

## AIR AMPLIFIERS

Blowoff, clean, cool and dry as well as vent and exhaust with no moving parts

### WHAT ARE THEY - REASONS TO USE

Air Amplifiers or “Air Movers” are a simple, inexpensive device with virtually no maintenance that can convey fumes, smoke, light weight materials, and move a high volume of air for cooling, blowoff and drying applications. They use the “coanda effect” which entrains a large amount of surrounding air using only a small amount of compressed air. The effect is an amplification of up to 17 times the airflow or more (depending on the size) with reduced noise levels. Using only compressed air, the output flow and vacuum is easily controlled by adjusting or opening the air gap and/or inlet pressure. Either end of the amplifier may be ducted to address all kinds of applications from bringing in fresh air into an area to removing nasty fumes. Be wary of extremely high unrealistic or unsubstantiated amplification ratios claimed by some companies.

### TYPES OF AIR AMPLIFIERS



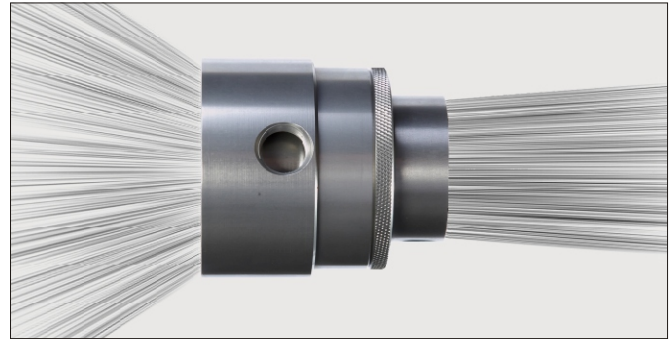
**FIXED X-STREAM® AIR AMPLIFIER:** made of zinc die cast system is solid and perform as well or better than many supposedly patented designs when used in similar applications. The gap can be adjusted by adding shims. Five sizes are available.



**ADJUSTABLE AIR AMPLIFIER:** made of anodized aluminum or stainless steel for high temperature or food applications. The customer can set the gap and lock it in place using a lock ring. Three sizes are available.

### SPECIAL DESIGNS

Special designs are available to meet unique customer specifications. Specially treated stainless steel units have been made for a specific medical application and threaded adjustable versions have been made for a machine builder. Different materials can be provided as well as special sizes to fit any specific application.



### AIR AMPLIFIER FEATURES:

- ▶ No moving parts.
- ▶ Compact design, simple, lightweight and portable.
- ▶ Driven by air not electricity.
- ▶ Replaces fans used for blowoff, cleaning, drying, cooling and conveying.
- ▶ High airflow amplification.
- ▶ Instant on-off, no electricity or explosion hazard.

### AIR AMPLIFIER BENEFITS:

- ▶ Longer life in difficult environments than competitive models.
- ▶ Lower compressed air consumption than ejectors and venturi.
- ▶ Maintenance free with output easily controlled, safe to use.

### AIR AMPLIFIER ADVANTAGES OVER FANS:

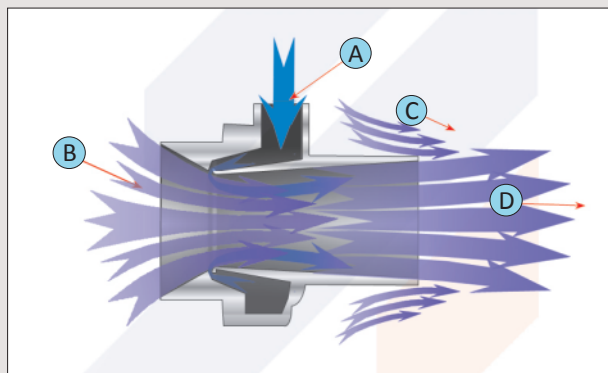
- ▶ Compact design, simple, lightweight and portable.
- ▶ Driven by air, not electricity for safety.
- ▶ No moving parts hence safer and maintenance free.
- ▶ Each end can be ducted for light conveying applications.

### SELECTION

Whether you choose a fixed or adjustable unit depends on the application. The fixed unit being made of heavy duty zinc die cast is more ideal in rough environments where corrosion is not an issue. The aluminum Adjustable Air Amplifiers are light-weight and flexible because of being adjustable. Stainless steel adjustable units are meant for corrosive environments and for food/pharmaceutical applications.

