

Capacity/Selection Data

Series “LG” Mixing Tubes and MULTI-RATIO™ Mixers

General

The capacity of an “LG” Mixing Tube or MULTI-RATIO™ Mixer is determined by its physical size, by the size, type, and number of burners or nozzles through which it fires, and by the field conditions under which it operates.

Choose from the following capacity/selection tables for the combination of mixer, burner and operating conditions of your application.

Slight variations in combustion chamber pressure, draft conditions or the availability of secondary air can affect capacity and performance.

With STICKTITE™ Burner Nozzles

Capacities and nozzle sizing information are provided at right for burner systems utilizing these mixers with STICKTITE™ Burner Nozzles. The left side of the table deals with capacities, and is based on natural gas firing against balanced or slightly positive combustion chamber pressures.

Maximum capacities are cataloged for four different air differential pressures (measured at inlet to the mixer).

Back pressures of +.15" wc will reduce capacities by 5%; back pressures of +.25" wc by 15%.

Draft conditions will permit some degree of overfiring if secondary air is available around the burner and if additional flame length can be tolerated.

To select a mixing tube and burner combination, determine required heat release and your available air differential pressure as measured at the mixer inlet. Read downward in the appropriate column to the desired maximum heat release. Then read across that line to find the mixer designation and the “HD” STICKTITE™ Nozzle size.

Multiple nozzles can be used, but the actual capacities will depend upon the type, size and quantity of nozzles selected for your application.

| Maximum Capacity (1000's Btu/hr) at differential combustion air pressures (measured at mixer inlet) | | | | Minimum Capacity 1000's Btu/hr | Mixer Designation MR=MULTI-RATIO® LG=LG Mixing Tube | HD STICKTITE® Nozzle Size |
|--|--------|-------|-------|---|--|---------------------------------|
| 15 osi | 11 osi | 7 osi | 5 osi | | | |
| 95 | 80 | 65 | 55 | 13 | MR LG -75-22 | 3/4"-6 |
| 105 | 90 | 70 | 60 | 17 | MR LG -75-25 | 3/4"-7 |
| 130 | 110 | 90 | 75 | 21 | MR LG -100-28 | 1"-8 |
| 160 | 135 | 110 | 95 | 26 | MR LG -100-31 | 1"-9 |
| 210 | 180 | 150 | 125 | 32 | MR LG -125-37 | 1-1/4"-10 |
| 280 | 240 | 195 | 165 | 44 | MR LG -125-41 | 1-1/4"-12 |
| 340 | 300 | 240 | 210 | 60 | MR LG -125-46 | 1-1/4"-14 |
| 450 | 380 | 310 | 265 | 75 | MR LG -150-56 | 1-1/2"-16 |
| 560 | 430 | 380 | 325 | 100 | MR LG -150-63 | 1-1/2"-18 |
| 690 | 580 | 475 | 400 | 120 | MR LG -200-70 | 2"-21 |
| 800 | 690 | 555 | 475 | | MR LG -200-73 | |
| 990 | 855 | 680 | 580 | 160 | MR LG -200-80 | 2"-24 |
| 1190 | 1010 | 825 | 700 | 210 | MR LG -300-98 | 2-1/2"-27 |
| 1420 | 1210 | 980 | 830 | | MR LG -300-106 | |
| 1760 | 1490 | 1200 | 1000 | 245 | MR LG -300-116 | 3"-30 |
| 2090 | 1780 | 1450 | 1200 | 290 | MR LG -400-124 | 4"-34 |
| 2550 | 2180 | 1750 | 1480 | 460 | MR LG -400-136 | 4"-41 |
| 3040 | 2580 | 2000 | 1660 | | MR LG -400-142 | |
| 3160 | 2650 | 2080 | 1685 | | | |
| 3620 | 3100 | 2500 | 2050 | 720 | MR LG -500-157 | 5"-50 |
| 3910 | 3350 | 2600 | 2100 | | MR LG -500-166 | |
| 4160 | 3520 | 2850 | 2400 | | | |
| 4850 | 4020 | 3200 | 2600 | | | |

Nomenclature – Both MULTI-RATIO™ Mixers and Series “LG” Mixing Tubes are identified by a 3-part designation.

For example: MR-75-22 or LG-75-22

“LG” or “MR” indicates mixer type; -75 indicates discharge pipe size in inches (75 = 3/4", 150 = 1-1/2", etc.); -22 indicates throat diameter of air orifice plate in 64ths of an inch (22 = 22/64" air port diameter)

Capacity/Selection Data

Series "LG" Mixing Tubes and MULTI-RATIO™ Mixers with Sealed Nozzles

Capacities and nozzle sizing

information is provided at right for systems utilizing these mixers with SEALED NOZZLES. The left side of the table deals with capacities, and is based on natural gas firing against balanced or slightly positive combustion chamber pressures.

Maximum capacities are cataloged for four different air differential pressures (measured at inlet to mixer). Be sure to allow for piping losses from combustion air blower.

Back pressures of +.15" wc will reduce capacities by 5%; back pressure of +.25" wc by 15%.

To select a mixer and burner combination, determine required heat release and your available air differential pressure. Read downward in the appropriate column to the desired maximum heat release. Then read across that line to find the mixer designation and the SEALED NOZZLE size.

Multiple nozzles can be used, but the actual capacities will depend upon the type, size and quantity of nozzles selected for your application.

| Maximum Capacity (1000's Btu/hr) at differential combustion air pressures (measured at mixer inlet) | | | | Minimum Capacity 1000's Btu/hr | Mixer Designation MR=MULTI-RATIO® LG=LG Mixing Tube | "SN" Sealed Nozzle Size |
|--|--------|-------|-------|---|--|-------------------------------|
| 15 osi | 11 osi | 7 osi | 5 osi | | | |
| 95 | 80 | 65 | 55 | 13 | MR LG -75-22 | 3/4"-5 |
| 105 | 90 | 70 | 60 | 17 | MR LG -75-25 | 3/4"-7 |
| 130 | 110 | 90 | 75 | 26 | MR LG -100-28 | 1"-9 |
| 160 | 135 | 110 | 95 | | MR LG -100-31 | |
| 210 | 180 | 150 | 125 | 44 | MR LG -125-37 | 1-1/4"-12 |
| 280 | 240 | 195 | 165 | | MR LG -125-41 | |
| 340 | 300 | 240 | 210 | 60 | MR LG -125-46 | 1-1/4"-14 |
| 450 | 380 | 310 | 265 | 75 | MR LG -150-56 | 1-1/2"-16 |
| 560 | 430 | 380 | 325 | 100 | MR LG -150-63 | 1-1/2"-18 |
| 690 | 580 | 475 | 400 | 150 | MR LG -200-70 | 2"-20 |
| 800 | 690 | 555 | 475 | 160 | MR LG -200-73 | 2"-24 |
| 990 | 855 | 680 | 580 | | MR LG -200-80 | |
| 1190 | 1010 | 825 | 700 | 210 | MR LG -300-98 | 2-1/2"-27 |
| 1420 | 1210 | 980 | 830 | | MR LG -300-106 | |
| 1760 | 1490 | 1200 | 1000 | | MR LG -300-116 | |
| 2090 | 1780 | 1450 | 1200 | 360 | MR LG -400-124 | 3"-33 |
| 2550 | 2180 | 1750 | 1480 | 560 | MR LG -400-136 | --- |
| 3040 | 2580 | 2000 | 1660 | | MR LG -400-142 | |
| 3160 | 2650 | 2080 | 1685 | | LG | |
| 3620 | 3100 | 2500 | 2050 | 720 | MR LG -500-157 | --- |
| 3910 | 3350 | 2600 | 2100 | | MR LG -500-166 | |
| 4160 | 3520 | 2850 | 2400 | | MR LG -500-166 | |
| 4850 | 4020 | 3200 | 2600 | | LG | |

Capacity/Selection Data

Series “LG” Mixing Tubes and MULTI-RATIO™ Mixers with Style A or B LINOFLAME® Burners

Sizing and capacity information for systems using these mixers and Style A or B LINOFLAME® Burners is shown on page 3208.

This information is applicable for natural gas or propane gas firing, with fuel supply being regulated in the range of 3" wc to 8" w.c.

If burners will be firing in still air, use the information in the table on page 3208, which is based on balanced pressures in combustion chamber and on 100% premixture (on-ratio firing).

