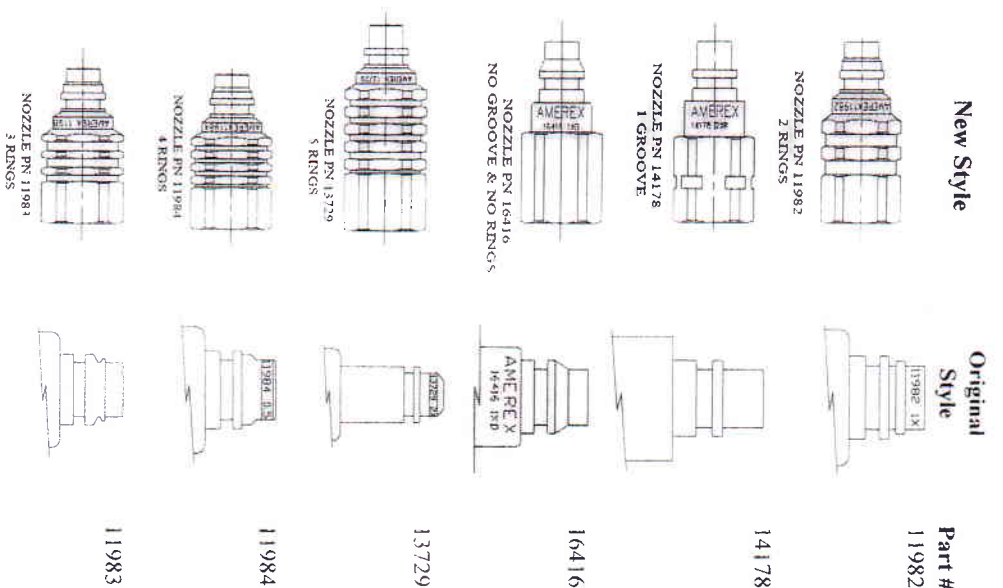


Appliance	Nozzle #	Flow Pt	Width in inches	Length in inches	Min High inches	Max High inches	Page #
Deep Fat Fryer, no dripboard	13729	2	19 1/2	19	36	48	3-6
Deep Fat Fryer, with dripboard	13729	2	19 1/2	25 3/8	36	48	3-6
Deep Fat Fryer, Split no dripboard	13729	2	14	15	40	50	3-8
Deep Fat Fryer, Split with dripboard	13729	2	14	21	40	50	3-8
Deep Fat Fryer, no dripboard	13729	2	26	24	36	50	3-7
Deep Fat Fryer, w/ 1" dripboard	13729	2	26	25	36	50	3-7
Deep Fat Fryer, with dripboard low prox	2-11982	2	19 1/2	25 3/8	17 1/2	36	3-6
Range - Single Burner low prox	11984	1/2	18	18	20	24	3-9
Range - Single Burner	11984	1/2	18	18	24	42	3-9
Range - Two Burner 14"	11982	1	14	28	44	48	3-9
Range - Two Burner 12"	11982	1	12	24	36	50	3-10
Range - Two Burner 12" w backshelf	11982	1	12	24	40	47	3-11
Range - Three Burner	2-11984	1	12	36	20	30	3-11
Range - Four Burner 12"	14178	2	24	24	18	50	3-12
Back Shelf Manifold	17461	1	15-16	42	14	19	3-24
Griddle - perimeter	11982	1	30	36	30	48	3-13
Griddle - perimeter	14178	2	30	48	24	50	3-15
Griddle - perimeter low prox	14178	2	30	48	15	24	3-15
Griddle - overhead	13729	2	30	42	38	50	3-14
Upright Broiler (salamander/cheese melter)	2-11984	1	30 1/2	28 1/2			3-18
Charbroiler - lava rock	11983	1 1/2	24	24	18	44	3-16
Charbroiler - gas/elec radiant	11982	1	24	24	18	48	3-16
Charbroiler - natural/Mesquite charcoal	11983	1 1/2	24	28 1/2	16	42	3-17
Charbroiler - Mesquite chips/chunks	11983	1 1/2	24	28 1/2	16	48	3-17
Charbroiler - Mesquite logs	11983	1 1/2	24	28 1/2	19	44	3-17
Chain Broiler - closed top	11982	1	24 1/2	31			3-19
Chain Broiler - open top	13729	2	24 1/2	31	12	36	3-19
Chain Broiler - Neco 9025	4-11982	4	18	24	13	36	3-20
Chain Broiler - Duke	2-13729	4			15	30	3-21
Wok	11982	1	14-24 dia.	4-7 deep	40	50	3-12
Plenum	Nozzle #	Flow Pt	Max Width in feet	Max Length in feet			3-5
Single or V Bank	11982	1	4'	10			
Duct	Nozzle #	Flow Pt	Max Perimeter	Diameter	Length	Max Diagonal in inches	
Rectangular	16416	1	50			18.80	3-1
Circular	16416	1		16			3-1
Rectangular	2-16416	2	51.84			18.80	3-2
Circular	2-16416	2		26			3-2
Rectangular	2-11983	3	100			37.20	3-2
Circular	2-11983	3		32			3-2
Rectangular	3-11983	4 1/2	150			55.90	3-3
Circular	3-11983	4 1/2		48			3-3

