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3065 North American
Aspirators and Gas Mixers

Dependable and uniform air/fuel mixtures

- Large range of available sizes for various applications
- Rugged design for long life
- Compact design allows for simple installation

Design features and benefits of 3065 North American aspirators and gas mixers

3065 Aspirator Mixers are used to create a uniform air / fuel mixture to feed premix burner nozzles. Energy from blower air passing through the 3065 venturi creates suction, which entrains a proportional flow of gas at atmospheric (zero gauge) pressure. Multiple premix burner nozzles fed by a 3065 can be controlled by a single manual or motorized air valve.

Proper air/fuel ratio is initially set by adjusting the integral V-port* valve built into the mixer. The ratio is maintained from high fire to low by an "atmospheric regulator" (zero governor) or by cross connecting the regulator (e.g., North American's 7218).

For coke oven, manufactured, and other gases corrosive to brass, specify 3065- -K Mixer with iron/steel parts in place of brass.

For an observation port in place of a -0 plug (no rod) specify 3065- -0-OBS (3065-1 to -8 sizes).

3065 ASPIRATOR AIR/GAS MIXER FEATURES

- Mixes air with any fuel gas from 500 to 3,200 Btu/ft3 HHV
- Over 200 size combinations to fit most applications
- 3/4" to 8" air inlet & premix outlet
- Efficient design with low pressure loss
- Suitable for single or multiple premix nozzles
- Rugged cast iron construction* for long life
- Compact construction for easy installation
- Mount in any position
- Interchangeable displacement rods for optimum mixture pressure and suction ratio.
- Rods can be changed without breaking air or gas piping
- Built in gas adjustment valve cartridge*
- Gas adjustment cartridge & gas inlet are interchangeable*

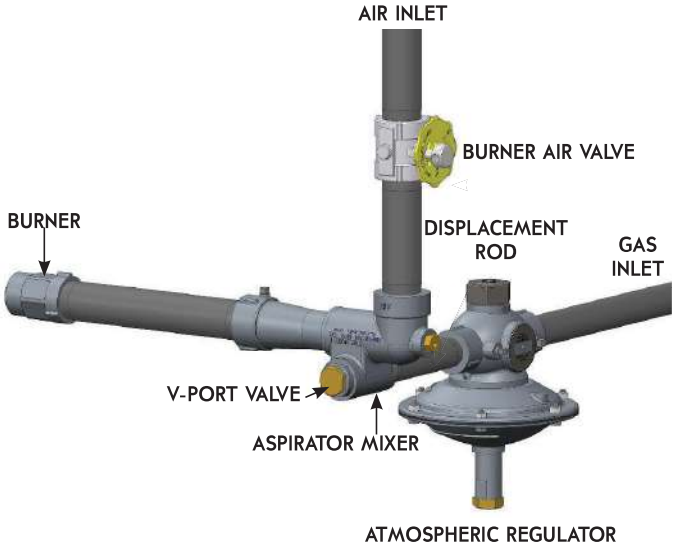


Figure 1. Typical arrangement of 3065 Aspirator Mixer with burner, atmospheric regulator, and air valve.

Rated Air Flow of each 3065 without rod (scfh)

Air P. (osi)	4	8	12	16
Mixer D.P. ("wc)	4.9	9.8	14.8	19.7
Mixture P. ("wc)	2	4	6	8
3065-0-0	480	680	830	960
3065-1-0	650	930	1130	1310
3065-2-0	1220	1730	2120	2450
3065-3-0	1850	2620	3210	3710
3065-3-S0	2740	3870	4750	5480
3065-4-0	3200	4530	5550	6410
3065-4-S0	3960	5600	6860	7930
3065-5-0	4440	6280	7700	8890
3065-5-S0	6420	9070	11110	12800
3065-6-0	6640	9400	11510	13300
3065-6-S0	10950	15500	19000	21900
3065-7-0	13200	18700	22900	26400
3065-8-0	34100	48200	59100	68300
3065-8-S0	51700	73200	89600	103500
3065-9-0	65800	97300	1119000	138000

*3065-9 Mixers have fabricated steel construction and a separate 1127-7-F limiting orifice butterfly valve in the gas line upstream of the mixer.

3065 Aspirator Mixer Operating Principles

Aspirator (air-jet) mixers generally operate with low pressure air in the 3 to 20 osi (5 to 35"w.c.) range and use the venturi effect to pull fuel into an air stream. This creates shear between the fuel and air flows that efficiently mixes them to make uniform (high quality) premix. They are often used with a zero governor (atmospheric regulator) which controls fuel/air ratio when the air flow through the mixer is adjusted.

To conform to field conditions or to get lower or higher mixture pressures (with more or less suction, respectively), 3065 mixers have interchangeable displacement rods that permit changing the mixer air orifice size. Rods can be changed without "breaking" the piping. The rod diameter in 32nds of an inch is stamped on the rod nut.

