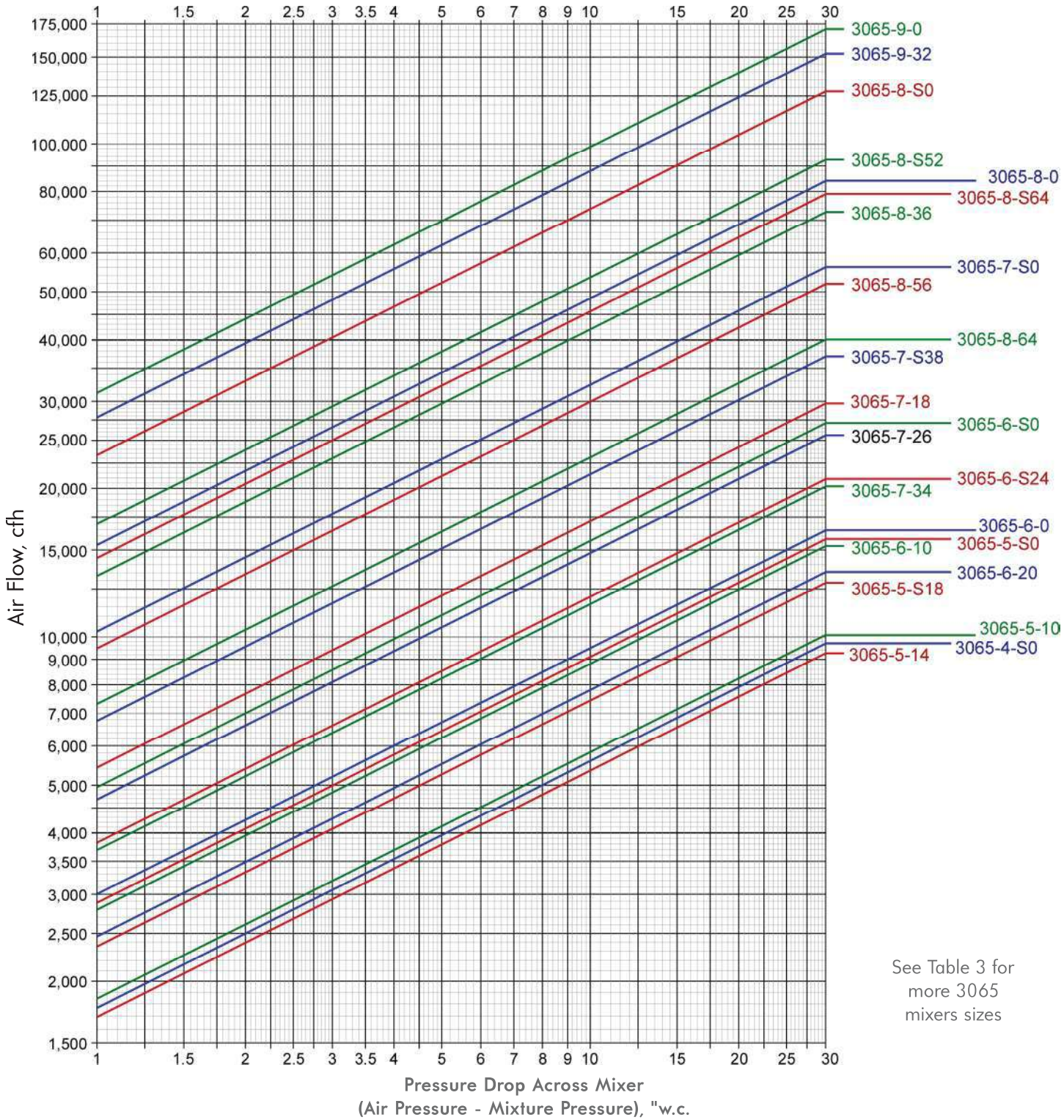
Sizing 3065 Aspirator Mixers - Chart 1B

Chart 1B. Air Capacities for Selected Large 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)



See Table 3 for more 3065 mixers sizes

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.

Sizing 3065 Aspirator Mixers - Table 3A

Table 3A. 3065 Mixer Throat Areas & Capacities, scfh air @ 1" and 30"w.c. Differential Pressure
(Pressure Drop Across Mixer = Air Pressure - Mixture Pressure)
(for Btu/h, multiply by 100)