If burners are to be used to heat an air stream, follow the guidelines given below the table for suction-side or pressure-side firing. This information is based on gas-rich firing, using part of the air stream as secondary air to complete combustion.

Very high degrees of recirculation with resulting low oxygen content may reduce attainable maximum capacities to those illustrated in the table.

Air velocities must be maintained in the range of 500-1500 SFPM, and return air temperature across the burner in recirculating systems must not exceed 500°F (260°C).

To determine velocity, make a trial burner selection, calculate displacement at .20 ft² per lineal foot of burner, subtract from duct cross-sectional area and divide into total air flow.

Recirculated air systems must include at least 25 SCFM of fresh air for each 100,000 Btu/hr of maximum capacity.

To select a mixer and burner combination, determine your available air differential pressure at the mixer inlet and read downward under the appropriate column to your desired maximum capacity. Read across that line to the resulting minimum capacity available.

When you are satisfied with the indicated maximum and minimum firing rates, read across to the appropriate mixer designation. On that same line, you will find six possible burner lengths.

Choose the one that will best fit your space requirements. Arrange a burner assembly using that total footage, then specify it with the drilling indicated at the top of that column.

For special application requirements, contact your Maxon representative for possible “customized” burner drillings based on total discharge area per lineal foot.

Capacity/Selection Data

Series "LG" Mixing Tubes and MULTI-RATIO™ Mixers with Style A or B LINOFLAME® Burners

LINOFLAME® Burners in still air applications

| Maximum Capacity (1000's Btu/hr) at differential combustion air pressures (measured at mixer inlet) | | | | Minimum Capacity 1000's Btu/hr | Mixer Designation MR=MULTI-RATIO® LG=LG Mixing Tube | Style "A" or "B" LINOFLAME® Burner assembly length (feet of indicated type and drillings) | | | | | | |
|--|--------|-------|-------|---|---|--|-----------|-----------|-----------|-----------|--------------|-----|
| 15 osi | 11 osi | 7 osi | 5 osi | | | B-36-4242 | B-96-5050 | B-96-4444 | B-96-3643 | A-72-1733 | A-72-C-3 [1] | |
| 114 | 95 | 83 | 68 | 22 | MR LG -100-28 | 1 | .75 | .5 | --- | --- | --- | |
| 160 | 118 | 100 | 86 | 27 | MR LG -100-31 | 1.5 | 1 | .75 | .5 | --- | --- | |
| 190 | 160 | 138 | 115 | 29 | MR LG -125-37 | 2.25 | 1.5 | 1 | .75 | .5 | --- | |
| 250 | 210 | 180 | 150 | 40 | MR LG -125-41 | 3 | 2 | 1.5 | 1 | .75 | --- | |
| 320 | 270 | 212 | 189 | 57 | MR LG -125-46 | 4 | 2.5 | 2 | 1.25 | 1 | .5 | |
| 410 | 345 | 284 | 240 | 71 | MR LG -150-56 | 5 | 3.5 | 2.5 | 1.75 | 1.25 | .75 | |
| 510 | 395 | 350 | 295 | 92 | MR LG -150-63 | 6.5 | 4.5 | 3 | 2.25 | 1.5 | 1 | |
| 620 | 525 | 405 | 360 | 124 | MR LG -200-70 | 8 | 5.5 | 4 | 2.75 | 2 | 1.25 | |
| 730 | 620 | 490 | 427 | 136 | MR LG -200-73 | 9 | 6.25 | 4.5 | 3 | 2.25 | 1.5 | |
| 890 | 750 | 600 | 525 | 145 | MR LG -200-80 | 11 | 7.75 | 5.5 | 3.75 | 2.5 | 1.75 | |
| 1060 | 890 | 760 | 630 | 163 | MR LG -300-98 | 14 | 9.5 | 6.75 | 5 | 3.5 | 2 | |
| 1280 | 1080 | 865 | 750 | 182 | MR LG -300-106 | 16 | 11 | 7.25 | 5.5 | 4 | 2.5 | |
| 1550 | 1310 | 1110 | 900 | 250 | MR LG -300-116 | 18 | 12.5 | 8.5 | 6 | 5 | 3 | |
| 1900 | 1620 | 1270 | 1080 | 340 | MR LG -400-124 | 22 | 15 | 11 | 7.5 | 5.5 | 3.5 | |
| 2300 | 1960 | 1610 | 1330 | 420 | MR LG -400-136 | 26 | 18 | 12 | 9 | 6.5 | 4.5 | |
| 2780 | 2180 | 1910 | 1585 | 510 | MR | -400-142 | 32 | 23 | 16 | 11 | 8 | 5.5 |
| 2850 | 2410 | 1910 | 1550 | 510 | LG | | | | | | | |
| 3300 | 2800 | 2400 | 1930 | 590 | MR | -500-157 | 40 | 28 | 20 | 14 | 10 | 6.5 |
| 3500 | 3040 | 2400 | 1930 | 590 | LG | | | | | | | |
| 3800 | 3250 | 2620 | 2160 | 660 | MR | -500-166 | 45 | 32 | 22 | 17 | 12 | 7.5 |
| 4400 | 3660 | 2940 | 2400 | 660 | LG | | | | | | | |

[1] Maximum capacity not to exceed 525,000 Btu/hr per lineal foot with these drillings

Suction-side applications (up to -1.0" wc suction): capacities will increase approximately 30% over still air capacities listed above

Pressure side applications (up to +2.0" back pressure): capacities will increase approximately 20% over still air capacities listed above

Capacity/Selection Data

Series “LG” Mixing Tubes and MULTI-RATIO™ Mixers with “VF” LINOFLAME® Burners

Capacities for Type “VF” LINOFLAME® Burners used with these mixers are shown in the table below. These capacities are based on natural gas firing and a minimum differential mixture pressure of 0.10" wc.

Increased minimums may be necessary in air stream.

Maximum capacities are a function of the available air differential pressure and are shown for four different ranges of air differential pressure. Consider pressure drops carefully when sizing blower.

To select equipment, determine required heat release and your available air differential pressure. Read downward in the appropriate column to the desired maximum capacity. Opposite that data you will find the recommended size of mixing device and a summary of burner footage required for either “VFL” or “VFH” LINOFLAME® Burners.

| Maximum Capacity (1000's Btu/hr) at differential combustion air pressures (measured at mixer inlet) | | | | Minimum Capacity 1000's Btu/hr | Mixer Designation MR=MULTI-RATIO® LG=LG Mixing Tube | Lineal feet of VF LINOFLAME® Burner | |
|---|--------|-------|-------|--------------------------------------|---|-------------------------------------|----------|
| | | | | | | Type VFL | Type VFH |
| 15 osi | 11 osi | 7 osi | 5 osi | | | | |
| 145 | 130 | 105 | 90 | 15 | MR LG -125-31 | .5 | .25 |
| 285 | 255 | 200 | 170 | 30 | MR LG -125-41 | 1 | .5 |
| 585 | 525 | 430 | 335 | 60 | MR LG -150-63 | 2 | 1 |
| 855 | 760 | 600 | 510 | 90 | MR LG -200-80 | 3 | 1.5 |
| 1160 | 1040 | 820 | 720 | 120 | MR LG -300-84 | 4 | 2 |
| 1450 | 1300 | 1050 | 910 | 150 | MR LG -300-98 | 5 | 2.5 |
| 1720 | 1590 | 1320 | 1180 | 180 | MR LG -300-106 | 6 | 3 |
| 2050 | 1830 | 1500 | 1300 | 210 | MR LG -300-116 | 7 | 3.5 |
| 2300 | 2100 | 1750 | 1500 | 240 | | 8 | 4 |
| 2900 | 2650 | 2200 | 1950 | 300 | MR LG -400-136 | 10 | 5 |
| 3400 | 3050 | 2550 | 2250 | 360 | MR LG -400-142 | 12 | 6 |
| 3950 | 3600 | 3050 | 2650 | 420 | MR LG -500-157 | 14 | 7 |
| 4400 | 3900 | 3400 | 3000 | 480 | MR | -500-157 | 16 |
| 4500 | 4100 | 3550 | 3100 | 480 | LG | | |
| 4650 | 4200 | 3700 | 3250 | 540 | MR | -500-166 | 18 |
| 5200 | 4850 | 4000 | 3500 | 540 | LG | | |
| 5700 | 5300 | 4400 | 3850 | 600 | LG | -500-166 | 20 |

Capacity/Selection Data

Series “LG” Mixing Tubes and MULTI-RATIO™ Mixers with INFRAWAVE® Burners

Capacities and required burner footage for INFRAWAVE® Burner systems fed by “LG” Mixing Tubes or MULTI-RATIO™ Mixers are summarized in the table below. All capacity information given is **for natural gas firing**.