3065 mixers have a built in pressure tap to measure the air pressure as it enters the mixer and a tap to measure the mixture pressure as it exits the mixer. These taps can also be used as points to connect an impulse line for a cross connected ratio regulator control.

3065 mixers are suitable for operation over the entire range of conventional premix burners. Most North American premix burners have a minimum mixture pressure limit of .25"w.c., but depending on piping configuration, often must be set higher to prevent flashback. This means the low fire air pressure setting at the mixer inlet is usually above 1"w.c. Follow the North American piping guidelines to reduce the risk of flashback at low fire and flame lift-off at high fire.

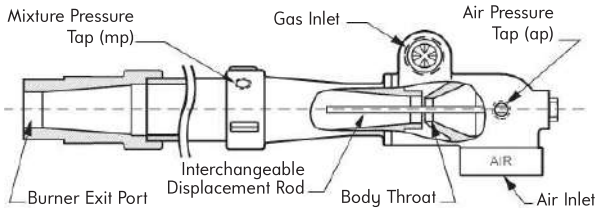


Figure 2. Typical 3065 Mixer & Premix Burner

The easiest way to pick the correct mixer for an application is to use the sizing tables in this bulletin. In cases where that is not appropriate, there are a number of factors to keep in mind.

1. "Mixture pressure": this is the pressure of the premix as it leaves the mixer which is the same as the pressure the burner requires upstream of the nozzle, plus piping pressure losses between the mixer and the burner (if any).

2. "Air pressure": this is the pressure required to supply air into the mixer.

3. "Mixer differential pressure": this is the difference between air pressure and the mixture pressure (dp = ap - mp). Besides helping to size the mixer, knowing the mixer differential pressure at the required flow rate, helps in estimating the air flow through the mixer during operation.

4. The "Air pressure/mixer differential pressure" ratio is important to know (along with fuel type) when picking a mixer size, especially when using a zero governor (atmospheric regulator) for fuel/air ratio control.

— For air/natural gas or propane systems (800 Btu/ft3 or more), "the air pressure in osi should be 2X the numerical value of the mixer pressure in inches water column" or a 3.5 to 1 air pressure/mixture pressure ratio. For example, if the desired mixture pressure at a burner nozzle is 4"w.c., then pick a mixer that requires 8 osi (14"w.c.) air pressure at the inlet to the mixer at the desired air flow rate (Note: 1 osi = 1.73"w.c.)

— For coke oven gas and manufactured gas "the air pressure/mixture pressure ratio is 4 to 1". So if the desired mixture pressure for a burner nozzle is 4"w.c. the air pressure at the inlet to the mixer at the desired air flow rate should be 16"w.c. (9.3 osi)

If the ratio regulator is cross-connected to the mixer with an impulse line, the air pressure/mixture pressure ratio becomes less critical for ratio control. This gives the system designer an option to reduce the system air pressure requirement by choosing a mixer with less pressure drop.

5. The quality (uniformity) of the air/fuel mixture is a function of the percentage of air pressure used for mixing.

The minimum recommended air pressure drop for a cross connected system is 33% of the supply pressure. Using less pressure drop across the mixer will result in low quality air/fuel mixing. A minimum air pressure drop of 66% of the air pressure is required to use a zero governor with natural gas.

If the ratio regulator is cross connected, it is acceptable to size the mixer so that the air pressure is 2X the mixture pressure. In this case the mixer pressure drop will be 50% of the supply pressure.

ASPIRATOR MIXERS for 3/4" PREMIX PILOT TIPS

3065 mixers are suitable for supplying premix to single or multiple 3/4" pilot tips. The capacity of North American 4021 and 4027 pilot tips is similar to the capacity of a 4651-01-A size premix burner, so use the -01-A data in the sizing tables when sizing for 3/4" premix pilot tips. Consult the pilot bulletin for actual pilot capacities and pressure requirements.

The 4031 pilot mixer comes in one size, is simpler than the 3065 and is often preferred for use with a single 3/4" pilot tip. Old pilot systems that use the now obsolete 4035-01 and 4035-02 mixers can be replaced with the 4031 mixer.

For better pilot tip reliability, pilot ratio regulators should be cross-connected downstream of the pilot air control valve to a pilot mixture or air pressure tap.

Fuel/Air Ratio Control

Using a zero governor (atmospheric regulator)

A zero governor (atmospheric regulator) is a ratio regulator that relies on suction from an aspirator mixer to control air/fuel ratio. It is the classic way of controlling fuel air ratio in premix combustion system as it does not require high gas pressure supply. This is very important when gas delivery systems have limited supply pressures.

Zero governors work by maintaining atmospheric pressure (zero pressure) at the regulator outlet. Increasing air flow through a mixers' venturi increases suction on gas line. To maintain its "zero" outlet pressure, the regulator opens its' gas valve to increase the amount of gas flowing to the mixer. When the air flow is reduced, the suction is decreased and the regulator valve closes to maintain the zero outlet pressure.