3065(S) Mixers

3065(S) Mixer Size	Mixer Throat Area in²	Air Flow @1"wc	Air Flow @30"wc
-0-0	0.100	216	1 180
-0-5	0.091	179	980
-0-6	0.083	162	890
-0-7	0.073	143	780
-0-8	0.061	120	660
-0-9	0.048	95	520
-1-0	0.151	295	1 620
-1-4	0.138	271	1 480
-1-5	0.131	258	1 410
-1-6	0.123	241	1 320
-1-7	0.113	222	1 210
-1-8	0.102	199	1 090
-1-9	0.089	173	950
-1-10	0.074	145	790
-1-11	0.058	113	620
-2-0	0.277	552	3 020
-2-4	0.265	528	2 890
-2-5	0.258	514	2 810
-2-6	0.250	497	2 720
-2-8	0.228	454	2 490
-2-9	0.215	428	2 350
-2-10	0.200	399	2 190
-2-11	0.184	367	2 010
-2-12	0.167	332	1 820
-2-13	0.147	294	1 610
-2-14*	0.127	253	1 380
-3-0	0.406	836	4 580
-3-4	0.394	810	4 440
-3-5	0.387	796	4 360
-3-6	0.378	779	4 270
-3-7	0.368	758	4 150
-3-8	0.357	735	4 020
-3-9	0.344	702	3 850
-3-10	0.329	678	3 710
-3-11	0.313	645	3 530
-3-12	0.296	608	3 330
-3-13	0.276	569	3 120
-3-14	0.256	531	2 910
-3-15	0.233	484	2 650
-3-16	0.210	435	2 380
-3-17	0.184	383	2 100
-3-18	0.158	327	1 790
-3-S0	0.559	1 235	6 770
-3-S4	0.547	1 208	6 620
-3-S5	0.540	1 193	6 530
-3-S6	0.532	1 165	6 380
-3-S7	0.522	1 135	6 220
-3-S8	0.510	1 101	6 030
-3-S9	0.497	1 065	5 830
-3-S10	0.483	1 026	5 620
-3-S11	0.467	984	5 390
-3-S12	0.449	939	5 140
-3-S13	0.430	892	4 890
-3-S14	0.409	842	4 610
-4-0	0.645	1445	7 910
-4-5	0.626	1391	7 620
-4-6	0.617	1373	7 520
-4-7	0.607	1 350	7 400
-4-8	0.596	1 325	7 260
-4-9	0.583	1 296	7 100
-4-10	0.568	1 273	6 970
-4-11	0.552	1 228	6 720
-4-12	0.534	1 188	6 510
-4-13	0.515	1 146	6 280
-4-14	0.494	1 100	6 020
-4-15	0.472	1 050	5 750
-4-16	0.448	968	5 300
-4-17	0.423	941	5 150
-4-18	0.396	875	4 790
-4-S0	0.785	1 786	9 780
-4-S5	0.766	1 743	9 540
-4-S6	0.758	1 723	9440
-4-S7	0.748	1 701	9 320
-4-S8	0.736	1 675	9 170
-4-S10	0.709	1 612	8 830
-4-S11	0.693	1 575	8 630
-4-S12	0.675	1 535	8 410
-4-S13	0.656	1 491	8 170
-4-S14	0.635	1 444	7 910
-4-S15	0.613	1 394	7 630
-4-S16	0.589	1 340	7 340
-4-S17	0.564	1 282	7 020
-4-S18	0.537	1 221	6 690
-5-0	0.887	2 004	10 970
-5-6	0.860	1 941	10 630
-5-8	0.838	1 893	10 370
-5-9	0.825	1 863	10 210
-5-10	0.811	1 830	10 030
-5-12	0.777	1 767	9 680
-5-13	0.758	1 724	9 440
-5-14	0.737	1 689	9 250
-5-15	0.715	1 638	8 970
-5-16	0.691	1 583	8 670
-5-17	0.666	1 525	8 350
-5-18	0.639	1 464	8 020
-5-S0	1.227	2 893	15 800
-5-S6	1.200	2 828	15 500
-5-S8	1.178	2 777	15 200
-5-S9	1.165	2 746	15 000
-5-S10	1.150	2 712	14 900
-5-S12	1.117	2 651	14 500
-5-S13	1.098	2 605	14 300
-5-S14	1.077	2 556	14 000
-5-S15	1.055	2 503	13 700
-5-S16	1.031	2 464	13 500
-5-S17	1.006	2 404	13 200
-5-S18	0.979	2 339	12 800
-5-S20	0.920	2 200	12 100
-6-0	1.289	2 995	16 400
-6-6	1.261	2 931	16 100
-6-7	1.251	2 908	15 900
-6-9	1.227	2 851	15 600
-6-10	1.212	2 837	15 500
-6-12	1.178	2 758	15 100
-6-13	1.159	2 713	14 900
-6-14	1.138	2 684	14 700
-6-15	1.116	2 650	14 500
-6-16	1.092	2 611	14 300
-6-18	1.040	2 504	13 700
-6-20	0.982	2 380	13 000
-6-22	0.918	2 193	12 000
-6-24	0.847	2 011	11 000
-6-S0	1.996	4 936	27 000
-6-S6	1.968	4 868	26 700
-6-S7	1.958	4 843	26 500
-6-S9	1.933	4 782	26 200
-6-S10	1.919	4 746	26 000
-6-S12	1.885	4 663	25 500
-6-S13	1.866	4 615	25 300
-6-S14	1.845	4 564	25 000
-6-S15	1.823	4 509	24 700
-6-S16	1.799	4 450	24 400
-6-S18	1.747	4 292	23 500
-6-S20	1.689	4 149	22 700
-6-S22	1.624	3 991	21 900
-6-S24	1.554	3 817	20 900

Note: Some 3065 mixers are available with additional special rod sizes.

Sizing 3065 Aspirator Mixers - Table 3B

Table 3B. 3065 Mixer Throat Areas & Capacities, scfh air @ 1" and 30" wc Differential Pressure
(Pressure Drop Across Mixer = Air Pressure - Mixture Pressure)
(for Btu/h, multiply by 100)