The information on this chart is provided for quick reference only. Please consult the current Amerex KP/ZD manual to confirm all appliance coverages and nozzle placements.



Minimum Piping Requirements

Appliance	Min Linear Feet	Equivalent Feet	Min Flow Points per System
Fryer	6.5	10	2
Wok	9	22.1	6
Range	7	16.4	4

Supply Line Limitations (max vertical rise is 10' from point of discharge)

Cylinder Size - Flow Points (fp)	Pipe Size in Inches	Max Linear Feet of Pipe	Max Qty of Tees	Max Qty of Elbows	Max Qty of Bushings
275 - 8fp	3/8	20	1	5	0
375 - 11fp	3/8 or 1/2	25	1	5	1
475 - 14fp	1/2	25	1	5	2
600 - 18fp	1/2	25	1	5	2
2-375 - 22fp	1/2	30	2	7	2

Note: 1. Use 3/8 supply line only when all piping is to be 3/8. **2.** The only manifold option is two 375 cylinders.

Supply Branch Line

Cylinder Size - Flow Points (fp)	Pipe Size in Inches	Max Feet of Pipe Straight	Max Feet of Pipe Split	Max Qty of Tees	Max Qty of Elbows	Max Qty of Bushings
275 - 8fp	3/8	20	25	7	8	0
375 - 11fp	3/8 or 1/2	27	30	10	8	2
475 - 14fp	3/8	27	30	12	8	2
600 - 18fp	as noted	3/8" or 1/2" = 35'	3/8" only = 50'	14	8	2
2-375 - 22fp	1/2	1/2" = 40' (*3/8"=30')	1/2" = 45 (*3/8"=30')	18	8	0

Note: 1. In a single 375 Straight system, 5' of pipe may be transferred from supply line to supply branch.

Note: 2. 3/8" pipe with manifolded 375s is permitted only when the supply line is less than or equal to 20'.

Nozzle Branch Line

Cylinder Size - Flow Points (fp)	Pipe Size in Inches	Total Linear Feet of Pipe	Max Qty of Tees	Max Qty of Elbows	Max Qty of Bushings
275 - 8fp	3/8	32	5	10	0
375 - 11fp	3/8 or 1/2	32	8	12	11
475 - 14fp	3/8	32	10	15	2
600 - 18fp	3/8	32	11	18	15
2-375 - 22fp	3/8	32	18	18	20
Max Per Nozzle Branch		7	3	6	4

The information on this chart is provided for quick reference only. Please consult the current Amerex KP/ZD manual to confirm pipe allowances.