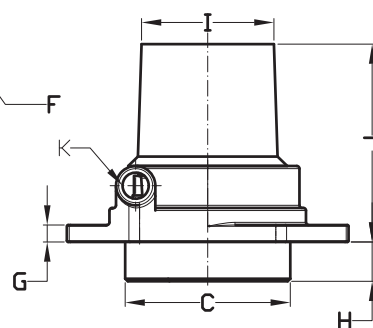
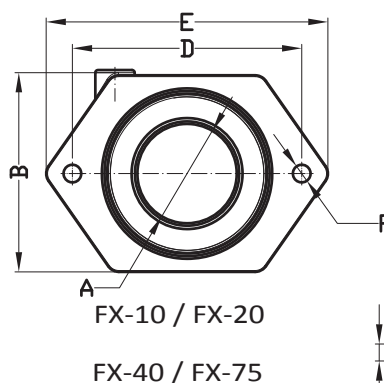
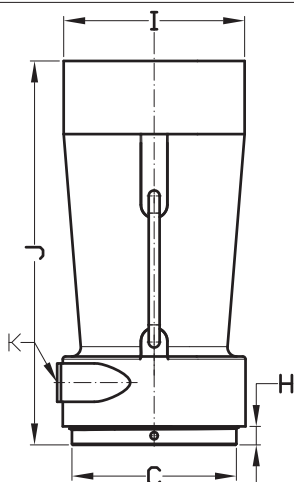
## FIXED X-STREAM® AIR AMPLIFIERS - HOW IT WORKS:

A small amount of compressed air enters the annular chamber at point (A). That is then throttled through a small ring nozzle at high velocity and into the inside of the Amplifier over a “coanda” profile. The compressed air stream clings to the “coanda” profile as it enters the inside walls of the amplifier and thereby creating a vacuum that induces the outside air at point (B). Converting the pressure into amplified airflow. The amplified airflow leaves at the exit at point (C). Airflow is further amplified downstream at point (D). By entraining additional air from the surroundings at the exit.



AMPLIFIERS-RATIOS (APPROX.)	Sound Level (dBA) at 80 PSIG (5.5 BAR)
Model FX10: 6.5:1	Model FX10: 72 dBA
Model FX20: 14:1	Model FX20: 79 dBA
Model FX40: 15:1	Model FX40: 89 dBA
Model FX75: 15:1	Model FX75: 80 dBA

MODEL NO.	A Inches (MM)	B Inches (MM)	C Inches (MM)	D Inches (MM)	E Inches (MM)	F Inches (MM)	G Inches (MM)	H Inches (MM)	I Inches (MM)	J Inches (MM)	K (NPT)
FX10	0.40"	1.30"	0.99"	1.89"	2.24"	0.19"	0.16"	0.59"	0.75"	1.59"	1/8"
	(10.16)	(33.1)	(25.2)	(48)	(57)	(4.8)	(4)	(15)	(19)	(40.4)	
FX20	0.81"	1.86"	1.50"	2.39"	3.03"	0.27"	0.20"	0.59"	1.27"	2.16"	1/4"
	(20.6)	(47.2)	(38)	(60.8)	(76.9)	(6.8)	(5)	(15)	(32.2)	(54.8)	
FX40	1.59"	3.15"	2.93"	3.54"	4.18"	0.29"	0.24"	0.79"	2.03"	2.84"	3/8"
	(40.4)	(80)	(74.5)	(90)	(106.1)	(7.4)	(6.2)	(20)	(51.6)	(72.2)	
FX75	2.98"	5.91"	4.96"	6.89"	8.46"	0.53"	0.51"	1.18"	3.98"	5.94"	1/2"
	(75.8)	(150)	(126)	(175)	(215)	(13.5)	(13)	(30)	(101)	(151)	



**PERFORMANCE CHARTS**
**Compressed Air Consumption (Based on gap of 0.002" (.05mm)\*) Consumption in SCFM (SLPM)**

MODEL	INLET PRESSURE						SOUND LEVEL @ 80 PSIG (5.5 BAR)
	20 PSIG (1.4 BAR)	40 PSIG (2.8 BAR)	60 PSIG (4.1 BAR)	80 PSIG (5.5 BAR)	100 PSIG (6.9 BAR)	120 PSIG (8.4 BAR)	
<b>FX 10</b>	2.2 (62.3)	3.4 (96.3)	4.3 (121.8)	4.9 (138.8)	5.8 (164.2)	6.1 (172.7)	<b>72 dBA</b>
<b>FX 20</b>	4.3 (121.8)	6.1 (172.7)	7.5 (212.4)	9.3 (263.3)	11.0 (311.5)	11.8 (334.1)	<b>79 dBA</b>
<b>FX 40</b>	8.0 (226.5)	11.3 (320.0)	15.0 (424.8)	19.3 (546.5)	25.1 (710.8)	26.0 (736.2)	<b>79 dBA</b>
<b>FX 75</b>	16.5 (467.2)	23.2 (657.0)	29.7 (841.0)	37.0 (1047.7)	44.0 (1245.9)	47.0 (1330.9)	<b>80 dBA</b>