3065(S) Mixers

3065(S) Mixer Size	Mixer Throat Area in²	Air Flow @1"wc	Air Flow @30"wc
-7-0	2.405	5 949	32 600
-7-4	2.393	5 919	32 400
-7-10	2.329	5 760	31 500
-7-12	2.295	5 676	31 100
-7-14	2.255	5 577	30 500
-7-15	2.233	5 522	30 200
-7-16	2.209	5 464	29 900
-7-18	2.157	5 335	29 200
-7-20	2.098	5 190	28 400
-7-24	1.963	4 857	26 600
-7-26	1.887	4 667	25 600
-7-28	1.804	4 462	24 400
-7-30	1.715	4 213	23 100
-7-32	1.620	3 953	21 700
-7-34	1.519	3 681	20 200
-7-36	1.411	3 444	18 900
-7-38	1.298	3 188	17 500
-7-S0	3.760	10 236	56 100
-7-S4	3.748	10 203	55 900
-7-S10	3.683	10 027	54 900
-7-S12	3.650	9 935	54 400
-7-S14	3.610	9 827	53 800
-7-S15	3.587	9 766	53 500
-7-S16	3.564	9 642	52 800
-7-S18	3.511	9 443	51 700
-7-S20	3.453	9 229	50 500

3065(S) Mixer Size	Mixer Throat Area in²	Air Flow @1"wc	Air Flow @30"wc
-7-S24	3.318	8 813	48 300
-7-S26	3.241	8 556	46 900
-7-S28	3.159	8 285	45 400
-7-S30	3.070	8 000	43 800
-7-S32	2.975	7 703	42 200
-7-S34	2.873	7 393	40 500
-7-S36	2.766	7 071	38 700
-7-S38	2.652	6 737	36 900
-8-0	5.940	15 381	84 200
-8-15	5.767	15 030	82 300
-8-16	5.743	15 063	82 500
-8-20	5.633	14 867	81 400
-8-24	5.498	14 602	80 000
-8-28	5.338	14 178	77 700
-8-32	5.154	13 689	75 000
-8-36	4.946	13 217	72 400
-8-40	4.712	12 594	69 000
-8-44	4.455	11 906	65 200
-8-48	4.172	11 151	61 100
-8-52	3.866	10 331	56 600
-8-56	3.534	9 446	51 700
-8-60	3.178	8 336	45 700
-8-64	2.798	7 292	39 900
-8-68	2.393	6 237	34 200
-8-72	1.963	5 117	28 000

3065(S) Mixer Size	Mixer Throat Area in²	Air Flow @1"wc	Air Flow @30"wc
-8-S0	8.621	23 325	127 800
-8-S15	8.448	22 718	124 000
-8-S16	8.424	22 514	123 300
-8-S20	8.314	22 081	120 900
-8-S24	8.179	21 587	118 200
-8-S28	8.019	21 033	115 200
-8-S32	7.835	20 420	111 800
-8-S36	7.626	19 750	108 200
-8-S40	7.393	19 146	104 900
-8-S44	7.136	18 478	101 200
-8-S48	6.853	17 747	97 200
-8-S52	6.547	16 844	92 300
-8-S56	6.215	16 095	88 200
-8-S60	5.859	15 271	83 600
-8-S64	5.479	14 461	79 200
-8-S68	5.074	13 224	72 400
-8-S72	4.644	12 027	65 900
-9-0	10.682	31 033	170 000
-9-24	10.241	29 239	160 000
-9-32	9.897	27 765	152 000
-9-40	9.455	26 526	145 000
-9-48	8.915	25 011	137 000
-9-56	8.277	23 221	127 000
-9-64	7.541	21 155	116 000
-9-72	6.706	17 812	98 000
-9-80	5.774	14 856	81 000

SIZING EXAMPLES

Note: Most premix burner pressure specifications are rated in inches water column. Most North American, blower and mixer air pressure specifications, are rated in osi: 1 osi = 1.73"w.c.

Example A: Select a mixer for a single 4651-2-D burner with 16 osi (27.7"w.c.) air and 8"wc mixture pressure, with zero governor ratio control for natural gas.

— Since this is a standard burner nozzle size with zero governor ratio control, use **Table 1**. Find the -2-D burner and pick a **3065-2-0** mixer from the list to the left. Per **Table 3A**, the **3065-3-13** has the same mixer throat area, and offers more sizing options if field conditions require a new displacement rod choice.

Example B: Select a mixer for feeding six (6) 4651-2-A burners, with zero governor ratio control for natural gas.

— Since these are standard size burner nozzles with zero governor ratio control, use **Table 2**. Find the -2-A burner row move right and find the 6 burner column. Pick the **3065-6-20** Mixer from the list.

3065 Sizing Examples continued

Example C: Select a mixer for a 4682-6-C burner with 8 osi (14"w.c.) air and 8"wc mixture pressure. This arrangement necessitates a cross-connected regulator and high gas pressure because air pressure drop is <66% of its air pressure.

— Capacity of a 4682-6-C at 8"w.c. mixture pressure is 1,200,000 Btu/h. (divide by 100= 12,000 scfh air) Pressure drop across the mixer = 8 osi (14"wc) minus 8"w.c. mp = 6"w.c. From the capacity **Chart 1B**, a 3065-6-S0 Mixer would serve the purpose, as would a 3065-7-20. For minimum cost and size (both mixer and burner nozzle are 3" NPT) use the **3065-6-S0** mixer. The gas pressure required upstream of the ratio regulator = 14" w.c. + 6"w.c. = 20" wc = 11.5 osi (use 12-16 osi)

Example D: Select a mixer for 3,000 scfh air) burner with 8 osi air and 8"w.c. mixture pressure. (This arrangement necessitates a cross-connected regulator and 12-16 osi gas pressure.) Pressure drop across the mixer = 8 osi (14"w.c.) minus 8"wc mixture pressure = 6"w.c.

— From the capacity **Chart 1A**, a **3065-3-S0** or a **3065-4-8** could be used. Which mixer to choose depends on a number of factors.

