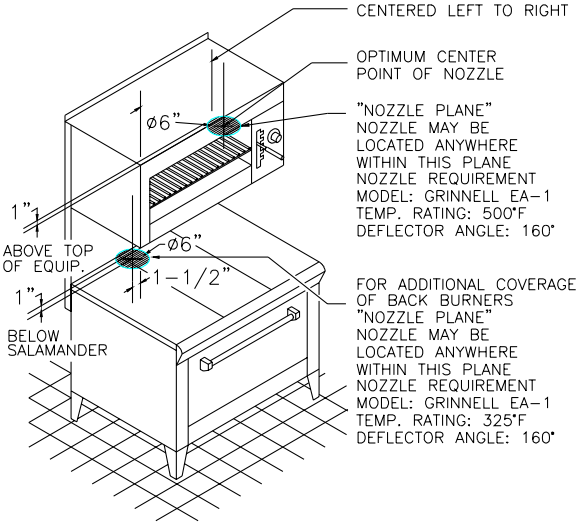


fig. 12

8.0 Test Valve Placement

Each Mist-A-Fire System is supplied with a test valve located at the end of the piping system above the ventilator. Opening the test valve simulated the discharge of a single sprinkler.

The location of the test valve is shown on the AVTEC drawing for your specific installation.

The test valve will be pre-piped to the wash plenum on auto wash [AW series] ventilators. Non-auto wash [AF, AX and AL series] hoods are provided with a 3/4" hose thread connector that is to be routed to a drain for testing.

9.0 Friction Loss in Equivalent Pipe Length for Mist-A-Fire Cabinet

Pipe Size, NPT	Equivalent Length, Feet
1"	16
1 1/4"	17
1 1/2"	17
2"	19

MIST-A-FIRE PARTS LIST

ELECTRICAL

AVTEC PART NO.	DESCRIPTION
EL FUS 0304	Fuse [SC-15]
EL BLK 0315	Fuse Block [Holder]
EL SWT 0313	Flush Toggle Switch
EL HRN 0302	Horn
EL BAT 0301	12v Battery 5amp HR
EL ASY 0301	MAF M20 Circuit Board Assembly
EL ASY 0302	P15 MAF/PAWS Circuit Board Assembly
EL TER 0301	Output terminal for converting MAF/PAWS Assemblies
EL RLY 0317	Output relay for converting MAF/PAWS Assemblies
EL ASY 0304	Gas Delay Reset Assembly GDRIIA,120v AC
EL ASY 0305	Gas Delay Reset Assembly Model #GDRIB,24vdc
PL SHT 0302	Replacement Red Plexiglass for 412-0320 [MAFII Assembly Model No. M20]
PP LBL 0304	MAF Faceplate w/o Slot
PP LBL 0305	GDRII Faceplate w/Slot

PLUMBING

AVTEC PART NO.	DESCRIPTION
PB VLV 0309	3/8 ball valve [test valve]
PB VLV 0311	1" Supervised Valve
PB VLV 0312	1-1/4" Supervised Valve
PB VLV 0313	1-1/2" Supervised Valve
PB VLV 0314	2" Supervised Valve
EL SWT 0328	1" Flow Switch w/two sets of contacts
EL SWT 0345	Pressure Switch
EL SWT 0329	2" Flow Switch
PB TEE 9802	1" x 1" x TEE, B.I.
PB TEE 0314	1-1/4" x 1-1/4" x 1" TEE, B.I.
PB TEE 0311	1-1/2" x 1-1/2" x 1" TEE, B.I.
PB CPL 550	1/2" Coupler, Stainless Steel
PB CPL 0318	Chrome Bell Reducer 1"-1½"
PB UNN 0310	1" Union, B.I.
PB UNN 0309	1-1/4" Union, B.I.
PB UNN 0308	1-1/2" Union, B.I.
PB UNN 0307	2" Union, B.I.
AS NZL 0305	MIST-A-FIRE nozzle, 325°F, 160°, deflector, for surface protection
AS NZL 0306	MIST-A-FIRE nozzle, 325ºF, 160º Deflector for Duct & Plenum Protection
AS NZL 0307	MIST-A-FIRE nozzle, 500°F, 160° deflector for surface protection
PB TUB 0308	Chrome Sleeving 1-3/8" O.D.
PB CLM 0301	1" pipe clamp
PB CLM 0302	1-1/4" pipe clamp
PB CLM 0303	1-1/2" pipe clamp
PB CLM 0304	2" pipe clamp

V. MAINTENANCE

AVTEC recommends the Mist-A-Fire sprinklers receive periodic cleaning with hot detergent water and a bristle brush to remove grease and lint particles. Frequency of cleaning will vary depending on the installation, however it is imperative the sprinklers are kept clean for accurate temperature sensitivity and activation.