**PRESSURE vs. VELOCITY AT OUTLET Ft/min (m/sec)**

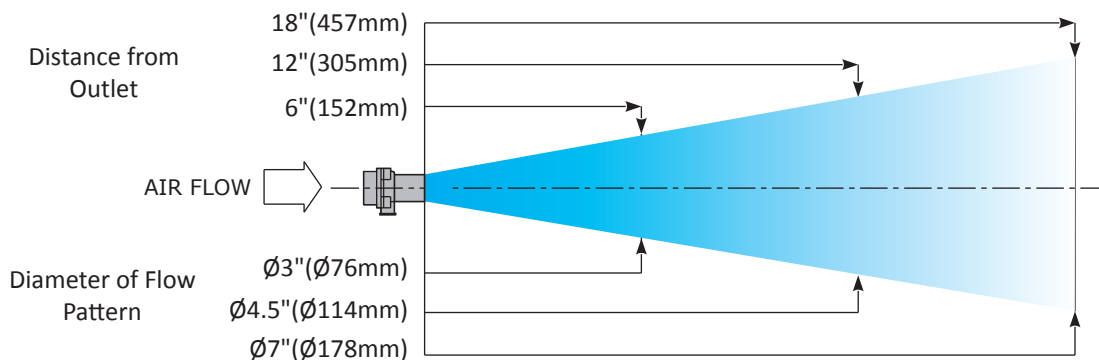
MODEL	INLET PRESSURE						SOUND LEVEL @ 80 PSIG (5.5 BAR)
	20 PSIG (1.4 BAR)	40 PSIG (2.8 BAR)	60 PSIG (4.1 BAR)	80 PSIG (5.5 BAR)	100 PSIG (6.9 BAR)	120 PSIG (8.4 BAR)	
<b>FX 10</b>	9000 (45.72)	14000 (71.12)	16500 (83.82)	18500 (93.98)	20300 (103.124)	22000 (111.76)	<b>72 dBA</b>
<b>FX 20</b>	9000 (45.72)	14500 (73.66)	18200 (92.456)	21000 (106.68)	23200 (117.856)	25000 (127)	<b>79 dBA</b>
<b>FX 40</b>	6000 (30.48)	10000 (50.8)	13500 (68.58)	16200 (82.296)	18400 (93.472)	20200 (102.616)	<b>79 dBA</b>
<b>FX 75</b>	2800 (14.224)	4600 (23.368)	5950 (30.226)	6850 (34.798)	7550 (38.354)	7900 (40.132)	<b>80 dBA</b>

**PRESSURE vs. VELOCITY AT 12" FROM OUTLET for all sizes  
except FX10 which is 6" FROM OUTLET Ft/min (m/sec)**

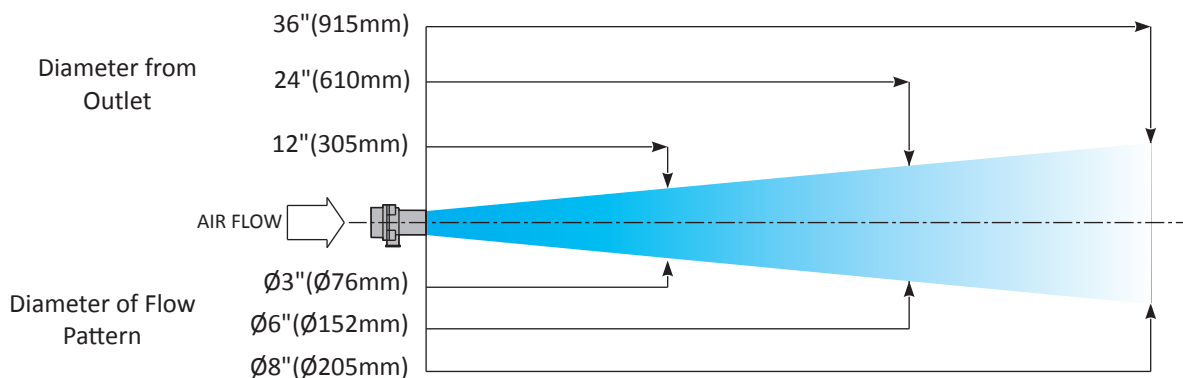
MODEL	INLET PRESSURE						SOUND LEVEL @ 80 PSIG (5.5 BAR)
	20 PSIG (1.4 BAR)	40 PSIG (2.8 BAR)	60 PSIG (4.1 BAR)	80 PSIG (5.5 BAR)	100 PSIG (6.9 BAR)	120 PSIG (8.4 BAR)	
<b>FX 10</b>	1000 (5.08)	1430 (7.2644)	1650 (8.382)	1800 (9.144)	1900 (9.652)	1980 (10.0584)	<b>72 dBA</b>
<b>FX 20</b>	1400 (7.112)	2350 (11.938)	2870 (14.5796)	3200 (16.256)	3400 (17.272)	3600 (18.288)	<b>79 dBA</b>
<b>FX 40</b>	1850 (9.398)	2850 (14.478)	3500 (17.78)	4000 (20.32)	4380 (22.2504)	4700 (23.876)	<b>79 dBA</b>
<b>FX 75</b>	1550 (7.874)	2300 (11.684)	2750 (13.97)	3150 (16.002)	3300 (16.764)	3450 (17.526)	<b>80 dBA</b>