General Considerations

1. No 1/2" pipe nozzle branches less than 12" in length are allowed.
2. Max of (4) flow points per nozzle branch line.
3. Types of nozzles on a nozzle branch line may be mixed.
4. In the case of a system piping network having all single flow point nozzles, there shall be no nozzle branch line less than 12" in length.
5. The cylinder discharge fitting, hose and distribution block are not included in the piping calculations.
6. If a flex distribution hose is used in a nozzle branch line, then 48" of piping shall be subtracted from the overall allowable pipe for a nozzle branch line. (4' of hose + 3' of pipe = 7' max nozzle branch length)
7. Any fitting (s) associated with the installation of a flex distribution hose shall be counted against the overall nozzle branch piping limitations.
8. No mixing of pipe sizes within a piping category (supply line, supply branch line, nozzle branch line) is allowed. (i.e. one nozzle branch line is 1/2" pipe - all nozzle branches are to be 1/2" pipe.
9. 1/2" pipe for nozzle branches is allowed only in an (11) flow point system.
10. The maximum allowable vertical rise of pipe above the supply branch

December 2008

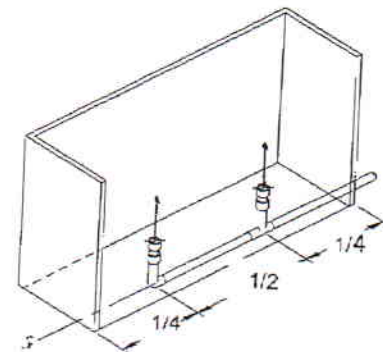
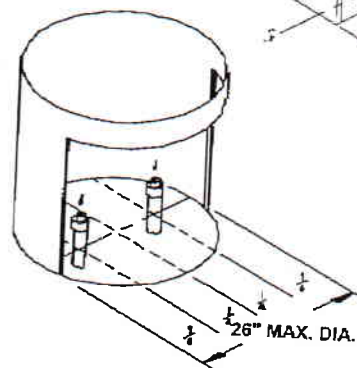
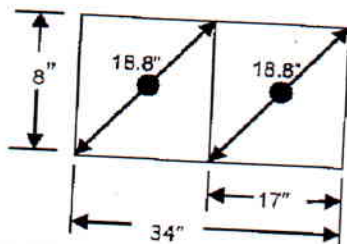
Section 3 Design
 Amerex Restaurant Fire Suppression System (EX 4658)

Page 3 - 2
 (EX 4658)

DUCT PROTECTION LIMITATIONS - TWO NOZZLES (2 x P/N 16416)

Two Amerex Duct Nozzles (P/N 16416) will protect ducts with a perimeter of 51 inches to 84 inches (129.5 - 208.3 cm) or a maximum diameter of 26 inches (66 cm). To correctly position the nozzles in a rectangular duct divide the duct along its longest side into four equal distances. A circular duct should be divided along a centerline into four equal distances. A nozzle should be placed at one quarter of the duct's width (or diameter) with both nozzles on the centerline, paced 2-8 inches (5.08 - 20.3 cm) into the duct opening and aimed at the center of the modular cross section of the duct. Each nozzle has one flow point.

NOTE: In no case can the diagonal dimension of each module exceed 18.8 inches (46 cm).



DUCT PROTECTION LIMITATIONS - MULTIPLE NOZZLES (P/N 16416)