Minimum is based on approximately 0.25" wc differential mixture pressure in the burner. The maximum capacities are obtainable when the indicated air differential pressure is available at “LG” tube or MULTI-RATIO™ Mixer inlet.

Consider pressure drops carefully when sizing blower, so that the required differential is available.

Once the mixing device has been sized for the desired capacity, check the right side of the table for required burner footage of single grid or double grid INFRAWAVE® Burners.

| Maximum Capacity (1000's Btu/hr) at differential combustion air pressures (measured at mixer inlet) | | | Minimum Capacity 1000's Btu/hr | Mixer Designation MR = MULTI-RATIO® LG = LG Mixing Tube | Lineal feet of INFRAWAVE® Burner | |
|---|-------|-------|--------------------------------------|---|----------------------------------|------------------------|
| | | | | | Type SG Single Grid | Type DG Double Grid |
| 11 osi | 7 osi | 5 osi | | | | |
| 120 | 100 | 75 | 15 | MR LG -125-31 | 2 | 1 |
| 240 | 200 | 150 | 30 | MR LG -125-41 | 4 | 2 |
| 480 | 400 | 300 | 60 | MR LG -150-63 | 8 | 4 |
| 720 | 600 | 450 | 90 | MR LG -300-78 | 12 | 6 |
| 960 | 800 | 600 | 120 | MR LG -300-84 | 16 | 8 |
| 1200 | 1000 | 750 | 150 | MR LG -300-98 | 20 | 10 |
| 1440 | 1200 | 900 | 180 | MR LG -300-106 | 24 | 12 |
| 1680 | 1400 | 1050 | 210 | MR LG -300-116 | 28 | 14 |
| 1920 | 1600 | 1200 | 240 | | 32 | 16 |
| 2400 | 2000 | 1500 | 300 | MR LG -400-136 | 40 | 20 |
| 2880 | 2400 | 1800 | 360 | MR LG -400-142 | 48 | 24 |
| 3360 | 2800 | 2100 | 420 | MR | 56 | 28 |
| 3840 | 3200 | 2400 | 480 | LG -500-157 | | |
| 4320 | 3600 | 2700 | 540 | MR | 72 | 36 |
| 4800 | 4000 | 3000 | 600 | LG -500-166 | | |
| | | | | | 80 | 40 |

Capacity/Selection Data

Series "HG" Mixing Tubes

General

The capacity of a Series "HG" Mixing Tube is determined by its physical size, air pressures, the size, type and number of burner nozzles fired, and by the field conditions under which it operates.

Choose from the following capacity/selection tables for the combination of mixing tube, burners, and operating conditions for your application.

Slight variations in combustion chamber pressure, draft conditions or the availability of secondary air can affect capacity ratings and performance.

Gas Orifice Drillings

Each Series "HG" Mixing Tube will have a specific number and size of gas orifices drilled in the venturi throat of the mixer. The size of the gas orifice is stamped into the metal casting on the outside of each mixing tube body.

Refer to the table below for the suggested drillings.

Nomenclature

All Series "HG" Mixing Tubes are identified by pipe size.

Example: 3" Series "HG" Mixing Tube
(3" is the inlet air pipe connection and the mixture discharge pipe size)

Gas Orifice Drillings for Series "HG" Mixing Tubes

NOTE: Drillings below based on 2 PSIG inlet gas pressure (measured at "HG" Mixing Tube gas inlet)

| For fully premixed systems | | | | Size of "HG" Mixing Tube (number of gas orifices in parentheses) | For partially premixed systems | | | |
|--|---|--------------------|-------------------|---|--|---|--------------------|-------------------|
| Combustion Air Pressure measured at air inlet of "HG" Mixing Tube | Gas orifice drillings for Series "SN" and STICKTITE Nozzles, Style A, B & VF LINOFLAME, INFRAWAVE and LO-NOX Burners | | | | Combustion Air Pressure measured at air inlet of "HG" Mixing Tube | Gas orifice drillings for Series "66" AIRFLO and COMBUSTIFUME Burners | | |
| | for Natural Gas | for Propane Gas | for Butane Gas | | | for Natural Gas | for Propane Gas | for Butane Gas |
| 8 osi | 11/64" | 9/64" | #29 | 2" HG (4) | 6 & 8 osi | 21/64" | I | F |
| 12 osi | 7/32" | #16 | #18 | | | 21/64" | I | F |
| 16 osi | 15/64" | #11 | #14 | | | 21/64" | I | F |
| 8 osi | 3/16" | #23 | #27 | 3" HG (6) | | 7/16" | T | R |
| 12 osi | 13/64" | #18 | #22 | | | 29/64" | 3/8" | T |
| 16 osi | 7/32" | #15 | #18 | | | 35/64" | 29/64" | 7/16" |
| 8 osi | A | #12 | #15 | 4" HG (8) | | | | |
| 12 osi | F | #3 | #8 | | | | | |
| 16 osi | J | #1 | 3/8" | | | | | |
| 8 osi | F | #4 | #8 | 6" HG (12) | | | | |
| 12 osi | K | #1 | 7/32" | | | | | |
| 16 osi | N | D | A | | | | | |
| 8 osi | S | 9/32" | 17/64" | 8" HG (12) | | | | |
| 12 osi | 13/32" | U | 11/32" | | | | | |
| 16 osi | 15/32" | U | 11/32" | | | | | |

Capacity/Selection Data

Series "HG" Mixing Tubes with STICKTITE™ Burner Nozzles

Maximum and minimum capacities that may be expected from "HG" Mixing Tubes when firing through a single STICKTITE™ Nozzle of the indicated size are shown in the table below.

The combustion air blower must be selected to allow for whatever drop exists between it and the "HG" Mixing Tube inlet. All figures below are based on

negligible pressure drop between the "HG" Mixing Tube outlet and STICKTITE™ Nozzle, and on 100% premix firing into a chamber with slight positive pressure.

Multiple nozzles can be used, but the actual capacities will depend upon the type, size and quantity of nozzles selected for your application.

Single STICKTITE™ Nozzle capacities at various air pressures

| "HG" Mixing Tube size | STICKTITE™ Nozzle size | Minimum Capacity 1000's Btu/hr | Maximum Capacity in 1000's Btu/hr at indicated differential air pressures (measured at mixing tube inlet) | | | | | |
|-----------------------|------------------------|-----------------------------------|--|-------|-------|--------|--------|--------|
| | | | 4 osi | 6 osi | 8 osi | 10 osi | 12 osi | 14 osi |
| 2" | HD-2"-24 | 160 | 850 | 1000 | 1150 | 1280 | 1400 | 1480 |
| 3" | HD-3"-30 | 240 | 1150 | 1400 | 1550 | 1700 | 1850 | 2000 |
| 4" | HD-4"-41 | 450 | 2200 | 2600 | 3000 | 3300 | 3600 | 3900 |
| 6" | HD-6"-60 | 1000 | 5000 | 6000 | 7000 | 7900 | 8500 | 9200 |
| 8" | HD-8"-88 | 2400 | 11000 | 13500 | 15000 | 16500 | 18000 | 19500 |

Series "HG" Mixing Tubes with Series "SN" Sealed Nozzle Burners

Capacities and nozzle sizing information are provided below for systems utilizing "HG" Mixing Tubes with Sealed Nozzles. The right side of the table deals with capacities, and is based on natural gas firing against balanced or slightly negative combustion chamber pressures.

Maximum capacities are cataloged for three different air differential pressures (measured at inlet to

mixer). Be sure to allow for piping losses from combustion air blower.

Back pressures of +0.15" wc will reduce capacities by 5%; back pressures of 0.25" wc by 15%.

Multiple nozzles can be used, but the actual capacities will depend upon the type, size and quantity of nozzles selected for your application.