- The **3065-3-S0** uses 1½" pipe and the **3065-4-8** uses 2" pipe
- If at any time the system capacity needs to be increased, the capacity of the **3065-4-8** can be increased by using a smaller displacement rod. The **3065-0-S0** with its -0 rod is already is at the maximum capacity.
- In most cases pick the mixer with the same pipe size as the burner, but the **3065-4-8** mixer offers more sizing options if field conditions require a new displacement rod choice.

Example E1: An existing system uses a **3065-5-17** mixer to feed four (4) 4682-2-A burner nozzles, with a zero governor ratio control for natural gas. What mixer is needed if the burners are changed to four (4) 4682-2-B burner nozzles to increase the system capacity?

— Since these are standard size nozzles with zero governor ratio control, use **Table 2**. Find the -2-B nozzle row move right and find the 4 nozzle column. Find the **3065-5-12** Mixer from the list. Since the mixers are both the 3065-5 size, only the displacement rod needs to be changed.

Example E2: An existing system uses a **3065-5-17** mixer to feed four (4) 4682-2-A burner nozzles with a zero governor ratio control for natural gas. What mixer is needed if the burners are changed to four (4) 4682-2-D burner nozzles to increase the system capacity.

— Since these are standard size burner nozzles with zero governor ratio control, use **Table 2**. Find the -2-D burner row, move right and find the 4 burner column. Pick the **3065-6-18** mixer from the list. This is a new mixer size which requires larger pipe (but maybe a 3065-5-S_ will work) from **Table 3B**, the orifice throat area of a **3065-6-18** is (1.040 in2). A **3065-5-S15** is (1.055 in2). So use the **3065-5-S15** because only the mixer needs to be changed and not the piping. **Note:** The other system components still need to be checked to see if they are suitable for use with the higher capacity. Due to more pressure drop through the piping it may be necessary to cross connect the ratio regulator.

Example G: Select a mixer for a 2,300,000 Btu/h (divide by 100= 23,000 scfh air) burner with 8 osi air and 4"w.c. mixture pressure. (zero governor ratio control for natural gas) Pressure drop across the mixer = 8 osi (14"w.c.) minus 4"wc mp = 10"w.c.

— From the capacity **Chart 1B**, a **3065-8** with between a **#56** and a **#64** rod or a **3065-7-S** with between no rod and a #38 rod (21,000 cfh capacity) could be used. For minimum cost and size, use a **3065-7-S**.

Effective mixer throat area = for a **3065-7-S38** = 2.652 sq. in. (from **Table 3B**)

$$\frac{\text{(A), Throat area, unknown mixer}}{\text{Throat area, known mixer}} = \frac{\text{Capacity, unknown mixer}}{\text{Capacity, known mixer}}$$

$$\frac{(A)}{2.652} = \frac{23{,}000 \text{ scfh}}{21{,}000 \text{ scfh}}$$

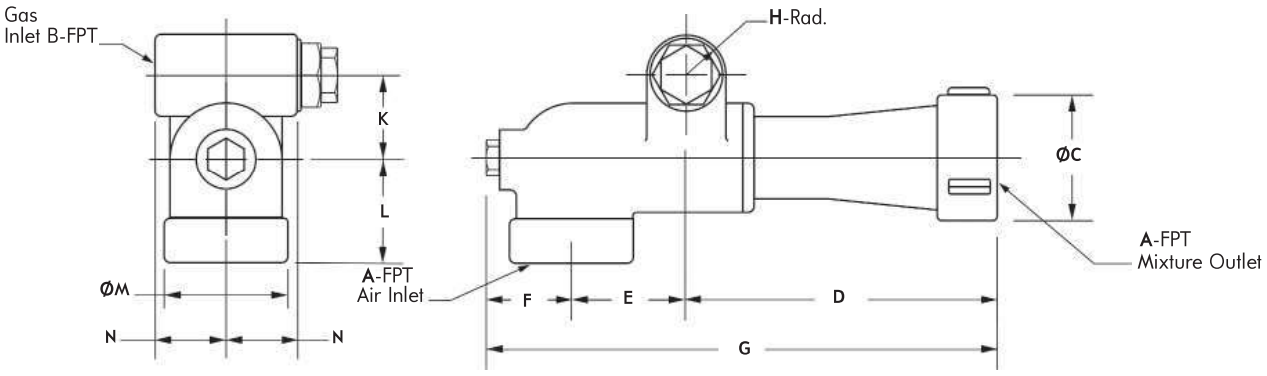
$$A = 2.90 \text{ sq. in.}$$

From **Table 3B** use **3065-7-S34** mixer.

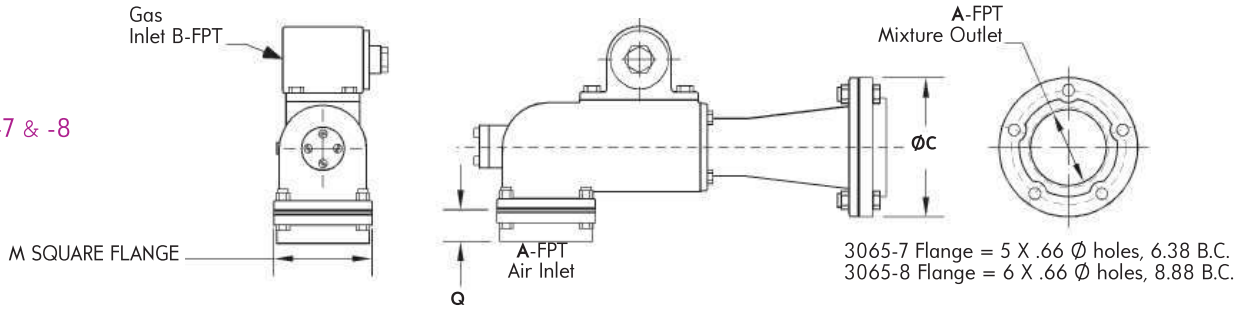
External Dimensions 3065 Aspirator Mixers - Table 4