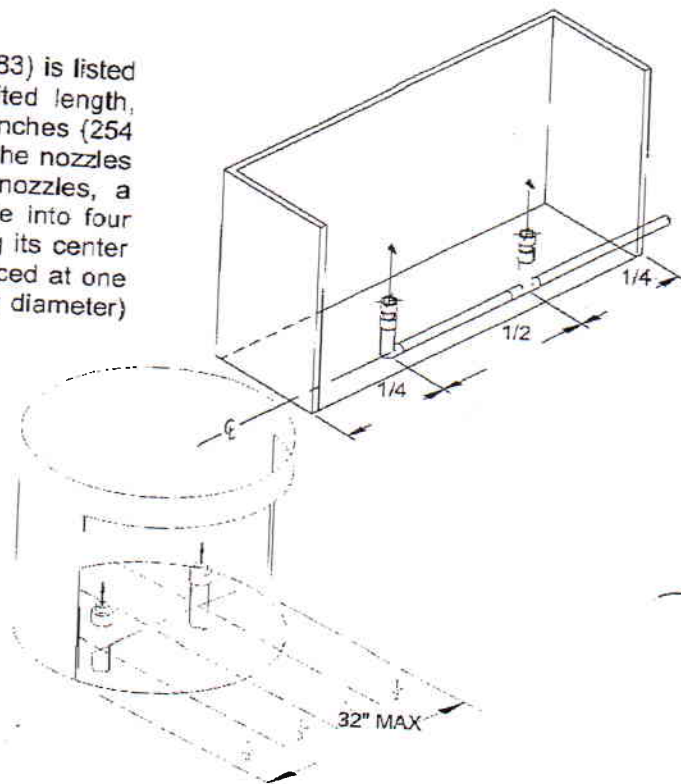
Protecting ducts larger than 84 perimeter inches (208.3 cm) utilizing the single flow point nozzle (P/N 16416). Divided the perimeter by 42 (104 cm) and round up to the next whole number. Divide the duct cross section into the same number of equally sized modules. Check the modules to insure they are equal to or less than 50 perimeter inches and have a diagonal equal to or less than 18.8 inches. If they meet the criteria then place a duct nozzle in the center of each module, 2"-8" into the hood/duct opening.

DUCT PROTECTION LIMITATIONS 100 IN. PERIMETER TWO - 1 1/2 FLOW POINT NOZZLES (P/N 11983)

The Amerex Solid Fuel Appliance/Duct Nozzle (P/N 11983) is listed to protect a restaurant cooking exhaust duct of unlimited length, unlimited changes in direction and up to 100 perimeter inches (254 cm) or 32 inch diameter (81.2 cm) using two nozzles. The nozzles total three flow points and to properly position the nozzles, a rectangular duct should be divided along its longest side into four equal distances. A circular duct should be divided along its center line into four equal distances. The nozzles are to be placed at one quarter and three quarters position of the duct width (or diameter) with both nozzles on the center line, placed 2 - 8 inches (5.08 - 20.3 cm) into the duct opening and aimed straight up in a vertically run duct.

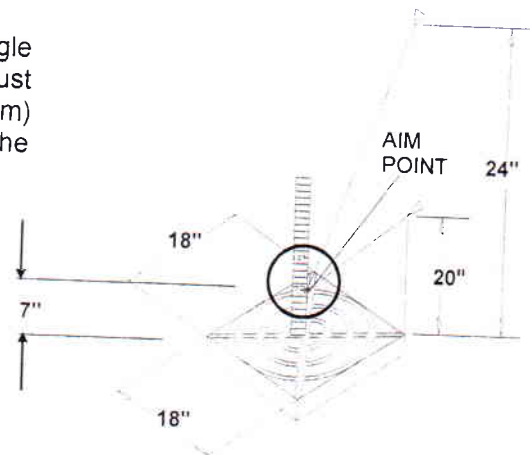
NOTE: In no case can the diagonal dimension of the duct exceed 37.2 inches (94.4 cm) without adding additional duct nozzles.

NOTE: The use of one Duct Nozzle P/N 11983 is permitted for duct 50 perimeter inches or less in the same manner as Duct Nozzle 16416.