Single Series "SN" Sealed Nozzle capacities at various combustion air pressures

| "HG" Mixing Tube Size | Series "SN" Sealed Nozzle Burner | Minimum Capacity 1000's Btu/hr | Maximum Capacity in 1000's Btu/hr at indicated differential air pressure (measured at mixing tube inlet) | | |
|-----------------------|----------------------------------|-----------------------------------|---|-------|--------|
| | | | 4 osi | 6 osi | 10 osi |
| 2" | SN-2"-20 | 160 | 690 | 840 | 1100 |
| 3" | SN- 2-1/2" -27 | 260 | 1300 | 1500 | 1950 |
| 4" | SN-4"-42 | 560 | 2200 | 2700 | 3350 |
| 6" | SN-6"-60 | 1000 | 4350 | 5250 | 6700 |

Capacity/Selection Data

Series "HG" Mixing Tubes with Style A or B LINOFLAME® Burners

Sizing and capacity information for systems using "HG" Mixing Tubes and Style A or B LINOFLAME® Burners is shown in Table 1 below and Table 2 on the following page.

If burners will be firing in still air, use Table 1 (below).

Table 1 is based on balanced pressures in the combustion chamber and on 100% premixture (on-ratio firing).

Both tables apply for natural gas, propane and butane gas firing, with fuel supply being regulated to the range of 2 PSIG.

To select a mixer and burner combination, determine required heat release and your available air differential pressure at mixer inlet. Read downward

under the appropriate column to your desired maximum capacity, then across that line to the resulting minimum capacity available.

When you are satisfied with the indicated maximum and minimum firing rates, read across to the appropriate mixer designation. On that same line, you will find five possible burner lengths.

Choose the one that will best fit your space requirements. Arrange a burner assembly using that total footage, then specify it with the drilling indicated at the top of that column.

For special application requirements, contact your Maxon representative for possible "customized" burner drillings based on total discharge area per lineal foot.

Table 1: LINOFLAME® Burners in still air applications

| Maximum Capacity (1000's Btu/hr) at indicated differential combustion air pressures (measured at mixer inlet) | | Minimum Capacity in 1000's Btu/hr | "HG" Mixing Tube Size | Lineal feet of LINOFLAME® Burner (feet of indicated type and drillings) | | | | |
|---|-------|-----------------------------------|-----------------------|--|-----------|-----------|-----------|-----------|
| | | | | B-36-4242 | B-96-5050 | B-96-4444 | B-96-3643 | A-72-1733 |
| 8 osi | 6 osi | | | | | | | |
| 865 | 755 | 140 | 2" HG | 11 | 7 | 5 | 3.75 | 2.5 |
| 1600 | 1360 | 230 | 3" HG | 16 | 11 | 8 | 6 | 4 |
| 2730 | 2410 | 395 | 4" HG | 30 | 20 | 14.5 | 10.5 | 7 |
| 5450 | 4750 | 850 | 6" HG | 65 | 42 | 30 | 22 | 15 |
| 8200 | 7150 | 1260 | 8" HG | 97 | 63 | 45 | 33 | 22 |

Capacity/Selection Data

Series “HG” Mixing Tubes with Style A or B LINOFLAME® Burners

If burners are to be used to heat an air stream, see Table 2 (below).

Table 2 is based on gas-rich firing, using part of the air stream as secondary air to complete combustion.

Very high recirculation may reduce attainable maximum capacities to those illustrated in Table 1 (page 3213).

Air velocities must be maintained in the range of 500-1500 SFPM, and return air temperature across the burner in recirculating systems must not exceed 500°F (260°C).

To determine velocity, make a trial burner selection, calculate displacement at .20 ft² per lineal foot of burner, subtract from duct cross-sectional area and divide into total air flow.

Recirculated air systems must include at least 25 SCFM of fresh air for each 100,000 Btu/hr of maximum capacity.

Table 2: LINOFLAME® Burners for air heating applications

| Assuming uniform velocity from 500 to 1500 sfpm (and a return air temperature not to exceed 500°F (260°C), if system is recirculating) | | | | | | | | | | | |
|--|-------|--|-------|--------------------------------------|--|---------------------|--|-----------|-----------|-----------|-----------|
| Maximum Capacity in 1000's Btu/hr at differential combustion air pressures (measured at mixer inlet) | | | | Minimum Capacity in 1000's Btu/hr | Minimum SCFM fresh air required to secure maximum capacities [1] | HG Mixing Tube Size | Lineal feet of LINOFLAME® Burner (feet of indicated type and drillings) | | | | |
| On pressure side of fan (back pressures up to +2" wc) | | On suction side of fan (suctions ranging to -1" wc) | | | | | B-36-4242 | B-96-5050 | B-96-4444 | B-96-3643 | A-72-1733 |
| 6 osi | 4 osi | 6 osi | 4 osi | | | | | | | | |
| 925 | 770 | 1000 | 840 | 170 | 250-285 | 2" HG | 7.5 | 6.5 | 5 | 3.75 | 2.5 |
| 1650 | 1430 | 1800 | 1550 | 290 | 450-500 | 3" HG | 12 | 10 | 8 | 6 | 4 |
| 2900 | 2420 | 3200 | 2650 | 630 | 800-870 | 4" HG | 21 | 19 | 14.5 | 10.5 | 7 |
| 5700 | 4750 | 6250 | 5200 | 880 | 1500-1750 | 6" HG | 45 | 38 | 30 | 22 | 15 |
| 8550 | 7150 | 9350 | 7800 | 1350 | 2250-2620 | 8" HG | 67 | 57 | 45 | 33 | 22 |

[1] The smaller figure indicates SCFM fresh air which must be introduced into the system for the maximum burner capacity shown in the 4 osi column, and the larger figure the amount required for the 6 osi capacity. Amounts for other capacities may be interpolated.

Capacity/Selection Data

Series “HG” Mixing Tubes with “VF” LINOFLAME® Burners

Capacities of Type “VF” LINOFLAME® Burner assemblies supplied by “HG” Mixing Tubes are shown in the table below.

Minimum capacity is based on 0.10" wc differential mixture pressure in the “VF” burner. Air stream velocities higher than 1500 SFPM and larger burner assemblies may require increased minimums.

Maximum capacities are shown for three differential combustion air pressures.

To size a system, determine required heat release and available air differential pressure at the mixer inlet. Read downward in the appropriate column to the desired maximum capacity. Opposite that figure you will find the required “HG” Mixing Tube size, expected minimum capacity, and the required burner footage.

| "HG" Mixing Tube Size | Minimum Capacity 1000's Btu/hr | Maximum Capacity (1000's Btu/hr) at differential air pressures (measured at mixer inlet) | | | Lineal feet of "VF" LINOFLAME® Burner | |
|-----------------------|-----------------------------------|--|-------|--------|---------------------------------------|-----------------------|
| | | 4 osi | 6 osi | 10 osi | VFL LINOFLAME® Burner | VFH LINOFLAME® Burner |
| | | | | | | |
| 2" | 60 | --- | 600 | --- | 2 | 1 |
| | 120 | 850 | 1000 | 1200 | 4 | 2 |
| 3" | 120 | --- | 1200 | --- | 4 | 2 |
| | 180 | 1400 | 1650 | 1800 | 6 | 3 |
| | 240 | 1750 | 2100 | 2400 | 8 | 4 |
| | 300 | 2050 | 2400 | --- | 10 | 5 |
| 4" | 240 | --- | 2400 | --- | 8 | 4 |
| | 300 | --- | --- | 3000 | 10 | 5 |
| | 360 | 2600 | 3250 | 3600 | 12 | 6 |
| | 420 | 2950 | 3800 | 4200 | 14 | 7 |
| | 480 | 3250 | 4000 | 4800 | 16 | 8 |
| | 540 | 3400 | 4400 | --- | 18 | 9 |
| 6" | 480 | --- | 4800 | --- | 16 | 8 |
| | 540 | --- | --- | 5400 | 18 | 9 |
| | 600 | 4500 | 5600 | 6000 | 20 | 10 |
| | 660 | 4900 | 6100 | 6600 | 22 | 11 |
| | 720 | 5300 | 6600 | 7200 | 24 | 12 |
| | 840 | 6100 | 7500 | 8400 | 28 | 14 |
| | 960 | 6800 | 8400 | 9600 | 32 | 16 |
| | 1080 | 7600 | 9400 | --- | 36 | 18 |
| 1200 | 8100 | --- | --- | 40 | 20 | |
| 8" | 840 | --- | 8400 | --- | 28 | 14 |
| | 1080 | --- | --- | 10800 | --- | 18 |
| | 1200 | --- | 10000 | 1200 | --- | 20 |
| | 1320 | 9600 | 11900 | 13200 | --- | 22 |
| | 1440 | 10400 | 12900 | 14400 | --- | 24 |
| | 1560 | 10900 | 13500 | 15600 | --- | 26 |
| | 1680 | 11400 | 14300 | 16800 | --- | 28 |
| | 1800 | 12000 | 15100 | 18000 | --- | 30 |

Capacity/Selection Data

Series "HG" Mixing Tubes with INFRAWAVE® Burners

Capacity and burner footage suggestions for systems utilizing Series "HG" Mixing Tubes and INFRAWAVE® Burners are summarized in the table below.