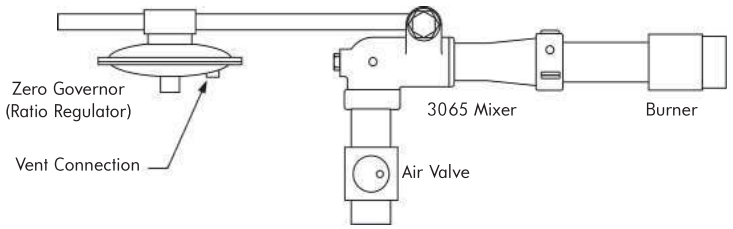


Figure 3. Typical ratio control system with zero governor ratio regulator

Using a cross-connected ratio regulator

There are a number of reasons to cross-connect the ratio regulator feeding a 3065:

— The combustion chamber pressure varies or is different than the room pressure. For example premix burner used as pilot tips are almost always cross connected.

— The air pressure drop across the mixer is less than 66% of the air supply pressure, there may not be enough suction generated by the mixer to use a true zero governor.

The regulator can be cross-connected to the mixture pressure tap or air pressure tap with an impulse line (ideally 3/8" copper or SST tubing). When a zero governor is cross-connected, the gas pressure at the zero governor (regulator) inlet must be at least equal to the impulse line pressure plus pressure drop across the governor. Do not set the gas pressure upstream of the ratio regulator higher than necessary. When the gas pressure is increased above optimum the air/fuel ratio adjustment will lose resolution and get touchy.

Cross-connecting to the mixture pressure generally provides better ratio control resolution than using the air pressure tap. Use the air pressure tap to impulse line and regulator case is objectionable. For example when the fuel contains corrosive components.

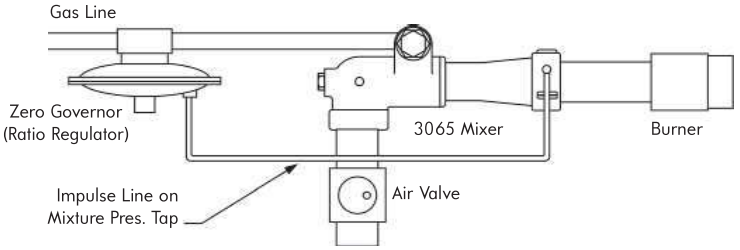


Figure 3b. Typical ratio control system with zero governor ratio regulator cross-connected to the mixture pressure.

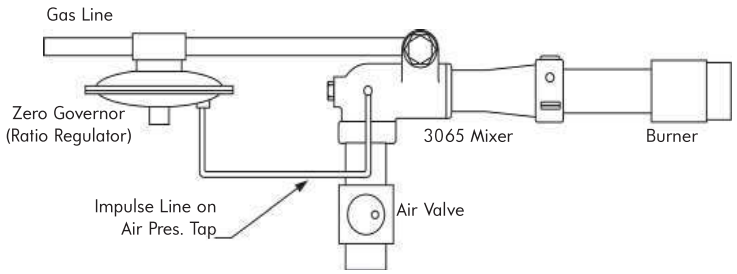


Figure 3c. Typical ratio control system with zero governor ratio regulator cross-connected to the air pressure.

Mixer Installation - 8666 TESTIPS

3065 Mixers can be mounted in any position convenient to the application piping. The gas adjustment cartridge assembly can be mounted in either side of the mixer. Gas inlet is perpendicular to air line. Mixers are shipped with the valve closed and with right-hand assembly as shown. Plugged pipe taps (1/8") are provided for pressure readings.

When mounting the 3065 mixer, leave clearance for removing the cap and Allen wrench adjustment of the gas valve. The cap conceals the gas adjustment, discourages tampering with the setting, and reduces the chance of gas leaks. The gas adjustment valve is not designed for tight shut off, use a suitable shut off valve upstream of the 3065 gas inlet.

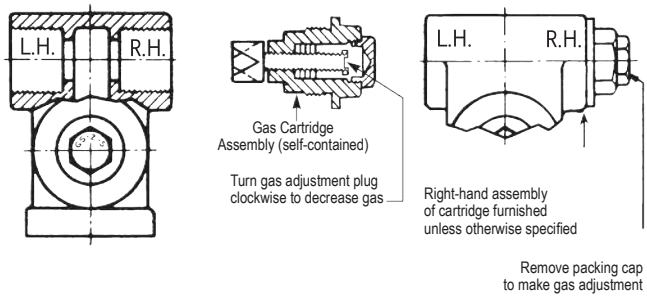


Figure 4. Gas Cartridge detail of 3065 Aspirator Mixer

Installing elbows directly at the outlet of a 3065 mixer or using a short nipple between the 3065 mixer and burner can cause combustion instability, or require narrowly held air/fuel ratio settings. It can require the mixture pressure to be held lower than desired to avoid flame lift-off, and nuisance outages of flame supervisory devices. To help avoid these problems install straight unobstructed pipe with a minimum length of 5 L/D between the mixer and pre-mix burner nozzle. If space is limited, then mixer can be connected to the burner with two long nipples and an elbow (see sketch). Allow at least 4 pipe diameters on each side of the elbow.