DIMENSIONS

3065-0 to -6



3065-7 & -8



3065-9

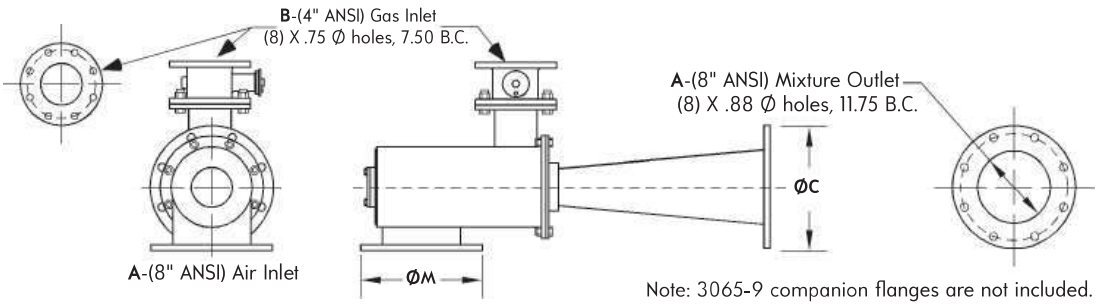


Table 4.

Mixer designation	NPT or ANSI A	B	Dimensions in inches C	D	E	F	G	H	K	L	M	N	P	Q	Wt, lb.	Gas ADJ Allen wrench size mm*
3065-0	¾	½	1.56	4.03	1.75	1.50	7.28	0.63	1.19	1.66	1.56	1.25	2.00	–	4	2.5
3065-1	1	¾	1.93	4.13	1.81	1.50	7.44	0.75	1.38	1.88	1.93	1.28	2.03	–	5	4
3065-2	1¼	1	2.25	5.88	2.06	1.69	9.63	0.88	1.66	2.03	2.38	1.47	2.22	–	7	4
3065-3	1½	1	2.63	6.50	2.44	1.81	10.75	0.84	1.75	2.16	2.63	1.50	2.25	–	8	4
3065-4	2	1¼	3.00	8.38	3.50	2.06	13.93	1.13	2.19	2.63	3.00	1.56	2.38	–	14	4
3065-5	2½	1½	3.75	10.31	4.06	2.31	16.69	1.22	2.50	3.13	3.75	1.63	2.63	–	18	4
3065-6	3	2	4.38	10.50	4.56	3.13	18.19	1.50	2.93	3.38	4.38	2.00	3.06	–	27	6
3065-7	4	2½	7.75	13.93	5.19	3.56	22.69	1.81	4.81	4.93	5.50	2.25	3.53	1.50	48	6
3065-8	6	3	10.38	17.44	8.81	4.93	31.19	2.19	6.00	6.19	8.25	2.93	4.56	1.75	125	6
3065-9	8	4	13.50	27.69	10.50	6.25	44.44	–	8.69	6.75	13.50	–	–	–	170	N/A

* Mixers purchased before 2017 use standard US Allen wrench sizes, 3⁄32, 5⁄32, 7⁄32 (or slotted before 2004).

DIMENSIONS SHOWN ARE SUBJECT TO CHANGE. PLEASE OBTAIN CERTIFIED PRINTS FROM FIVES NORTH AMERICAN COMBUSTION, INC. IF SPACE LIMITATIONS OR OTHER CONSIDERATIONS MAKE EXACT DIMENSION(S) CRITICAL.

Internal Dimensions 3065 Aspirator Mixers - Tables 5, 6, and 7

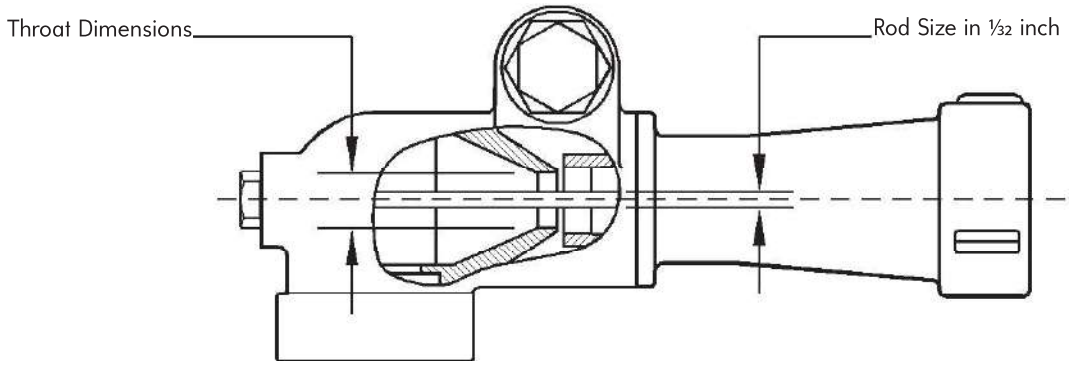
Table 5. Mixer Throat Dimensions

Mixer Size	Throat Dia. Inches	Throat Area Sq. Inches
4037 #	0.156	0.019
4031 #	0.209	0.034
3065-0	0.375	0.110
3065-1	0.438	0.150
3065-2	0.594	0.277
3065-3	0.719	0.406
3065-3-S	0.844	0.559
3065-4	0.906	0.645
3065-4-S	1.000	0.785
3065-5	1.063	0.887
3065-5-S	1.250	1.227
3065-6	1.281	1.289
3065-6-S	1.594	1.995
3065-7	1.750	2.405
3065-7-S	2.188	3.758
3065-8	2.750	5.940
3065-8-S	3.313	8.618
3065-9	3.688	10.680