Minimum capacities shown are based on approximately 0.25" wc differential mixture pressure in the burner. The three maximums shown are based on the indicated combustion air differential pressure at the inlet to the "HG" Mixing Tube.

To size a system, determine required heat release and available air differential pressure, then read downward in the appropriate column to the desired capacity. Opposite that figure, you will find the required "HG" Mixing Tube size and burner footage recommendations.

| "HG" Mixing Tube Size | Minimum Capacity 1000's Btu/hr | Maximum Capacity (1000's Btu/hr) at differential air pressures (measured at mixer inlet) | | | Lineal feet of INFRAWAVE® Burner | |
|-----------------------------|--------------------------------------|--|-------|--------|----------------------------------|--------------------------|
| | | 4 osi | 6 osi | 10 osi | Type "SG" Single Grid | Type "DG" Double Grid |
| | | | | | | |
| 2" | 120 | 720 | 865 | 960 | 16 | 8 |
| 3" | 180 | 1080 | 1295 | 1440 | 24 | 12 |
| | 240 | 1440 | 1730 | 1920 | 32 | 16 |
| | 300 | 1800 | 2160 | 2400 | 40 | 20 |
| 4" | 360 | 2160 | 2580 | 2880 | 48 | 24 |
| | 420 | 2520 | 3025 | 3360 | 56 | 28 |
| | 480 | 2880 | 3450 | 3840 | 64 | 32 |
| | 540 | 3240 | 3890 | 4320 | 72 | 36 |
| 6" | 600 | 3600 | 4320 | 4800 | 80 | 40 |
| | 660 | 3960 | 4750 | 5280 | 88 | 44 |
| | 720 | 4320 | 5185 | 5760 | 96 | 48 |
| | 840 | 5040 | 6050 | 6720 | 112 | 56 |
| | 960 | 5760 | 6915 | 7680 | 128 | 64 |
| | 1080 | 6480 | 7776 | 8640 | 144 | 72 |
| | 1200 | 7200 | 8640 | 9600 | 160 | 80 |

Capacity/Selection Data

Series “HG” Mixing Tubes with Series “66” AL5 AIRFLO® Burners

For firing in recirculated air streams, see table at right for the capacities available from various lengths of AL5 AIRFLO® Burner assemblies when used with “HG” Mixing Tubes. Data is based on 2 PSIG natural gas supply pressure at the mixer and 2600-3500 SFPM air stream velocity across the burner.

Turndown ratios of 15:1 are possible using natural gas. Uneven and/or turbulent air flows, or the use of propane, will give higher minimums and reduce turndown.

The capacities shown are based on a minimum of 80 SCFM of fresh air being added for each 100,000 Btu/hr of heat input. Lower fresh air volumes, the presence of exceptionally high moisture, or other combustion-retarding or inert components may require special consideration.

Differential air pressure of 5.2" wc is required for all of these combinations and is measured between burner inlet and duct/chamber static pressure.

Multiple “HG” Mixing Tubes may be used with a single MICRO-RATIO® Valve, but remember to size blower for the combined SCFM required and allow for piping losses.

Recirculated air with Series “66” AL5 AIRFLO® Burner

| Capacity 1000's Btu/hr | "AL5" Footage | "HG" Size | Primary Combustion Air required [1] through "HG" Mixing Tube (SCFM) |
|------------------------------|------------------|--------------|---|
| 325 | 1/2 | 2" | 18 |
| 650 | 1 | | 37 |
| 975 | 1-1/2 | 3" | 55 |
| 1300 | 2 | | 73 |
| 1625 | 2-1/2 | | 92 |
| 1950 | 3 | | 110 |
| 2275 | 3-1/2 | | 128 |
| 2600 | 4 | 4" | 147 |
| 2925 | 4-1/2 | | 165 |
| 3250 | 5 | | 183 |
| 3900 | 6 | | 220 |
| 4550 | 7 | | 256 |
| 5200 | 8 | 6" | 293 |
| 5850 | 9 | | 330 |
| 6500 | 10 | | 367 |
| 7150 | 11 | | 403 |
| 7800 | 12 | | 440 |
| 8450 | 13 | 8" | 477 |
| 9100 | 14 | | 513 |
| 9750 | 15 | | 550 |
| 10400 | 16 | | 587 |
| 11050 | 17 | | 623 |
| 11700 | 18 | | 660 |
| 12350 | 19 | | 697 |
| 13000 | 20 | | 733 |
| 13650 | 21 | | 770 |
| 14300 | 22 | | 807 |
| 14950 | 23 | 844 | |
| 15600 | 24 | 880 | |
| 16250 | 25 | 917 | |
| 16900 | 26 | 954 | |
| 17550 | 27 | 990 | |
| 18200 | 28 | 1027 | |

[1] Approximately 1/3 of total required at maximum capacity. Balance from air stream.

Capacity/Selection Data

Series "HG" Mixing Tubes with Types 5CF-5 & 4CF-5 COMBUSTIFUME® Burners

Effluent air streams with oxygen levels of 12 to 16% may be heated with COMBUSTIFUME® Burners supplied with a partial premixture of air and natural or propane gas.

A complete burner system to handle these difficult applications would include a COMBUSTIFUME® Burner assembly, Series "HG" Mixing Tube, MICRO-RATIO® Control Valve and a combustion air blower. Your Maxon representative can help you select from the broad range of options available.

Table 1: Design Parameters

| Percent of oxygen in effluent: | 12 to 12.9 | 13 to 13.9 | 14 to 15.9 |
|---|------------|------------|------------|
| Required increase in gross heat release (Btu/hr) | 10% | 7.5% | 5% |
| Maximum heat release per lineal foot of burner (Btu/hr) (COMBUSTIFUME® Burner with 5 rows of #36 drilled holes = 120 holes per foot) | 700,000 | | 1,000,000 |
| Maximum footage of COMBUSTIFUME® Burner per inlet feed | 5 | 6 | |
| Minimum heat release (Btu/hr) per lineal foot of burner | 75,000 | | |
| Combustion air required through Series "HG" Mixing Tube (SCFM per lineal foot of burner) | 47 | 41 | 34 |
| Differential air pressure required (inches water column) as measured between burner inlet and duct/chamber static pressure | 8 | 6.4 | 5.5 |

General Selection Procedure:

1. Determine available oxygen level in air stream to be heated.
2. Enter Table 1 under column with specific oxygen level for parameters of your application. Available oxygen level dictates primary air and extra heat requirements for additional primary air flows.
3. Calculate gross heat requirement.
4. Determine burner footage and inlet feed requirements.
5. Select "HG" Mixing Tube size from Table 2 based upon the volume of air required.

Example:

- Required heat release of 7,000,000 Btu/hr
- For system measured with 13.5% oxygen in air stream

From Table 1 (13 to 13.9%, middle column)

A. Gross heat required

$$7,000,000 \times 1.075 = 7,525,000 \text{ Btu/hr}$$

B. $\frac{7,525,000 \text{ Btu}}{700,000 \text{ Btu/ft}} = 10.75 \text{ ft.} = 11 \text{ ft. of burner}$

C. $\frac{11 \text{ ft}}{6 \text{ ft/inlet}} = 2 \text{ inlets}$

Table 2: Series "HG" Mixing Tube Selection

| "HG" Mixing Tube Size | SCFM combustion air volume required at maximum through "HG" Mixing Tube |
|-----------------------|---|
| 2" | 0 to 190 |
| 3" | 90 to 260 |
| 4" | 175 to 500 |
| 6" | 400 to 1167 |
| 8" | 880 to 2500 |

D. 11 ft. x 41 SCFM/ft = 451 SCFM primary air with differential pressure = 6.4" wc

From Table 2 (301 - 520 SCFM)

E. Select 6" HG Mixing Tube with 12 each 29/64 gas orifices per catalog page 3211

F. Select MICRO-RATIO® Control Valve
– for 451 SCFM air = (27060 SCFH)
– for 7525 SCFH natural gas

Capacity/Selection Data

Series "HG" Mixing Tubes with LO-NOX™ Burners

Fresh and recirculated air streams may be heated with LO-NOX™ Burners supplied with a full premixture of air and natural or propane gas.