For additional information see: Handbook Supplement 14 "Straight Pipe Run Requirements".

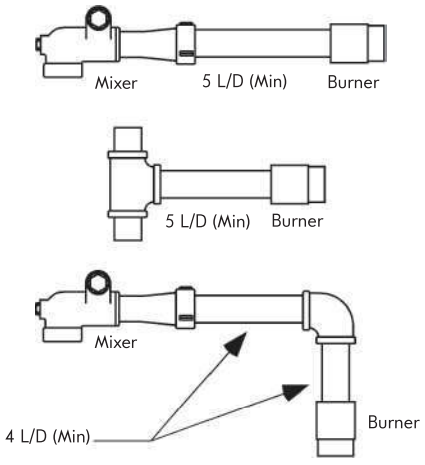


Figure 5. Minimum recommended straight pipe runs

When using a cross-connected regulator an impulse line can be taken off the tap provided on the 3065 mixer or use a tap location in a straight section of air piping.

Taps in piping should come off from the side or top of a pipe to prevent condensate or dirt from entering it. Small impulse lines are easily plugged by dirt. Avoid sharp edges and abrupt changes of flow direction. Any burrs or nipples projecting into the pipe cause the air in the pipe will increase velocity. Any change in velocity gives a false pressure reading.

Avoid dips in the impulse lines where condensed water could collect. If possible pitch impulse lines so water will run back to the air line and not to the regulator, where it could collect on the diaphragm and "fool" the regulator.

Leave the connection at the regulator end of an impulse line till last; and blow out the impulse line from the regulator end until you can feel air coming through the tapped pipe.

8666 TESTIPS

Flames often are not easily visible when sealed-in nozzles are used. An 8666 Testip facilitates setting desired air/fuel mixture. The Testip is installed in mixture line per diagram below; it is lit with a manual torch after main flame has been lit. Air/gas ratio is adjusted in the mixer until Testip flame seems appropriate:

— A purple tinge indicates lean ratio.
— A greenish-blue inner cone denotes a rich flame.
— Compare testip flame with correct burner ratio setting.

Testips are turned off after ratio setting has been set. They should be removed (and the hole plugged) when not in use. Do not use an 8666 Testip for final settings with mixers smaller than 1½", its capacity would represent too high a percentage of total capacity to allow accurate main flame settings. Use extra caution with 8666 Testips outdoors, the flame can be difficult to see in direct sunlight.

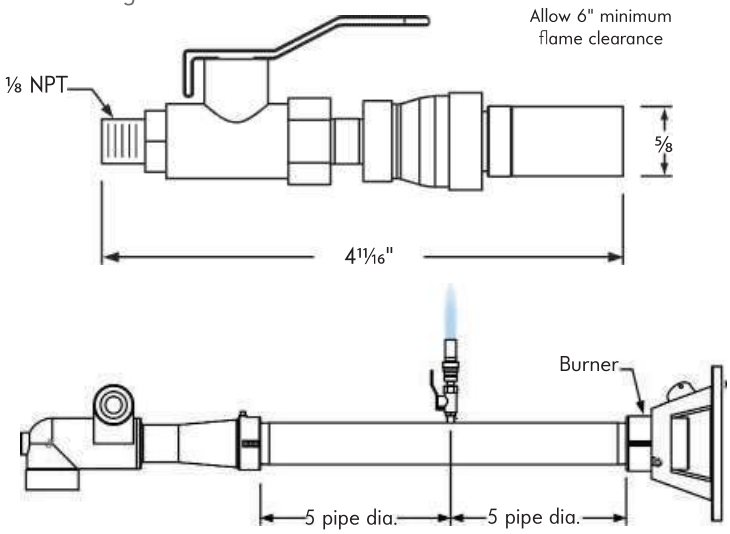


Figure 6. 8666 Testip

Materials - 3065-S Mixers - Ordering Information

MATERIALS

3065-0 through -8 mixer bodies and mixing chambers are machined from iron castings. The -7 and -8 sizes have viton gaskets on flanged connections.

Depending on the mixer size, gas cartridge assemblies are made from brass, steel and cast iron, with seals made from viton and nitril.

Mixer displacement rods are made from steel. The rod support plugs are made from brass on -0 through -5 sizes and aluminum on -6 and larger sizes.

On 3065-K models, steel or stainless steel is substituted for the brass parts (for use with gases corrosive to brass).

3065-9 mixer bodies and mixing chambers are fabricated from steel, and assembled with a viton gasket. The 1122-7-F valve used on the 3065-9 for gas adjustment is made from cast iron, stainless steel, steel and has a viton seal.