**FLOW PROFILES**

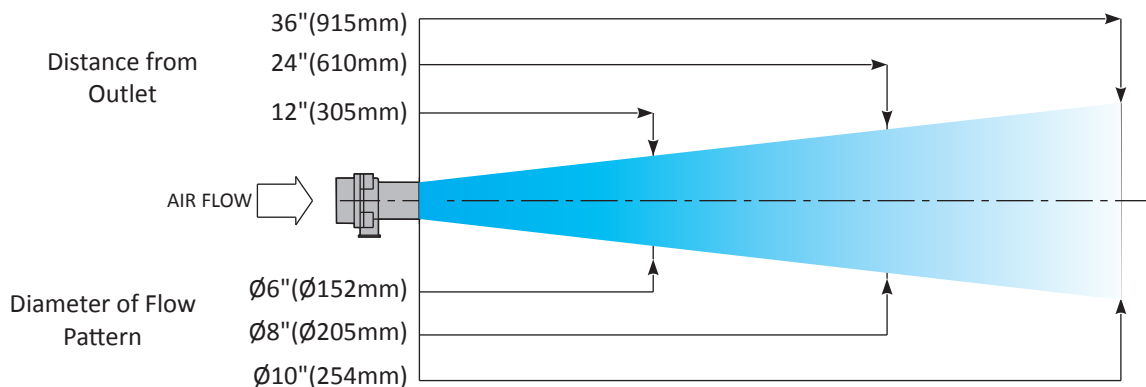
**MODEL FX 10**



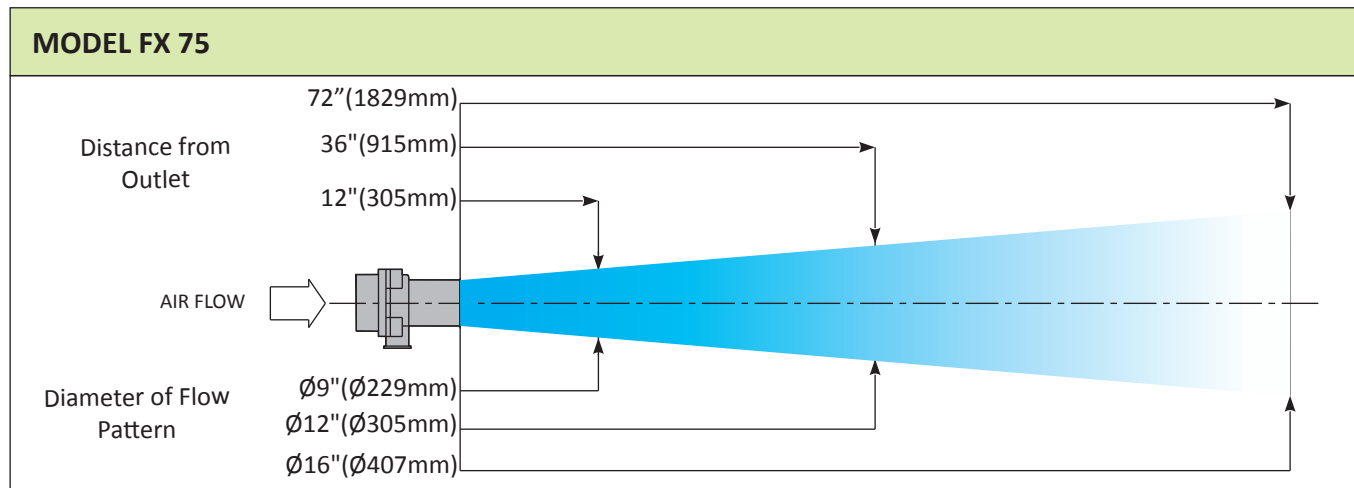
**MODEL FX 20**



**MODEL FX 40**



## FLOW PROFILES



## SOUND LEVELS

MODEL	FX 10	FX 20	FX 40	FX 75
<b>SOUND LEVEL @ 80 PSIG (5.5 BAR)</b>	72 dBA	79 dBA	79 dBA	80 dBA

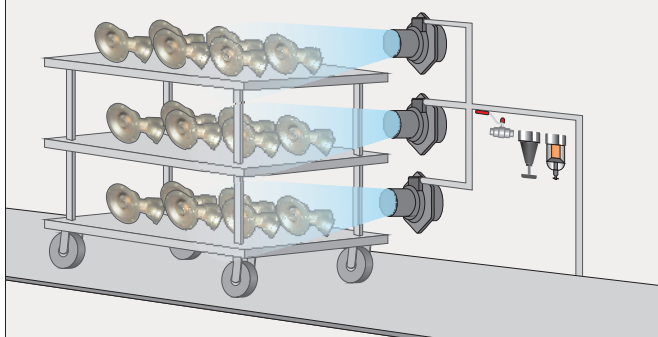
**FIXED X-STREAM™ AIR AMPLIFIERS**

PART NO.	DESCRIPTION
FX10	3/4" Zinc Alloy Amplifier
FX20	1-1/4" Zinc Alloy Amplifier
FX40	2" Zinc Alloy Amplifier
FX75	4" Zinc Alloy Amplifier
FX125	8" Zinc Alloy Amplifier
FX10-1	3/4" Amplifier plus Filter with Auto Drain
FX20-1	1-1/4" Amplifier plus Filter with Auto Drain
FX40-1	2" Amplifier plus Filter with Auto Drain
FX75-1	4" Amplifier plus Filter with Auto Drain

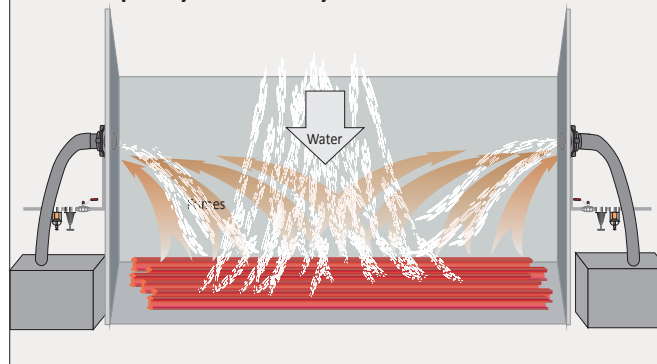
FX10-2	3/4" Amplifier plus Filter with Auto Drain plus Regulator with Gauge
FX20-2	1-1/4" Amplifier plus Filter with Auto Drain plus Regulator with Gauge
FX40-2	2" Amplifier plus Filter with Auto Drain plus Regulator with Gauge
FX75-2	4" Amplifier plus Filter with Auto Drain plus Regulator with Gauge

SH10-2	Stainless Steel Shim, .002" for FX10
SH10-3	Stainless Steel Shim, .003" for FX10