A complete burner system to handle these difficult applications would include a LO-NOX™ Burner assembly, Series "HG" Mixing Tube, MICRO-RATIO® Control Valve and a combustion air blower. Your Maxon representative can help you select from the broad range of options available.

General Selection Procedure:

1. Calculate gross heat requirement.
2. Determine burner footage and inlet feed requirements.
3. Enter Table 1 under column with your capacity needs for parameters of your application.
4. Select "HG" Mixing Tube size from Table 2 based upon the volume of air required.

Example:

- Required heat release of 7,000,000 Btu/hr

From Table 1

A. Gross heat required: 7,000,000 Btu/hr

B.
$$\frac{7,000,000 \text{ Btu}}{500,000 \text{ Btu/ft}} = 14 \text{ ft}$$

C. 14 ft x 100 SCFM/ft = 1400 SCFM primary air with differential mixture pressure = 14" wc

From Table 2

D. Since single 8" HG Mixing Tube is rated for a maximum of 2500 SCFM, this requires (1) 8" HG Mixing Tube with gas orifices per catalog page 3211

E. Select MICRO-RATIO® Control Valve
 – For 1400 SCFM air = (84,000 SCFH)
 – For 7000 SCFH natural gas

Table 1: Design Parameters

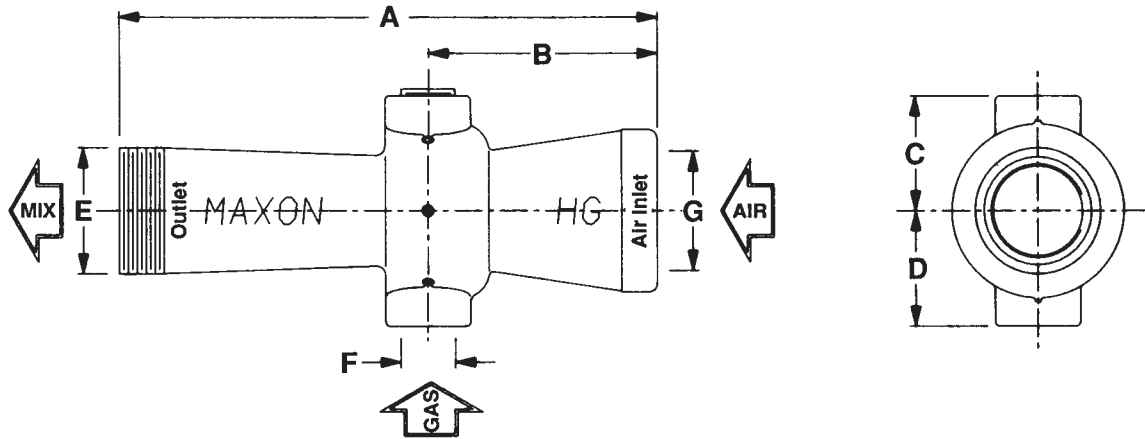
| Maximum capacity heat release Btu/hr per lineal foot of LO-NOX™ Burner | Combustion air required through HG Mixing Tube (SCFM per lineal foot of LO-NOX™ Burner) | Differential mixture pressure (inches w.c.) as measured between burner inlet and duct/chamber static pressure |
|---|---|--|
| 200,000 | 40 | 2.5 |
| 300,000 | 60 | 3.5 |
| 400,000 | 80 | 6.5 |
| 500,000 | 100 | 10 |
| 550,000 | 120 | 11 |

Table 2: Series "HG" Mixing Tube Selection

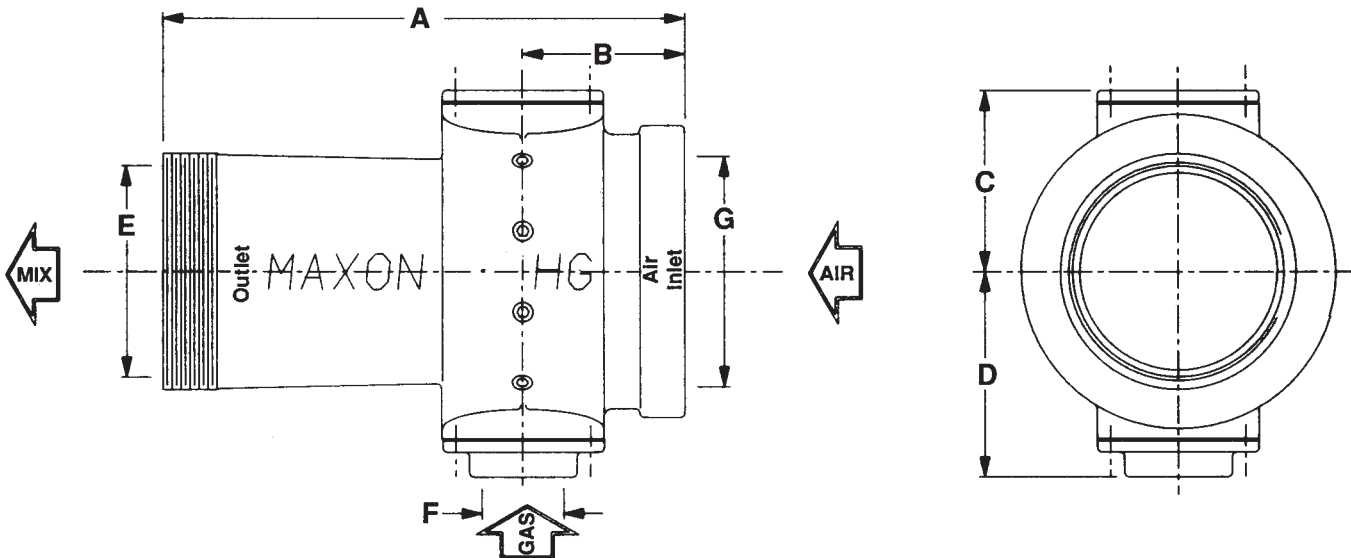
| HG Mixing Tube Size | SCFM combustion air volume required at maximum through HG Mixing Tube |
|------------------------|--|
| 2" | 0 to 190 |
| 3" | 90 to 260 |
| 4" | 175 to 500 |
| 6" | 400 to 1167 |
| 8" | 880 to 2500 |