3065-S ASPIRATOR MIXERS

3065- -S Aprirator Mixers have oversized throats for higher air capacities and mixture pressures than standard mixers.

They are useful where:

— Burner capacity does not match a standard mixer size, e.g., certain line burner assemblies and special bore nozzles.

— Mixture line size is restricted, and the use of a standard mixer would prevent the combustion system from reaching full capacity.

— A modest increase in combustion sytsem capcaity is desired without extensive re-piping.

Increasing mixer capacity in the 3065-S involves sacrificing suction efficiency, therefore it may be necessary to cross-connect the zero governor when using a -S mixer.

When feeding several nozzles from one 3065- -S mixer, a mixture manifold at least one pipe size larger than the mixer outlet is recommended.

ORDERING INFORMATION

3065 Mixer with rod part numbers = 3065- __ - __
Rod size (0-80 see table 4 on Sheet 3065-2_dims-pl)
Mixer Size (0-9)

Example: 3065-4-15

3065-S Mixer with rod part numbers = 3065- __ -S __
Rod size (0-72 see table 4 on Sheet 3065-2_dims-pl)
Mixer Size (3-8)

Example: 3065-7-S20

3065-K Mixer with rod part numbers = 3065- __ -K __
For Coke oven, manufactured, and other gases corrosive to brass, specify 3065- -K Mixer.
Rod size (0-72 see table 4 on Sheet 3065-2_dims-pl)
Mixer Size (0-8)

Example: 3065-0-K6

3065 Mixer only part numbers = 3065-
(Rod not included)
Mixer Size (0-9)

Example: 3065-0

3065 or -S Rod only part numbers = 3065- __ - __ RA
(Mixer not included)
Rod size (0-80 see table 4 on Sheet 3065-2_dims-pl)
For Use in Mixer Size (0-9)

Example: 3065-4-12RA

3065 with observation port in place of -0 plug = 3065- __ - __ 0-OBS
Rod size (0) and -S or -K
For Use in Mixer Size (1-8)

Example: 3065-6-0-OBS; 3065-6-S0-OBS; 3065-6-K0-OBS

Sizing 3065 Mixers Instructions

• For Standard 4651, 4659, and 4682 premix burners:

North American 4651, 4659, and 4682 premix burners share the same capacity rating system, but not every size premix burner capacity is available for every burner nozzle type, or suitable to operate at every pressure on the tables sizing tables. Consult the individual burner bulletin and sheets for details and operating stability range.

— Use **Table 1** to size a 3065 mixer for a single North American premix burner with zero governor control.
— Use **Table 2** to size a 3065 mixer for multiple North American premix burners, with zero governor control.

Mixer/burner parings in **Table 1** and **2** maintain a relationship between mixer air orifice area and burner premix orifice area (about a 1:2.5 ratio for natural gas, and 1:2.9 for coke oven gas and manufactured gas).

• For other premix burners if the required burner flow is known:

— Determine how much mixture pressure is required for the premix burner that the 3065 is feeding by consulting burner instructions.

— Determine how much mixer air pressure is required for the fuel and control being used.
  - For zero governor control with Natural Gas, mixer air pres sure (ap) = mp X 3.5
  - For zero governor control with Manufactured or Coke Oven Gas, mixer air pressure (ap) = mp X 4.0
  - For cross-connected regulator control with most fuels, and proper distance between the mixer and the burner, mixer air pressure (ap) = mp X 2 is adequate.

— To find mixer differential pressure (Pressure Drop Across Mixer), subtract mp from ap (dp = ap - mp)

Example, for zero governor control with Natural Gas with a burner that requires 6"w.c @ 6,000 cfh air mp = 6": ap=21"w.c.: dp = 15"w.c.

— Use **Chart 1** with the desired air flow and mixer dp to identify the correct 3065 mixer to match other premix burners for use with zero governor ratio control.

Note that **Chart 1** *does not list every size mixer available.*

— To use **Table 3** the **dp** and burner air flow will need to be converted via the square root law to 1" or 30"w.c. pressure with the new corresponding air flow.

Example: dp = 15"w.c. @ 6,000 cfh air

To find air flow when dp = 1"w.c.

$$\text{Solution: } Q_2 = Q_1 \times \sqrt{\frac{\Delta P_2}{\Delta P_1}}$$

$$Q_2 = 6{,}000 \times \sqrt{\frac{1}{15}}$$

$$Q_2 = 1549 \text{ cfh air @ } 1"$$

Using **Table 3**: choose a 3065-5-16 mixer (with 21/2" air inlet), if 2" air piping is required then a 3065-4-S12 could be used.

• For premix burners if only the burner orifice area and required mixture pressure is known:

— Since flow through most premix burners is nearly proportional to open orifice area, 3065 mixers can be matched to premix burners by determining the open area and finding the closest matching 4682 burner size by area using Sheet 4600-1. Use that nozzle size with **Table 1** or **2**.