SH20-2	Stainless Steel Shim, .002" for FX20
SH20-3	Stainless Steel Shim, .003" for FX20
SH40-2	Stainless Steel Shim, .002" for FX40
SH40-3	Stainless Steel Shim, .003" for FX40
SH75-2	Stainless Steel Shim, .002" for FX75
SH75-3	Stainless Steel Shim, .003" for FX75

**Using Model FX20 Air Amplifiers to cool castings, cooling time was reduced by 20%**

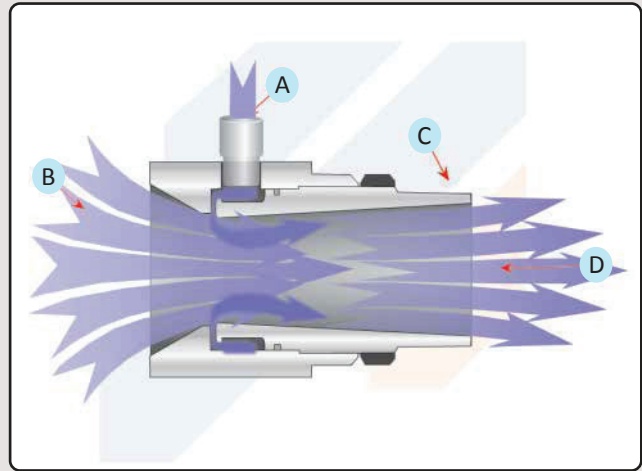


**Two Model FX40 Air Amplifiers vent fumes from a tank quickly & efficiently**



## ADJUSTABLE AIR AMPLIFIER - HOW IT WORKS:

A large volume of surrounding air is induced into the Amplifier at point (A) by the action of a small amount of compressed air which enters the annular chamber at point (B) that is then throttled through a small ring Nozzle at high velocity and into the inside of the Amplifier over a coanda profile. The compressed air stream clings to the coanda profile as it enters the inside walls of the Amplifier and thereby creating a vacuum that induces the outside air converting the pressure into amplified airflow. The amplified airflow leaves at the exit at point (C). Airflow is further amplified downstream at point (D) by entraining additional air from the surroundings at the exit.