Table 6. Mixer Rod Dimensions

Rod Size	Rod Area Square Inches	Rod Size	Rod Area Square Inches
0	0.000	**24**	0.442
4	0.012	**26**	0.518
5	0.019	**28**	0.601
6	0.028	**30**	0.690
7	0.038	**32**	0.785
8	0.049	**34**	0.887
9	0.062	**36**	0.944
10	0.077	**38**	1.108
11	0.093	**40**	1.227
12	0.110	**44**	1.485
13	0.130	**48**	1.767
14	0.150	**52**	2.074
15	0.173	**56**	2.405
16	0.196	**60**	2.761
17	0.222	**64**	3.142
18	0.249	**68**	3.547
20	0.307	**72**	3.976
22	0.371	**80**	4.909

The 4031 and 4037 are small mixers commonly used for small premix pilot tips.



Mixer Orifice Area = Throat Area - Rod Area

Table 7. Available Rod Sizes

Mixer	Rod Part Numbers = 3065-_-_RA																
3065-0	0	5	6	7	8	9											
3065-1	0*	4	5	6	7	8	9	10	11								
3065-2	0*	4	5	6	8	9	10	11	12	13							
3065-3	0*	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3065-4	0*	5	6	7	8	10	11	12	13	14	15	16	17	18			
3065-5	0*	6	8	9	10	12	13	14	15	16	17	18					
3065-6	0*	6	7	9	10	12	13	14	15	16	18	20	22	24			
3065-7	0*	4	10	12	14	15	16	18	20	24	26	28	30	32	34*	36*	38*
3065-8	0*	15	16	20	24	28	32	36	40*	44*	48*	52*	56*	60*	64*	68*	72*
3065-9	0	24	32	40	48	56	64	72	80								

Rod Sizes #15 and smaller are solid, #16 (1/2"Ø) and larger are tubular.
The "0" size is a plug only.
*These rods are available with a centerline observation port.
To order a mixer with an observation port add "OP" to the part number. **Example: 3065-7-S36OP**
To order a Rod only with observation port ad "OP" to the part number. **Example: 3065-8-68RAOP**