Sizing 3065 Aspirator Mixers - Table 1

Table 1 is used to size a single 3065 for any North American 4651, 4659, or 4682 premix burner, which all share the same capacity rating system. Mixer/burner recommendations in Table 1 maintain the required relationship between the mixer orifice size and burner port size for use with zero governor ratio control. To use this table, find burner size in the third column from the left, then read across to the mixer designation that appears to the left that matches the fuel being used.

Aspirator Mixer for ¾" Premix Pilot Tips:
The premix capacity of ¾" 4021 and 4027 premix pilot tips is similar to the 4651-01-A burner. So use the -01-A data in Table 1 for ¾" pilot mixer sizing. Consult the pilot bulletin for acutal pilot capacities. The 4031 pilot mixer is often preferred for use with a single ¾" pilot tip. For better pilot tip reliability, pilot ratio regulators should be cross-connected downstream of the pilot air control valve to a pilot mixture or air pressure tap.

TABLE 1. Capacities* scfh air of 3065 Mixers with North American burner nozzles.
(for Btu/h, multiply by 100)‡

Complete 3065 Mixer Designation		North American Premix Burner Size #	Required Air Pressure in osi for Natural Gas: 2	4	6	8	10	12	14	16
			Required Air Pressure in osi ^ for Manufactured or Coke Oven Gas: 2.3	4.6	6.8	9.1	11.4	13.7	16	18.3
Manufactured or Coke Oven Gas	Natural Gas		Mixture Pressure in inches of Water Column**: 1	2	3	4	5	6	7	8
3065-0-10	3065-0-9	-01-A	130	180	230	260	290	320	340	370
3065-0-9	3065-0-8	-0-A	200	280	350	400	450	490	530	570
3065-0-8	3065-0-6	-0-B	250	350	430	500	560	610	660	710
3065-0-7	3065-0-5	-0-C	280	400	480	560	630	690	740	790
3065-1-9	3065-1-7	-1-A	350	490	610	700	780	860	930	990
3065-1-8	3065-1-5	-1-B	440	620	760	880	980	1 080	1 160	1 240
3065-2-13	3065-2-12	-2-A	560	790	970	1 120	1 250	1 370	1 480	1 580
3065-2-12	3065-2-10	-2-B	650	920	1 130	1 300	1 450	1 590	1 720	1 840
3065-2-10	3065-2-6	-2-C	780	1 100	1 350	1 560	1 740	1 910	2 060	2 210
3065-2-6	3065-2-0	-2-D	880	1 240	1 520	1 760	1 970	2 160	2 330	2 490
3065-3-14	3065-3-11	-3-A	980	1 390	1 700	1 960	2 190	2 400	2 590	2 770
3065-3-11	3065-3-6	-3-B	1 200	1 700	2 080	2 400	2 680	2 940	3 170	3 390
3065-4-18	3065-4-16	-4-A	1 500	2 120	2 600	3 000	3 350	3 670	3 970	4 240
3065-4-14	3065-4-10	-4-B	1 900	2 690	3 290	3 800	4 250	4 650	5 030	5 370
3065-4-12	3065-4-8	-4-C	2 050	2 900	3 550	4 100	4 580	5 020	5 420	5 800
3065-5-18	3065-5-14	-5-A	2 450	3 460	4 240	4 900	5 480	6 000	6 480	6 930
3065-5-13	3065-5-10	-5-B	2 900	4 100	5 000	5 800	6 500	7 100	7 700	8 200
3065-6-24	3065-6-20	-6-A	3 200	4 500	5 500	6 400	7 200	7 800	8 500	9 100
3065-6-18	3065-6-10	-6-B	3 850	5 400	6 700	7 700	8 600	9 400	10 200	10 900
3065-6-16	3065-6-0	-6-C	4 250	6 000	7 400	8 500	9 500	10 400	11 200	12 000
3065-7-38	3065-7-34	-7-A	4 750	6 700	8 200	9 500	10 600	11 600	12 600	13 400
3065-7-32	3065-7-26	-7-B	6 000	8 500	10 400	12 000	13 400	14 700	15 900	17 000
3065-7-26	3065-7-18	-7-C	7 050	10 000	12 200	14 100	15 800	17 300	18 700	19 900
3065-8-68	3065-8-64	-8-A	10 500	14 800	18 200	21 000	23 500	25 700	27 800	29 700
3065-8-60	3065-8-56	-8-B	13 000	18 400	22 500	26 000	29 100	31 800	34 400	36 800
3065-8-52	3065-8-36	-8-C	18 000	25 500	31 200	36 000	40 200	44 100	47 600	51 000
3065-8-28	3065-8-0	-8-D	21 500	30 400	37 200	43 000	48 100	52 500	57 000	60 800
3065-9-64	3065-9-56	-9	37 700	53 500	65 000	75 500	84 500	92 000	99 500	107 000

NOTES:

* Air flow capacity data assumes stoichiometric ratio with natural gas, air flow increases with excess air and decreases with excess fuel.