VI. SYSTEM TESTING

A. General

Periodic system testing is required to ensure reliability. N.F.P.A. Standards 96 & 13 recommend testing, and inspection of the fire suppression system every six months, including a water flow test. Local fire codes may specify the frequency and depth of such tests. These codes will vary from community to community and also between installations, depending on both the installation and type of building[s] involved.

NOTE: If your system is using the auxiliary alarm system connection, to a local energy master box or for a remote transmitter, inform the personnel at the receiving panel of the time you expect to begin testing. When testing has been completed call them again to let them know. Personnel in the area where the alarm device testing is to take place should also be advised. The ideal time to test the alarm system is when a minimum number of people are in the building to minimize confusion or disruption of normal activities. However, personnel in the affected area should be familiar with fire alarm operation and should practice evacuation procedures as appropriate.

B. Certification and Inspection Report

A Mist-A-Fire Certification and Inspection Report will be used for the initial start-up and certification, usually in the pressence of the local Fire Inspector.

Subsequent periodic tests should follow the same procedure. Please perform the test procedures in the order in which they are presented. If additional information is required, reference Section **III,** Sequence Of Operation.

VII. QUICK REFERENCE VISUAL INDICATOR GUIDE

A. Green LED On

1.0 Display reads "NORMAL CONDITION".

1.1 This is the only condition under which the system is to be considered operational.

B. Amber LED On

1.0 Display reads "TROUBLE POWER LOSS".

1.1 120vac power interrupted or not connected.

1.2 The audio alarm sounds and can be silenced by pressing "MAF Horn Silence" switch.

2.0 Display reads "TROUBLE PRESSURE LOW".

2.1 Water pressure has dropped below 40 psi.

2.2 The audio alarm sounds and can be silenced by pressing "MAF Horn Silence" switch.

3.0 Display reads "TROUBLE VALVE CLOSED".

3.1 Supervised shut-off valve is not fully open.

3.2 The audio alarm sounds and can be silenced by pressing "MAF Horn Silence" switch.

C. Red LED On

1.0 Display reads "FIRE, FIRE, FIRE".

1.1 Water flow sensed by the flow switch. Any spray nozzle discharging water will cause sufficient flow to actuate the flow switch.

1.2 The audio alarm cannot be silenced.

2.0 The system can be tested by opening the test valve located on top of the ventilator. The water drains into the water wash compartment on a wash down hood or requires a water hose routed to a floor drain or sink on a non-wash down hood [3/4" hose threads are provided].

3.0 If a nozzle is accidentally broken, notify the fire department [if they are automatically signaled], close the supervised valve and replace the nozzle.

4.0 The fire condition will actuate the fire relay contacts. Power will be interrupted to the gas valve solenoid[s] and applied to any circuit breaker with a relay trip.

VIII.

-WARRANTY-

AVTEC INDUSTRIES INC. warrants to the original purchaser for use of our products, that any part thereof which proves to be defective in material or workmanship under normal use within one year from date of installation, will be replaced free of charge, labor to replace such part is warranted for one year from installation. All warranty labor to be performed during regular working hours, with no overtime premium.

All Warranty service must be authorized by the factory and be performed by AVTEC's authorized service personnel.

This Warranty is limited to the United States and Canada.

This Warranty does not apply to any damage resulting from shipping, improper installation, accident, unauthorized alteration, local codes not previously brought to the attention of AVTEC, misuse, or abuse; and does not cover loss of food, other products or damage to equipment or property resulting from mechanical or electrical failure.

AVTEC neither makes nor assumes and does not authorize any other person to assume any other obligation or liability in connection with its products other than that covered in this Warranty.