Part List 3065 Aspirator Mixers - Table 8

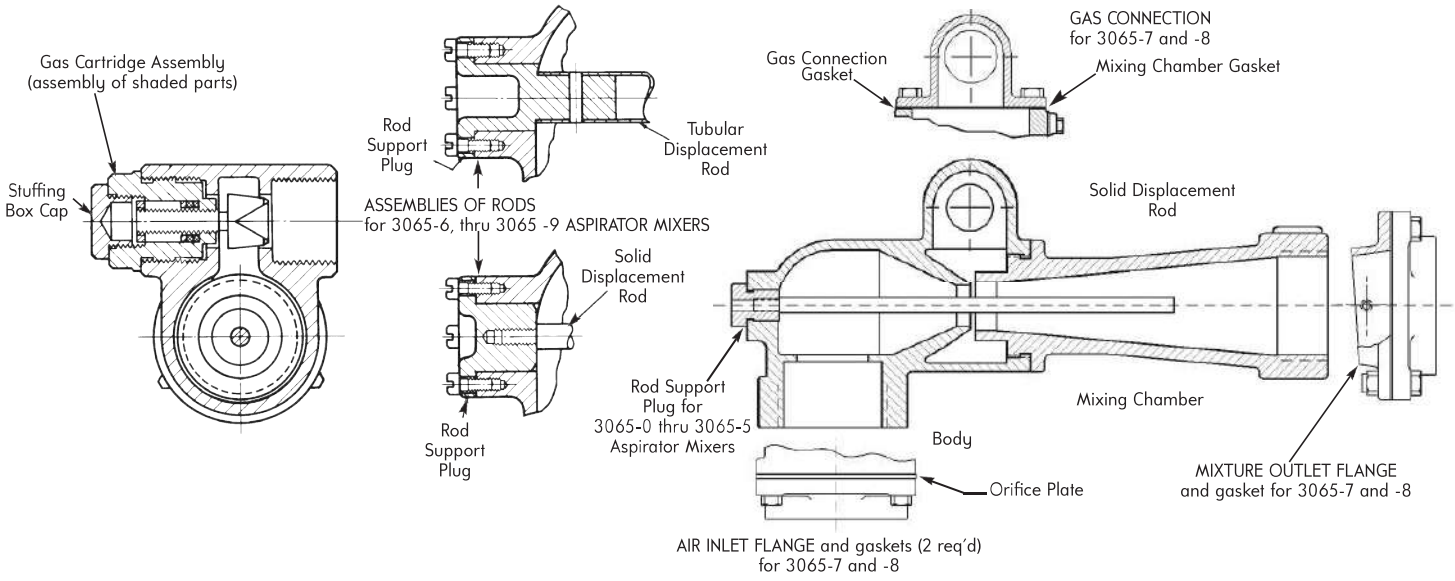


Table 8. 3065, 3065- -S and 3065- -K (All Iron/Steel) PARTS LIST

Part Name	Mixer designation 3065-0 3065-0-K	3065-1 3065-1-K	3065-2 3065-2-K	3065-3 3065-3-K	3065-4 3065-4-K	3065-5 3065-5-K	3065-6 3065-6-K	3065-7 3065-7-K	3065-8 3065-8-K	3065-9 3065-9-K
Body (3065)	4-1452-2	4-0762-2	4-0787-2	4-0789-3	4-0791-3	4-0793-3	4-0796-4	4-1147-1	4-1137-4	4-2305-1
Body (3065- -S)	—	—	—	4-0789-4	4-0791-4	4-0793-4	4-0796-5	4-1147-2	4-1137-2	—
Displacement Rod and Support Nut Assembly	Order by specifying, "3065-(code size)-(rod size RA)." *Example*: 3065-1-5RA -- Rod Size #5. Rod size is its diameter in thirty-seconds of an inch. (For the nut only, specify 3065-1-0RA), #16 (½") and larger "rods" are tubes. Rods are not available without nuts. See below for rod sizes available for each size mixer.									
Displacement Rod Plug Gasket	—	—	—	—	—	—	4-31531-1	4-31520-1	4-31530-3	4-32909-1
Flange/Air Inlet (Sq.)	—	—	—	—	—	—	—	2-2310-7	2-2310-8	—
Gasket/Air Inlet (Sq.) 2 req'd	—	—	—	—	—	—	—	4-31521-3	4-31521-4	—
Flange/Mixture (Round)	—	—	—	—	—	—	—	2-0855-1	2-0471-1	—
Gasket/Mixture (Round)	—	—	—	—	—	—	—	4-31522-2	4-31522-3	—
Gas Cartridge Assembly										
(3065)	4-6062-0	4-6062-1	4-6062-2	4-6062-3	4-6062-4	4-6062-5	4-6062-6	4-6062-7	4-6062-8	†
(3065- -K)	4-6065-0K	4-6065-1K	4-6065-2K	4-6065-3K	4-6065-4K	4-6065-5K	4-6065-6K	4-6065-7K	4-6065-8K	—
O-Ring ‡ (Viton)	R520-4166-V	R520-4207-V	R520-4428-V	R520-4428-V	R520-4430-V	R520-4309-V	R520-4436-V	R520-4440-V	R520-4447-V	—
Cap‡ (3065)	4-6085-1	4-6086-1	4-6086-1	4-6086-1	4-6086-1	4-6086-1	4-6087-1	4-6087-1	4-6087-1	—
Cap‡ (3065- -K)	4-6085-2	4-6086-2	4-6086-2	4-6086-2	4-6086-2	4-6086-2	4-6087-2	4-60872	4-6087-2	—
Gas Connection	—	—	—	—	—	—	—	4-1148-3	4-1145-3	—
Gas Connection Gasket	—	—	—	—	—	—	—	4-31523-1	4-31523-2	4-32909-2
Mixing Chamber (3065)	4-0910-1	4-0759-1	4-0788-1	4-0790-1	4-0792-1	4-0794-1	4-0797-1	4-1144-3	4-1138-5	4-1886-1
Mixing Chamber (3065- -S)	—	—	—	4-0790-2	4-0792-2	4-0794-2	4-0797-2	4-1144-4	4-1138-4	—
Mixing Chamber Gasket	—	—	—	—	—	—	—	4-31519-1	4-31529-1	4-31557-1
Orifice Plate (3065)	—	—	—	—	—	—	—	4-1151-1	4-1154-2	—
Orifice Plate (3065- -S)	—	—	—	—	—	—	—	4-1154-3	—	—
Observation port (-OBS)	—	8790-01	8790-01	8790-01	8790-01	8790-01	8790-01	R530-2028	R530-2028	—
Observation port holder (-OBS)	—			OA4-2445-3			4-54573-1	4-54573-2	4-54573-3	—

† Gas adjustment for 3065-9 Mixer is an 1122-7-F Limiting Orifice Gas Valve -- mixer price includes valve. 3065-9 price does not include companion flanges.
‡ Included in Gas Cartridge Assembly, or can be ordered separately.

3065 or -S Rod Only Part Numbers = 3065- __ - __RA
(Mixer not included)
- For use in mixer size (0 -9_)
- Rod sizes (0 - 80 see Table 4 on Sheet 3065-2_dims-pl)

Aspirator Mixer Identification Guide

The intent of this section is to help people identify North American 3065 aspirator mixers. There are a number of things to know about North American product designations, and markings on castings.

1. Numbers cast into North American products are usually not product numbers. They are casting part numbers which are often used for multiple products, and machined differently.

2. Most North American products have a four digit product number. If the product is available with different capacities the number will be followed by a dash and a second one or two digit number (like 3065-3). The product is a 3065 and the capacity size is a -3. Extra characters in a product designation denote other options.

3. North American products prior to the 1970's had only two or three digit product numbers, the 3065 mixers were originally known as "65" mixers.

4. The North American capacity code is based on the air inlet pipe size:

-0 = ¾" pipe	-1 = 1" pipe	-2 = 1¼" pipe
-3 = 1½" pipe	-4 = 2" pipe	-5 = 2½" pipe
-6 = 3" pipe	-7 = 4" pipe	-8 = 6" pipe
-9 = 8" pipe		

For -10 and above the "-" size equals the air inlet size in inches. Normally only even numbers are used.

5. Knowing the pipe size and using the dimension sheets are very helpful for identifying mixers, but sometimes there are multiple sizes with the same pipe size code.