‡ Capacities with 100% combustion air through mixer and nozzle. Burners can be operated with "rich" mixture if secondary air is available in vicinity of nozzle, which increases Btu/h capacities.

** Not every size premix burner capacity is available for every burner type, or stable at every pressure on this table. Consult the individual burner bulletin and sheets for details and operating stability range.

^Multiply air pressure in osi by 1.73 to convert pressure in osi to pressure in inches wc (16 osi = 27.7"w.c.)

Sizing 3065 Aspirator Air/Gas Mixers - Table 2

Table 2 lists proper selection if several burners are fed from a single 3065 mixer. Burner capacity and number of premix burners (4651, 4659, or 4682) determine mixer selection. Mixer/burner recommendations in Table 2 maintain the required relationship between the mixer orifice size and burner port size for use with zero governor ratio control. Flow distribution and pressure drops should be considered carefully when designing the mixture manifold.

To use this table, find burner size in left-hand column, then read across to the mixer designation that appears under the number of burners to be fed.

Multiple premix burner arrangements with mixers larger than the three inch -7 size, burners above the -5-A size or with more than 10 burners are prone to flashback. When sizing mixers for multiple burners outside the range of Table 2, use a single mixer for each burner or divide the burners among two or more mixers, and select the mixers from Table 2.

Aspirator Mixers for ¾" Premix Pilot Tips:
The premix capacity of ¾" 4021 and 4027 premix pilot tips is similar to the 4651-01-A burner. To size a 3065 for multiple ¾" pilot tips use the -01-A data row in Table 2 for ¾" pilot mixer sizing. Consult the pilot bulletin for actual pilot capacities. The 4031 pilot mixer is often preferred for use with a single ¾" pilot tip. Pilot ratio regulators should always be cross-connected to the mixture or air pressure taps on the mixer.