## ADJUSTABLE AIR AMPLIFIER SPECIFICATIONS:

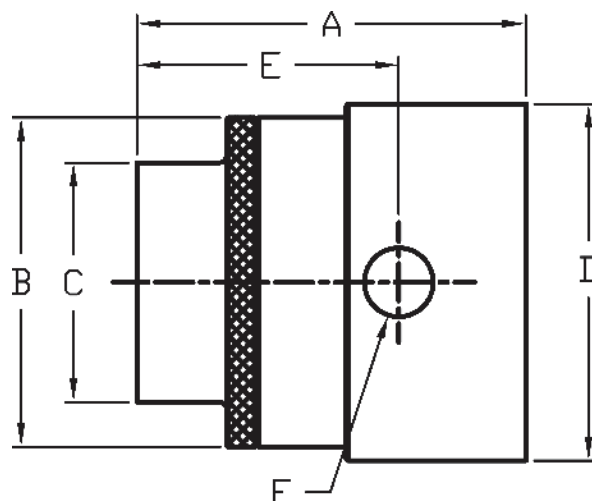
Normally set to .002" (.05mm) gap if greater air force is required, the gap is adjustable. The first two sizes of adjustable air amplifiers come in two versions – unmarked regular versions and marked to gauge the gap setting from 0 to 1.5 mm.

Adjustable Air Amplifier Ratios (approx.):	Sound Level (dBA) at 80 PSIG (5.5 BAR)
Models 40000 and 40000S: <b>10:1</b>	Model 40000, 40000S : <b>78</b>
Models 40001, 40001G, 40001S: <b>15:1</b>	Model 40001, 40001G, 40001S : <b>81</b>
Models 40002, 40002G, 40002S: <b>16:1</b>	Model 40002, 40002G, 40002S : <b>82</b>
Models 40003, 40003S: <b>17:1</b>	Model 40003, 40003S : <b>84</b>

Model	A Inches (MM)	B Inches (MM)	C Inches (MM)	D Inches (MM)	E Inches (MM)	F INLET
<b>40000 / 40000S</b>	2.22" (57)	1.25" (32)	.75" (19)	1.5" (38)	1.5" (38)	1/8" NPT
<b>40001 / 40001G / 40001S</b>	2.875" (73)	1.74" (44.2)	1.25" (31.75)	1.98" (50.3)	1.91" (48.4)	1/4" NPT
<b>40002 / 40002G / 40002S</b>	3.25" (82.6)	2.75" (69.85)	2" (50.80)	2.98" (75.7)	2.19" (55.6)	3/8" NPT
<b>40003 / 40003S</b>	5.1" (130)	5.2" (132.6)	4" (101.6)	5.5" (139.7)	3.37" (85.5)	1/2" NPT

\*BSP Threads or Adaptors can be supplied depending on country location.

## ADJUSTABLE AIR AMPLIFIER



## PERFORMANCE CHARTS

### Compressed Air Consumption (Based on gap of 0.002" (.05mm)) Consumption in SCFM. (SLPM)

MODEL	INLET PRESSURE					
	20 PSIG (1.4 BAR)	40 PSIG (2.8 BAR)	60 PSIG (4.1 BAR)	80 PSIG (5.5 BAR)	100 PSIG (6.9 BAR)	120 PSIG (8.4 BAR)
40000 / 40000S	3.2 (91)	5.5 (156)	7.1 (201)	8.9 (252)	9.2 (260)	11.0 (311)
40001 / 40001S	4.5 (127.4)	7.5 (212.4)	10.3 (291.7)	12.5 (354.0)	14.0 (396.4)	17.5 (495.5)
40002 / 40002S	8.0 (226.5)	12.0 (339.8)	16.5 (567.2)	21.5 (608.8)	26.0 (736.2)	30.0 (849.5)
40003 / 40003S	17.5 (495.6)	28.0 (792.9)	36.8 (1042.1)	48.0 (1359.3)	59.5 (1684.9)	67.0 (1897.2)