Dimensions (in inches) Series "HG" Mixing Tubes

2", 3", 4" Sizes



6", 8" Sizes

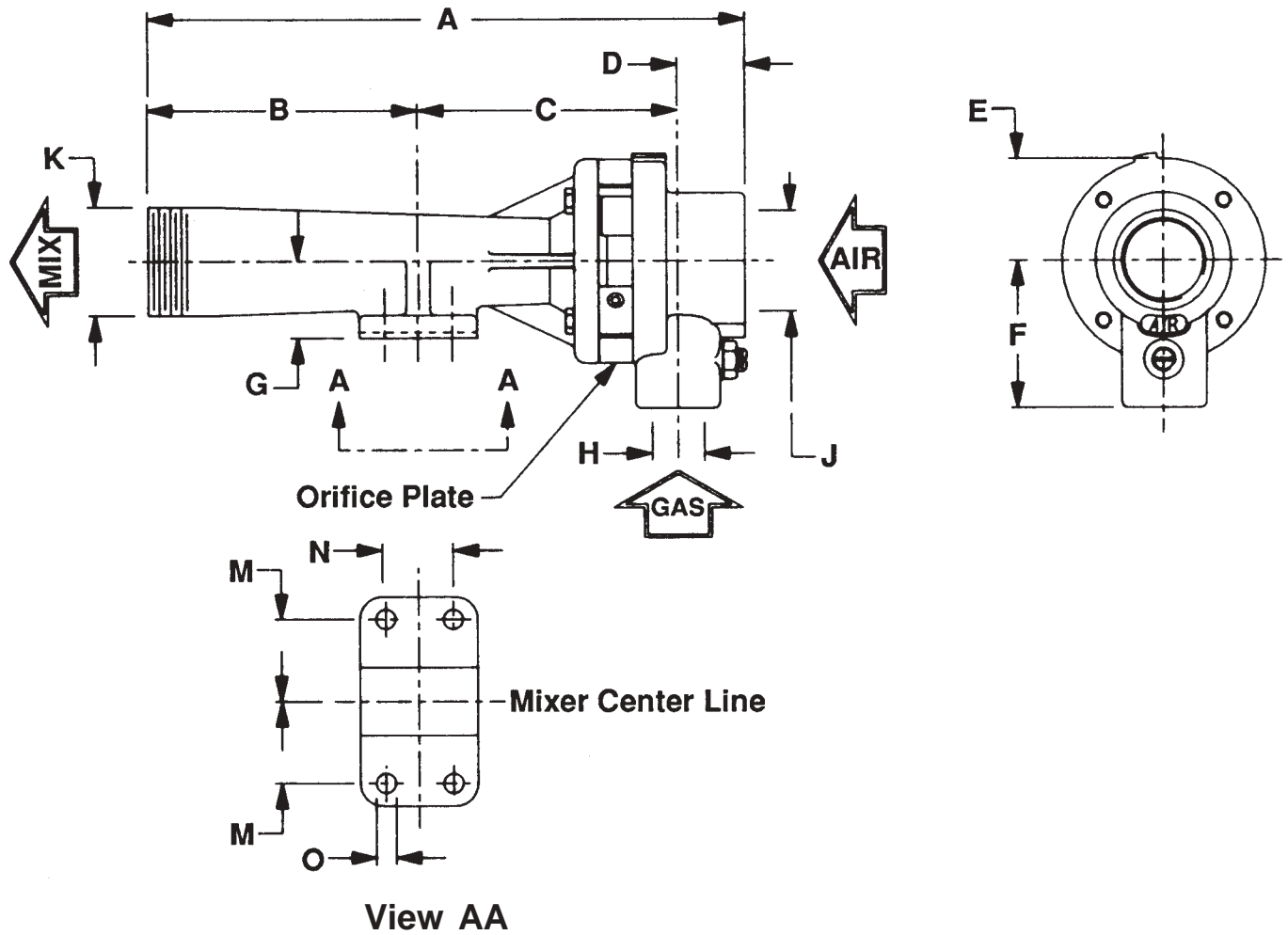


| Size | A | B | C | D | E outlet | F gas inlet | G air inlet |
|------|------|-------|------|------|----------|-------------|-------------|
| 2" | 10 | 4.25 | 2.75 | 2.5 | 2" | 1" | 2" |
| 3" | 15 | 6.38 | 3.88 | 3.19 | 3" | 1-1/4" | 3" |
| 4" | 20 | 11.19 | 3.44 | 3.81 | 4" | 1-1/2" [1] | 4" |
| 6" | 14.5 | 4.5 | 5 | 5.63 | 6" | 2" [1] | 6" |
| 8" | 19.5 | 4.63 | 5.25 | 5.88 | 8" | 2-1/2" [1] | 8" [1] |

[1] Connection is threaded flange. All others threaded body.

Pipe threads on this page conform to NPT (ANSI Standard B2.1)

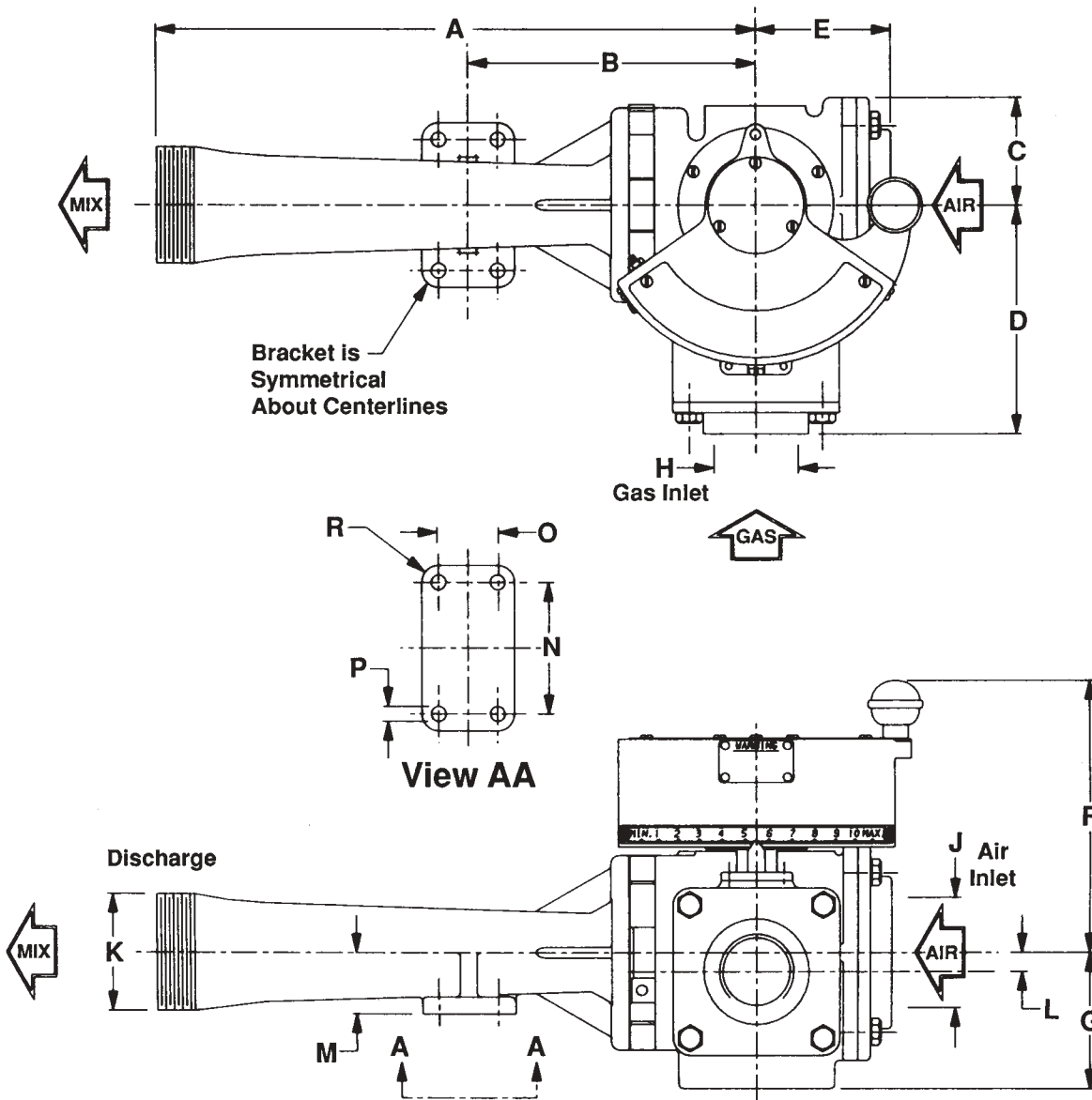
Dimensions (in inches) Series "LG" Mixing Tubes



| LG Mixing Tube | A | B | C | D | E | F | G | H gas inlet | J air inlet | K outlet | M | N | O | R |
|----------------|-------|------|------|------|------|------|------|----------------|----------------|-------------|------|------|-----|-----|
| LG-75 | 8.88 | --- | --- | 1.44 | 1.69 | 2.38 | --- | 1/2 | 1-1/4 | 3/4 | --- | --- | --- | --- |
| LG-100 | 9.88 | | | | | | | | | 1 | | | | |
| LG-125 | 10.88 | | | | | | | | | 1-1/4 | | | | |
| LG-150 | 12.25 | 5 | 5.75 | 1.5 | 2.25 | 3.25 | 1.5 | 1 | 2 | 1-1/2 | 1.81 | 1.5 | .44 | .5 |
| LG-200 | 13.25 | 6 | | | | | 2 | | | | | | | |
| LG-300 | 17.5 | 9.25 | 6.84 | 1.41 | 2.88 | 4.38 | 1.81 | 1-1/2 | 3 | 3 | 1.94 | 1.75 | .56 | .62 |
| LG-400 | 22.5 | 12 | 8.44 | 2.06 | | 5.38 | 2.31 | 2 | 4 | 4 | 2.38 | 2 | | |
| LG-500 | 26.5 | 16 | | | | | 2.38 | | | 5 | 2.62 | 2.25 | | |

Pipe threads on this page conform to NPT (ANSI Standard B2.1)