TABLE 2. Recommended Mixer Selections for Multiple Burners Using Natural Gas

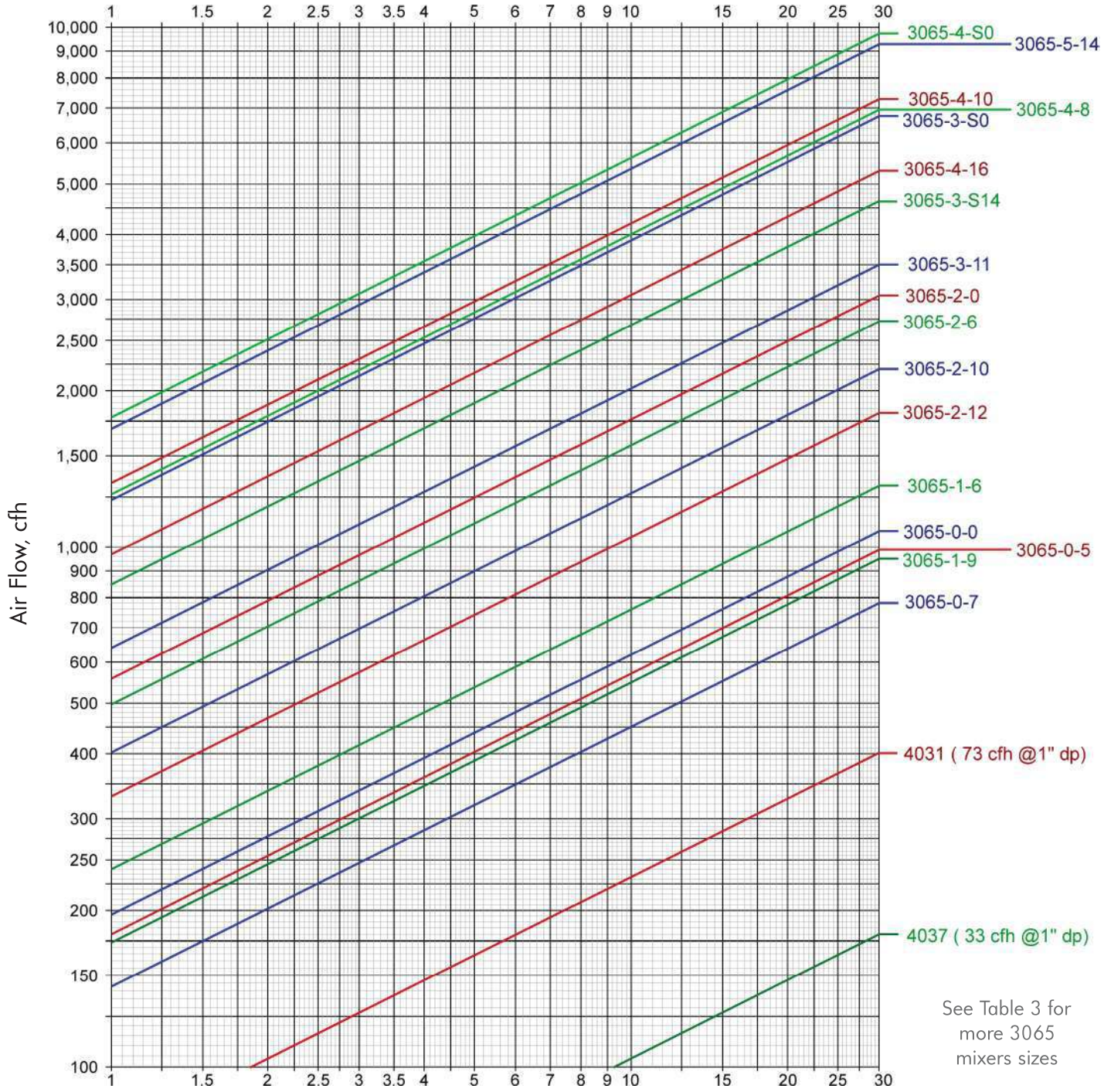
Burner Size desig.	Number of Burners per 3065 Aspirator Mixer									
	1	2	3	4	5	6	7	8	9	10
-01-A	3065-0-9	3065-0-5	3065-1-6	3065-2-13	3065-2-11	3065-2-8	3065-2-6	3065-2-0	3065-3-11	3065-3-6
-0-A	3065-0-8	3065-1-8	3065-1-5	3065-2-8	3065-3-13	3065-3-9	3065-3-5	3065-4-16	3065-4-14	3065-4-12
-0-B	3065-0-6	3065-1-4	3065-2-8	3065-3-12	3065-3-7	3065-4-16	3065-4-14	3065-4-10	3065-5-18	3065-5-16
-0-C	3065-0-5	3065-2-12	3065-3-13	3065-3-6	3065-4-15	3065-4-11	3065-5-18	3065-5-15	3065-5-10	3065-6-24
-1-A	3065-1-7	3065-2-9	3065-3-10	3065-4-17	3065-4-13	3065-4-5	3065-5-15	3065-5-10	3065-6-22	3065-6-20
-1-B	3065-1-5	3065-2-4	3065-3-4	3065-4-13	3065-5-18	3065-5-13	3065-6-24	3065-6-20	3065-6-15	3065-6-10
-2-A	3065-2-12	3065-3-9	3065-4-14	3065-5-17	3065-5-9	3065-6-20	3065-6-15	3065-6-6	3065-7-36	3065-7-34
-2-B	3065-2-10	3065-4-18	3065-4-8	3065-5-12	3065-6-22	3065-6-14	3065-7-38	3065-7-34	3065-7-32	3065-7-28
-2-C	3065-2-6	3065-4-15	3065-5-15	3065-6-24	3065-6-13	3065-7-36	3065-7-32	3065-7-28	3065-7-24	3065-7-18
-2-D	3065-2-0	3065-4-11	3065-5-9	3065-6-18	3065-7-38	3065-7-32	3065-7-28	3065-7-20	3065-7-12	–
-3-A	3065-3-11	3065-4-8	3065-6-24	3065-6-13	3065-7-36	3065-7-30	3065-7-24	3065-7-15	–	–
-3-B	3065-3-6	3065-5-15	3065-6-18	3065-7-36	3065-7-30	3065-7-20	3065-7-4	–	–	–
-4-A	3065-4-16	3065-6-22	3065-7-38	3065-7-28	3065-7-18	–	–	–	–	–
-4-B	3065-4-10	3065-6-14	3065-7-30	3065-7-16	–	–	–	–	–	–
-4-C	3065-4-8	3065-6-9	3065-7-28	3065-7-4	–	–	–	–	–	–
-5-A	3065-5-14	3065-7-34	3065-7-16	–	–	–	–	–	–	–

For additional information on premix systems and premix system design, see the following sheets:

- Series 4651, 4659, and 4682 Burner Nozzles, Sheet 4600-1
- North American Air/Gas Ratio Regulators, Bulletin 7218/7219A
- Air/Gas Ratio Regulators, Instructions 7218-2
- Premix Burners, Handbook Supplement 288
- Straight pipe run requirements, Handbook Supplement 14
- Jiffy Sheet, Handbook Supplement 288
- Piping Practice for Industrial Burner Systems, Handbook Supplement 46
- Prevent "Pooped" Pilots, Handbook Supplement 289
- Practical Pointers (Industrial Burner Control Systems)

Sizing 3065 Aspirator Mixers - Chart 1A

Chart 1A. Air Capacities for Selected Small North American 3065 Aspirator Mixers vs. Pressure Drop Across Mixer ("wc) (Differential Pressure) (see Table 3 for Data on all 3065 sizes)
(for Btu/h, multiply by 100)



Flow through 3065 mixers is nearly proportional to throat area, so the capacity of an unlisted mixer-rod combination can be determined by comparing its net throat area with that of a closest known model.