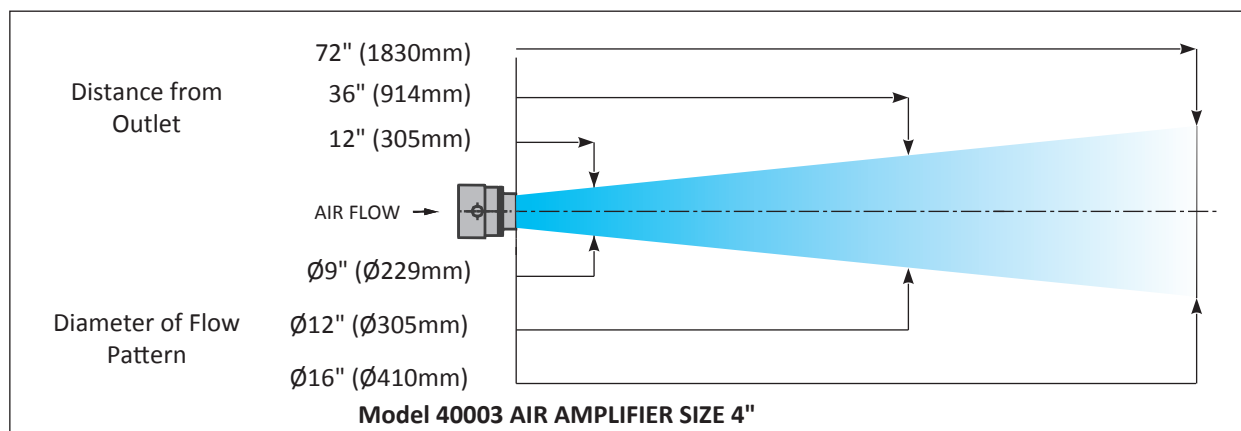
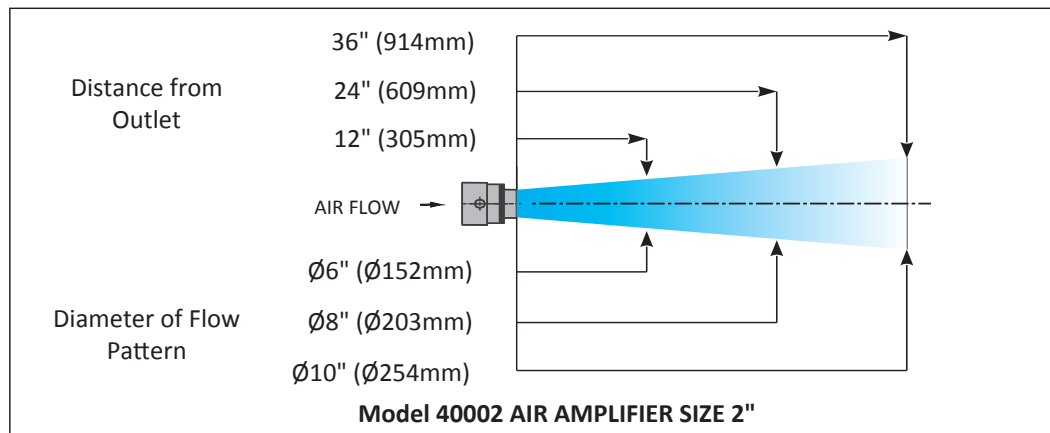
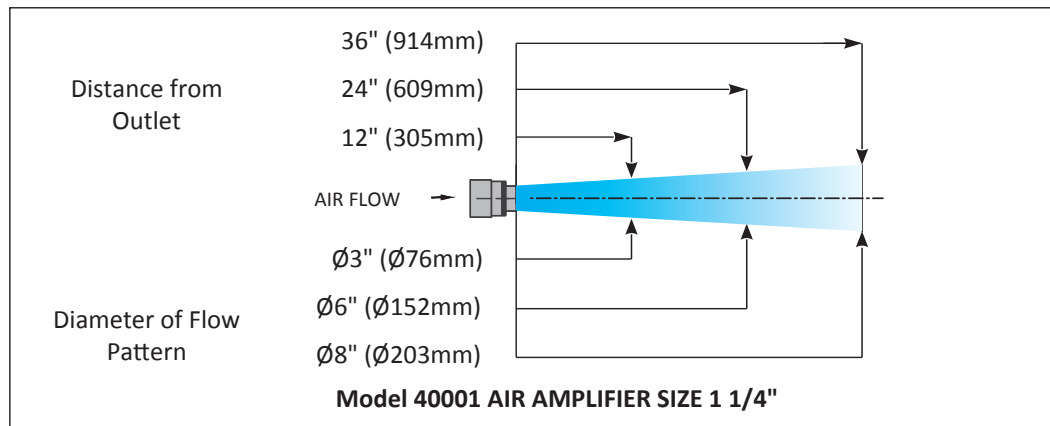
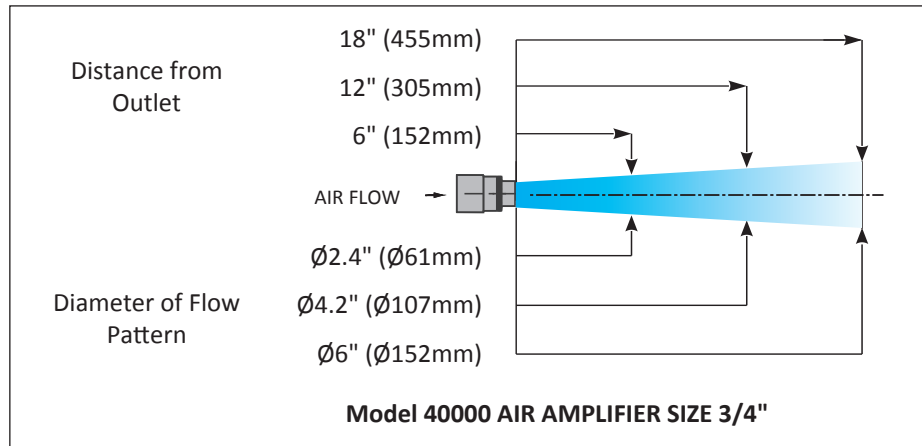
### VELOCITY OF AIR FLOW FROM ADJUSTABLE AIR AMPLIFIERS. Based on Gap setting of .002" (.05 mm) PRESSURE vs. VELOCITY AT OUTLET Ft/min (m/sec)