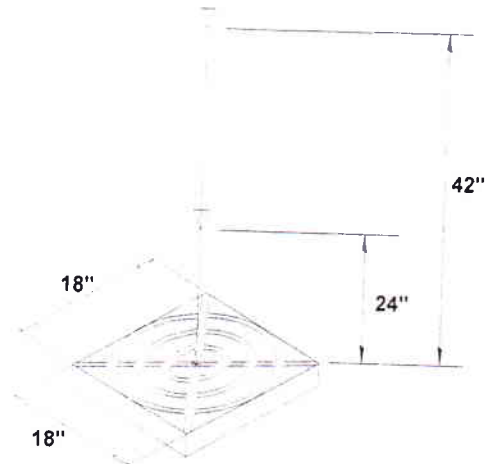
SINGLE BURNER RANGE PROTECTION ONE - ½ FLOW POINT NOZZLE (P/N 11984)

The Amerex half (½) flow point nozzle (P/N 11984) will protect a single burner with a surface area of 18" x 18" (46 x 46 cm). The nozzles must be located on the perimeter of the burner and 20 to 24" (51 - 61 cm) above the burners surface. The nozzle is aimed at a point 7" above the center of the burner.



SINGLE BURNER RANGE PROTECTION - OVERHEAD ONE - ½ FLOW POINT NOZZLE (P/N 11984)

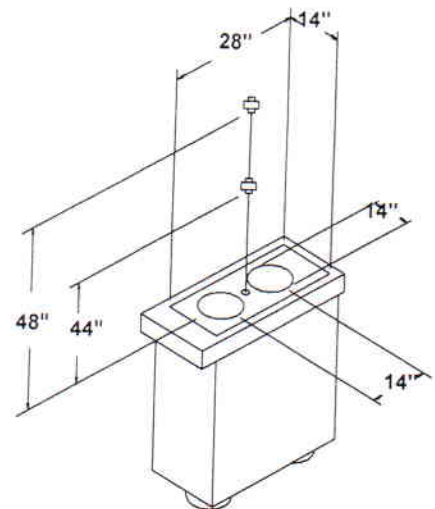
The Amerex half (½) flow point nozzle (P/N 11984) will protect a single burner with a surface area of 18" x 18" (46 x 46 cm). The nozzles must be located directly above the center of the burner and 24 to 42" (61 - 107 cm) above the burners surface. The nozzle is aimed at the center of the burner.



TWO BURNER RANGE PROTECTION - SINGLE FLOW POINT NOZZLE (P/N 11982)

The Amerex appliance, plenum nozzle (P/N 11982) has one flow point and will protect a range surface area of 14" x 28" (36 x 71 cm). The center to center distance between burners must not exceed 14" (36 cm). The nozzle must be located 44 - 48" (112 - 122 cm) above the range surface and centered between the two burners. The range surface area is measured from the outside of the burner to the outside of the burner.

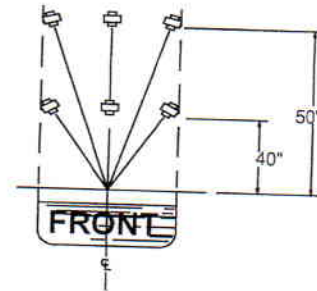
NOTE: Maximum and minimum heights must be measured from the tip of nozzle to the surface of the appliance.



FRYER PROTECTION (SPLIT VAT)**TWO FLOW POINT NOZZLE (P/N 13729)**

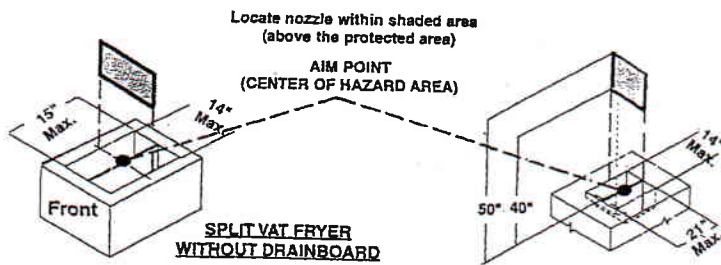
MAXIMUM AREA: 14 in. (35.5 cm) X 21 in. (53.5 cm) (including drainboard interface area)
14 in. (35.5 cm) x 15 in. (38.1 cm) (not including drainboard interface area)