Dimensions (in inches) MULTI-RATIO™ Mixers

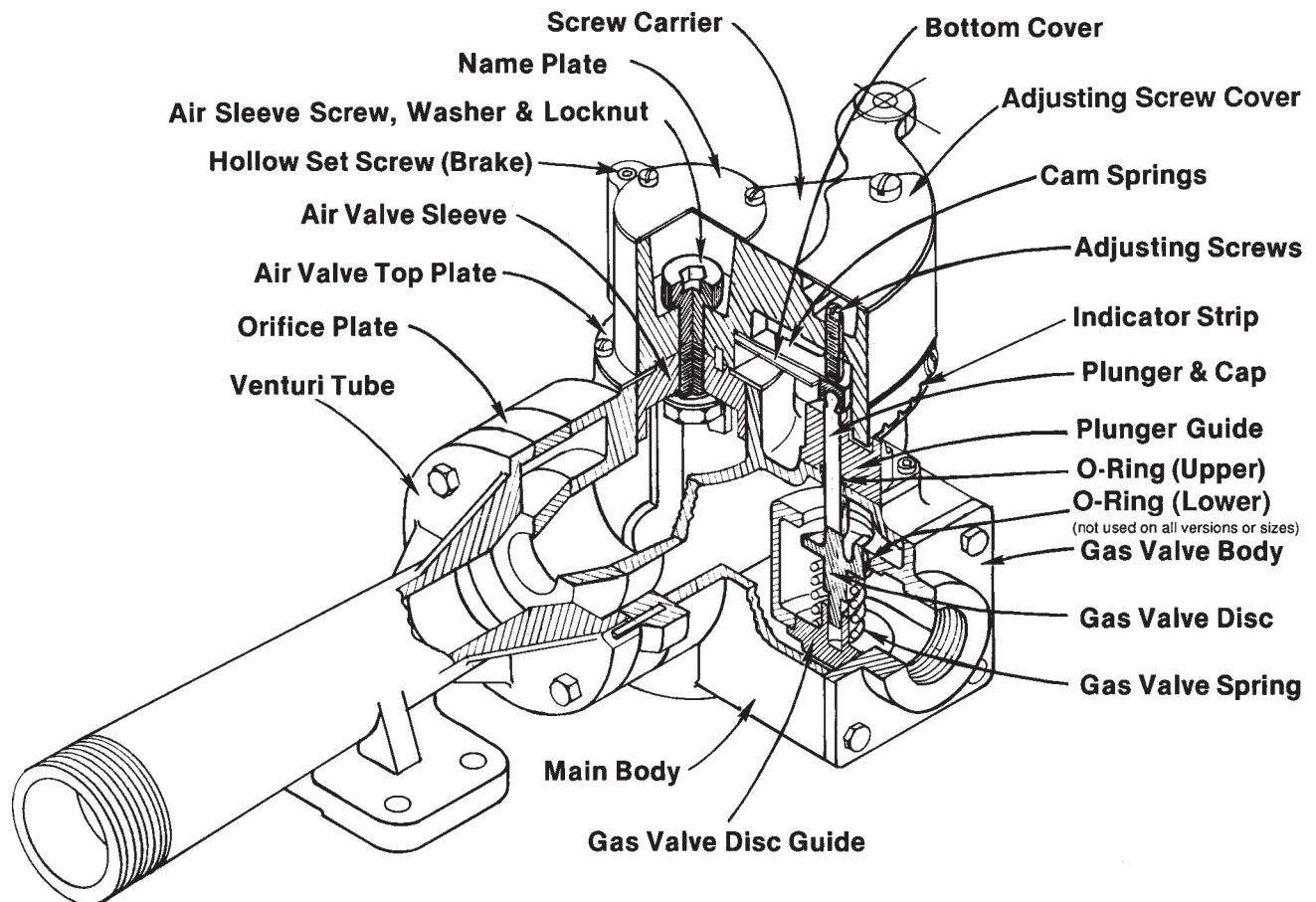


| MULTI-RATIO™ Mixer Size | A | B | C | D | E | F | G | H gas inlet | J air inlet | K outlet | L | M | N | O | P | R |
|-------------------------|-------|------|------|------|------|------|------|-------------|-------------|----------|-----|------|------|------|-----|-----|
| MR-75 | 9.38 | | | | | | | | | 3/4 | | | | | | |
| MR-100 | 10.38 | --- | 1.75 | 3.19 | 2.31 | 5.62 | 2.88 | 3/4 | 1-1/4 | 1 | .56 | --- | --- | --- | --- | --- |
| MR-125 | 11.38 | | | | | | | | | 1-1/4 | | | | | | |
| MR-150 | 12.38 | 7.38 | 1.88 | 5.19 | 2.69 | 6.56 | 3.06 | 1-1/4 | 2 | 1-1/2 | .69 | 1.5 | 3.62 | 1.5 | .44 | .5 |
| MR-200 | 13.38 | | | | 2 | | | | | 2 | | 1.69 | | | | |
| MR-300 | 17.75 | 8.5 | | | 4 | | | | 3 | 3 | | 1.81 | 3.88 | 1.75 | | |
| MR-400 | 21.75 | 9.75 | 2.94 | 6.75 | 4.12 | 8.06 | 3.94 | 2 | 4 | 4 | .56 | 2.62 | 4.75 | 2 | .56 | .62 |
| MR-500 | 25.75 | | | | 4.12 | | | | | | | | 5 | | | |

Pipe threads on this page conform to NPT (ANSI Standard B2.1)

Component Identification

MULTI-RATIO™ Mixers



Suggested spare parts:

- Cam springs
- Plunger and cap assembly
- O-Ring assembly

To order replacement parts:

1. Specify parts by the names shown in the sketch above
2. Indicate quantity desired
3. Indicate burner size and assembly number from burner nameplate (sample at right),
4. If available, indicate serial number stamped on nameplate of Maxon Shut-Off Valve used with this mixer

Nameplate



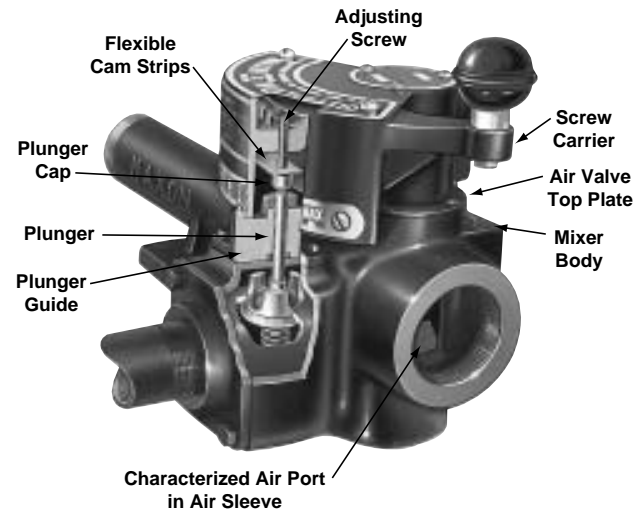
Suggested Maintenance/Inspection Procedures for MULTI-RATIO™ Mixers

Preventive maintenance will help your MULTI-RATIO™ Mixer maintain the accurate air/fuel ratio control it is designed to provide. To overcome the dirt, grease or scale accumulations that may build up internally, we suggest you establish a periodic maintenance schedule based on experience and the severity of your operating conditions, and perform periodic air/valve cleaning as outlined below:

1. Shut down combustion system both electrically and mechanically (by closing gas cocks, etc.).
2. Disconnect control motor linkage at the mixer screw carrier (so that adjustment will be unchanged after re-assembly).
3. Remove the four screws which hold air valve top plate onto mixer body. (To reach all four, screw carrier must be rotated from one extreme position to the other.)
4. Lift screw carrier and air valve out of mixer body, exposing plunger and cap assembly.
5. Clean accumulated dirt from air valve sleeve and mixer body.

WARNING: A surface lubricant such as spray graphite must coat surfaces of air valve and body for smooth operation. After cleaning parts thoroughly, apply spray graphite and allow at least 10-15 minutes drying before re-assembling. DO NOT USE PETROLEUM BASE LUBRICANTS.

6. Remove, clean and inspect plunger and cap assembly. If cap is missing or does not swivel freely, replace entire plunger and cap assembly.
7. Re-insert plunger and cap into plunger guide and check for free movement. If operation is erratic or plunger sticks, replace plunger and cap assembly.



8. Turn screw carrier over and inspect the cam springs mounted inside. Replace the cam springs if they are not smooth and free of scratches or gouges. If they are in good condition, lubricate with light grease or petroleum jelly.
9. Return screw carrier and air valve assembly to mixer body, then replace the four hold-down screws and tighten air valve top plate securely.
10. Observe several operating cycles for proper firing. Refine adjustment of adjusting screws if necessary.
11. Reconnect automatic control linkage and place system back in operation.