Example: 3065-7-S mixers have higher capacity than 3065-7 mixers, but the only way to know the difference is to examine the mixer for and "S" stamp or measure the throat dimension.

4014 PILOT with INTEGRATED 3065 MIXER

4014 gas boosted pilots are supplied with an integrated 3065 mixer. Instead of a displacement rod there is a hollow gas tube that supplies raw boost gas to the center of the pilot, which lengthens the pilot flame. They are available in pilot sizes from 1¼" to 2½". Note that the 4014-3-BT and 4014-4-T sizes use special modified 3065 mixers, while the smaller sizes use standard 3065 mixers.

Table 9.

4014 Pilot Designation	4014 Pilot Exit Thread Size	Mixer Designation	Mixer Inlet Thread Size
4014-1-T	1¼	3065-1	1
4041-2-AT	1½	3065-2	1¼
4014-3-AT	2	3065-3	1½
4014-3-BT	2	3065-4-#3	2
4014-4-T	2½	3065-4-#2	2

For more information see the following product bulletins:
Sheet 4014

4014-4-T pilot ready to ship

Aspirator Mixer Identification

— The 4-#### number cast into the mixers are casting identification numbers, which can be machined internally to different sizes. So these numbers alone do not always identify the mixer size, see table below.

— The product number "3065" or "65" and the North American pipe code is cast into the side close to the air pressure tap.

— "S" type 3065 mixers are machined with larger interior orifices to provide higher premix capacities. They should have an "S" stamped after the 3065 or 65 cast numbers, but the most reliable way to determine if a 3065 is an "S" type is to measure the air throat diameter.

3065-5

3065-3-S

3065-Mixer displacement rods: Mixer displacement rods are used to fine tune the capacity of the 3065 mixers.

— Rods have a number stamped on the mounting nut or flange which represents the rod diameter in 32nd's of an inch.

— A "0" stamped on the rod mounting means there is no displacement rod attached.

Table 10.

Mixer Designation	Body Casting Number	Gas Connection Casting Number	Mixing Chamber Casting Number	Gas Cartridge*/Valve Casting Number	Body Casting Throat Diameter	Inlet Orifice Diameter
3065-0	4-1452	4-910	—	—	0.375	5/8"
3065-1	4-762	4-759	—	—	0.438	13/16"
3065-2	4-787	4-788	—	—	0.594	1"
3065-3	4-789	4-790	—	—	0.719	1¼"
3065-3-S	4-789	4-790	—	—	0.844	1 47/64"
3065-4	4-791	4-792	—	—	0.906	1⅝"
3065-4-S	4-791	4-792	—	—	1.000	1⅝"
3065-5	4-793	4-794	—	4-931	1.063	1 15/16"
3065-5-S	4-793	4-794	—	4-931	1.250	2⅝"
3065-6	4-796	4-797	—	4-1459	1.281	2 13/32"
3065-6-S	4-796	4-797	—	4-1459	1.594	3.23"
3065-7	4-1147	4-1144	4-1148	4-1364	1.750	3 5/32"(plate)
3065-7-S	4-1147	4-1144	4-1148	4-1364	2.188	3¼"(plate)
3065-8	4-1137	4-1138	4-1145	4-1468	2.75	4¾"(plate)
3065-8-S	4-1137	4-1138	4-1145	4-1468	3.313	No Plate
3065-9	None	None	—	2-3805	3.688	No Plate

Note: *Some gas cartridge castings do not have visible identifying numbers.

3/4" 4000 Series Pilot Mixer Identification

Pilot mixers are small aspirator mixers used to supply an air/gas premix to a burner pilot. Multiple pilots tips are sometimes feed from a single 3065 aspirator mixer, but it is more common and reliable to feed small 3/4" pilot tips with a single small 3065 or a 4000 series pilot mixer.

For more information see the following product bulletins:
— Bulletin 4011/4021
— Sheet 4031-1

4031 ¾" pilot mixer, it has the following characteristics:
— ¾" NPT air inlet labeled "AIR"
— ¾" NPT premix outlet labeled with an arrow showing flow direction
— ⅜" NPT gas inlet labeled "GAS"
— ⅛" NPT pressure taps for air inlet and outlet premix pressures
— A slotted screw and locking nut for gas adjustment
— The classic round NA logo with a flame
— The text "PILOT MIXER" and "4-6131"
— The 4-6131 number is a casting identification number

The 4031 is the most popular North American pilot mixer, and is suitable for use with all North American ¾" premix pilot tips when cross-connected to a pilot regulator like the 7350.

The mixers below are obsolete and can be replaced with the 4031

4035-01 / 4031V-01 ¾" pilot mixer:
— ½" NPT air inlet labeled "AIR"
— ½" NPT premix outlet labeled with an arrow showing flow direction
— ⅜" NPT gas inlet labeled "GAS"
— A red rectangle tag with the text "4035" and "PILOT MIXER"
— On one side the text "NORTH AMERICAN MFG. CO."
— On the other side the text "CLEVELAND OHIO"
— The casting identification part number "4-3337"
— The "4035V-01" type has a screw to adjust gas flow

4035-02 / 4035V-02 / 152 / 153 ½" pilot mixer:
— ⅜" NPT air inet labeled "AIR"
— ½" NPT premix outlet labeled with and arrow showing flow direction
— ¼" NPT gas inlet labeled "GAS"
— On one side the text "NORTH AMERICAN MFG. CO."
— On the other side the text "CLEVE OHIO"
— The "4035V-02" type has a screw to adjust gas flow
— The casting identification part number "4-2729"

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