The Amerex fryer nozzle (P/N 13729) uses two flow points and will protect a split vat fryer. If the fryer does not include a drainboard, the maximum fryer dimensions for single nozzle coverage are 15" x 14" (38.1 x 35.5 cm) and the maximum protected area is 1.46 ft² (1356 cm²). If the fryer does contain a drainboard, the maximum fryer dimensions for single nozzle coverages are 21" x 14" (53.5 x 35.6 cm) and the maximum protected area is 2.0422 (1897 cm²). However, the maximum hazard area must not exceed 15" x 14" (38.1 x 35.5 cm). The nozzle must be located within the protected area on a line perpendicular to the longest side of the fryer passing through the center of the hazard area. Nozzle heights must be within 40 to 50 inches (101.6 – 127 cm) above the appliance surface and aimed to the center of the hazard area of the appliance.



SPLIT VAT FRYER
WITH DRAINBOARD

NOTE: Maximum and minimum heights must be measured vertically from the tip of nozzle to the top of the appliance.

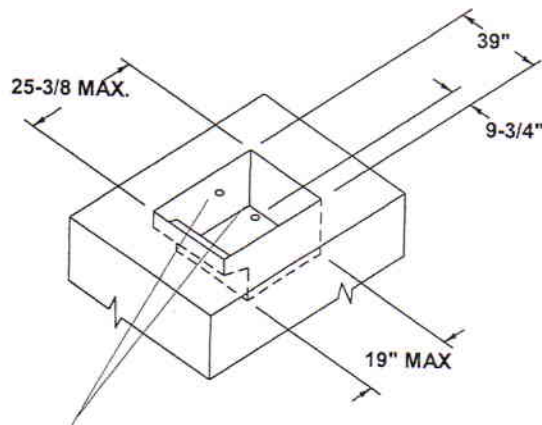


SPLIT VAT FRYER
WITHOUT DRAINBOARD

SPLIT VAT FRYER
WITH DRAINBOARD

FRYERS EXCEEDING SINGLE NOZZLE PROTECTION:

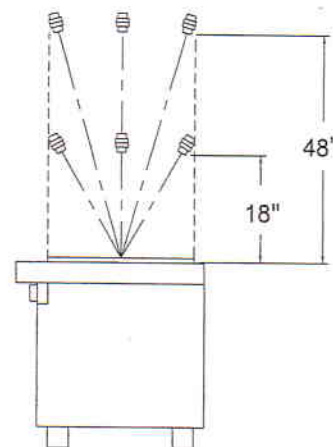
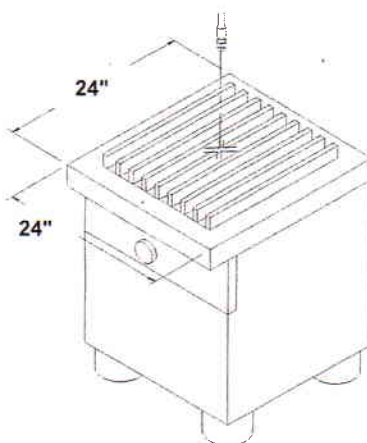
Multiple Amerex fryer nozzles (P/N 13729) may be used to protect single vat fryers with maximum protected areas exceeding single vat coverages up to a maximum protected area of 6 ft². The fryer must be divided into modules for each module as indicated for single nozzle coverages. For modules that do not include drainboards, the maximum module dimensions for single nozzle coverage is 19 1/2" x 19" (50 x 48 cm) and the maximum protected area is 2.53 ft² (2350 cm²). If the module does contain a drainboard, the maximum module dimensions for single nozzle coverage is 25 3/8" x 19 1/2" (65 x 50 cm) and a maximum protected area is 3.44 ft² (3195 cm²). However, the maximum frying area of a module must not exceed 19 1/2" x 19" (50 x 48 cm).



AIM POINTS

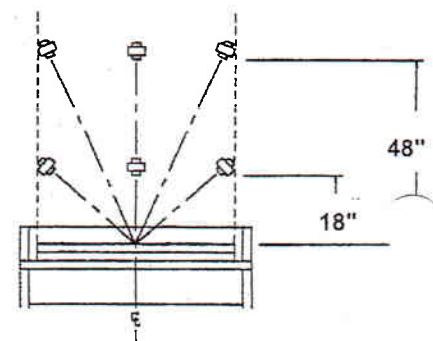
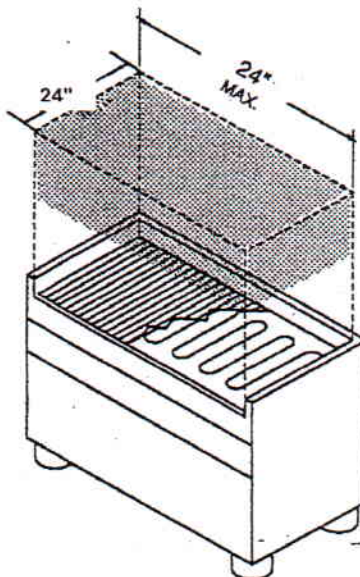
**GAS RADIANT CHARBROILER PROTECTION
SINGLE FLOW POINT NOZZLE (P/N 11982)**

One Amerex plenum nozzle (P/N 11982) will protect a gas radiant charbroiler with a cooking surface measuring 24 inches X 24 inches (61 x 61cm) maximum. The nozzle uses one flow point. It must be located 18 to 48 inches (46 – 122 cm) above the cooking surface and anywhere along or within the perimeter aimed towards the center.

**ELECTRIC RADIANT CHARBROILER
PROTECTION SINGLE FLOW POINT
NOZZLE (P/N 11982)**

Note: Electric charbroilers with a non-grated surface or a solid ribbed surface may be protected using the same limitations as a griddle.

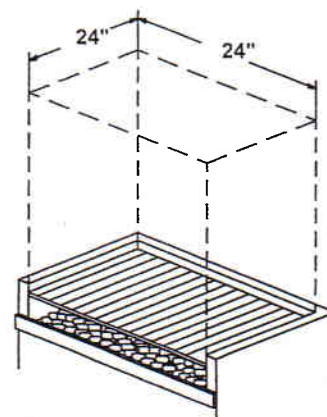
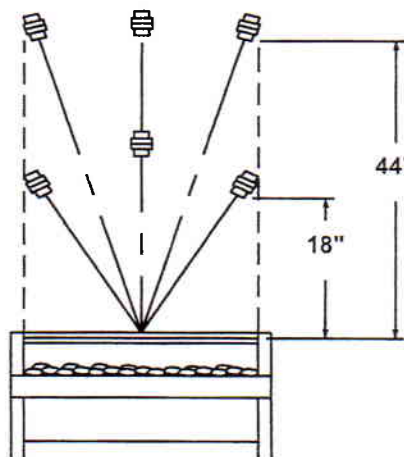
Electric charbroilers with an open grate may be protected with one Amerex appliance, plenum nozzle (P/N 11982) provided that the area is no larger than 24 inches X 24 inches (61 x 61 cm). The nozzle uses one flow point and must be located within 18 – 48 inches (46 – 122 cm) above the grate surface, anywhere along or within the perimeter of the protected area, aimed towards the center.



Note: Max. & Min. heights must be measured from the tip of nozzle to the top of the cooking surface

**LAVA ROCK (CERAMIC/SYNTHETIC) CHARBROILER
SINGLE FLOW POINT NOZZLE (P/N 11983)**

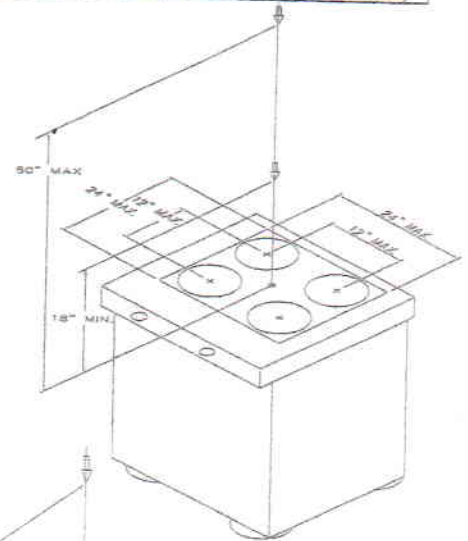
A single Amerex solid fuel appliance plenum nozzle (P/N 11983) will protect a lava rock charbroiler with a maximum cooking surface of 24 inches wide (61 cm) by 24 inches deep (61 cm). The appliance nozzle uses 1 ½ flow points and for this application must be located between 18 to 44 inches (46 to 122 cm) above the cooking surface anywhere along or within the perimeter of the appliance aimed toward the center.



**FOUR (4) BURNER RANGE PROTECTION
TWO (2) FLOW POINT NOZZLE (P/N 14178)**

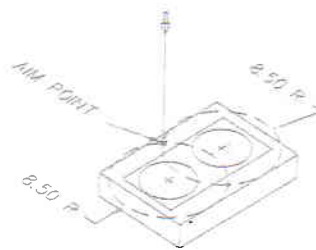
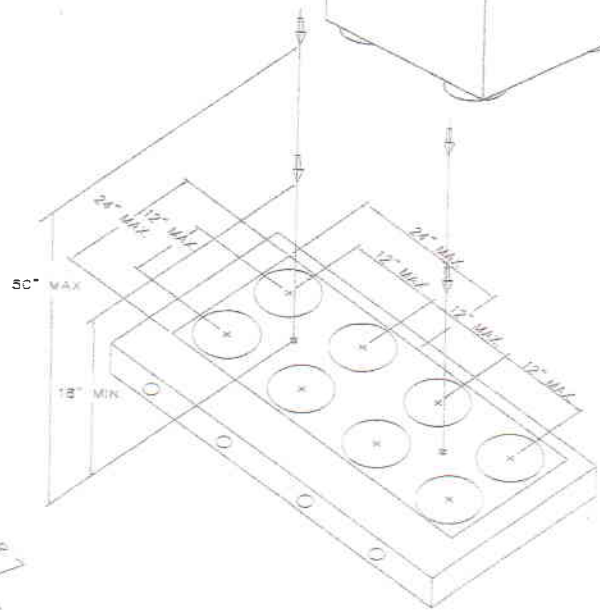
The Amerex 4 burner range nozzle (P/N 14178) has two (2) flow points and will protect a range surface area of 24" x 24" (61 x 61 cm). The center to center distance between burners must not exceed 12 inches. The nozzle must be located 18 – 50" (46 – 127 cm) above the range surface and centered between the burners. The nozzle is aimed straight down at the center of the appliance.

NOTE: Maximum and minimum heights must be measured from the tip of nozzle to the surface of the appliance.

**RANGE PROTECTION -
MULTIPLE NOZZLES (P/N 14178)**

For ranges that have a surface area exceeding the capabilities of a single nozzle, multiple nozzles must be used provided that the surface area of the range is divided into equally sized modules. Each module must be equal to or less than 24" x 24" (61 x 61 cm).

NOTE: When using this nozzle to protect a two (2) burner range the aiming point is where an 8.50" radius from the center of each burner crosses one another.

**WOK PROTECTION -
SINGLE FLOW POINT NOZZLE (P/N 11982)**

The Amerex appliance plenum nozzle (P/N 11982) has one flow point and will protect a wok with dimensions between a minimum diameter of 14" (36 cm) and a maximum diameter of 24" (61 cm) inclusive. The wok must have a height dimension between a minimum of 4" (10 cm) and a maximum of 7" (18 cm) inclusive. The nozzle must be centered over the center of the wok and located at a height between 40" (102 cm) and 50" (127 cm) from the bottom of the inside of the wok and aimed at the center of the wok.