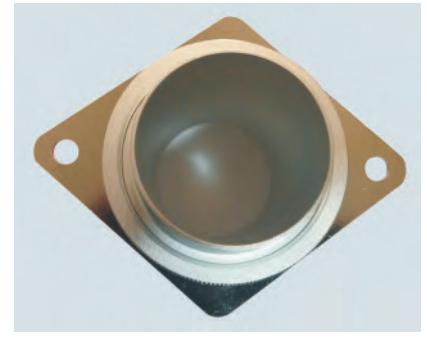
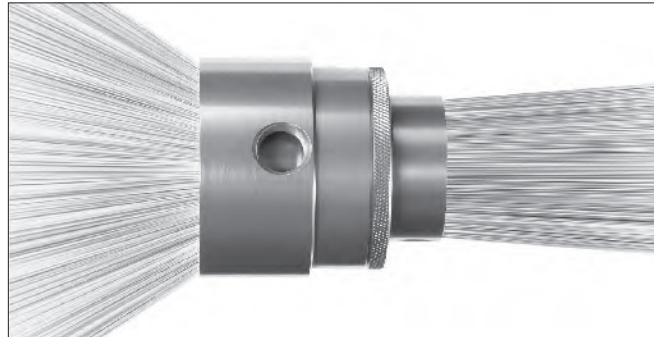
MODEL	INLET PRESSURE					
	20 PSIG (1.4 BAR)	40 PSIG (2.8 BAR)	60 PSIG (4.1 BAR)	80 PSIG (5.5 BAR)	100 PSIG (6.9 BAR)	120 PSIG (8.4 BAR)
40000 / 40000S	11000 (55.88)	16500 (83.82)	18000 (91.44)	21000 (106.68)	23500 (119.38)	25000 (127)
40001 / 40001S	11000 (55.88)	17000 (86.36)	21000 (106.68)	24000 (121.92)	26000 (132.08)	27000 (137.16)
40002 / 40002S	6500 (33.02)	11000 (55.88)	14500 (73.66)	17500 (88.9)	20500 (104.14)	22500 (114.3)
40003 / 40003S	2800 (14.224)	4500 (22.86)	5900 (29.972)	6900 (35.052)	7500 (38.1)	7950 (40.386)

### PRESSURE vs. VELOCITY AT 12" FROM OUTLET for all sizes Ft/min (m/sec)

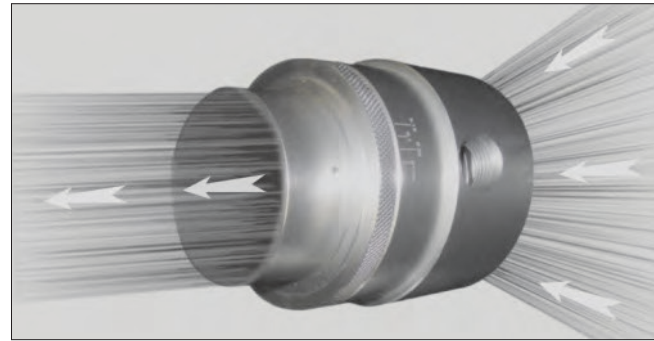
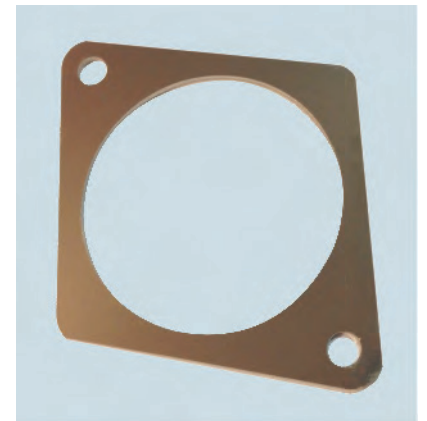
MODEL	INLET PRESSURE					
	20 PSIG (1.4 BAR)	40 PSIG (2.8 BAR)	60 PSIG (4.1 BAR)	80 PSIG (5.5 BAR)	100 PSIG (6.9 BAR)	120 PSIG (8.4 BAR)
40000 / 40000S	1400 (7.112)	1600 (8.128)	2000 (10.16)	2200 (11.176)	2400 (12.192)	2600 (13.208)
40001 / 40001S	1700 (8.636)	2600 (13.208)	3200 (16.256)	3650 (18.542)	3900 (19.812)	4100 (20.828)
40002 / 40002S	2150 (10.922)	3200 (16.256)	3850 (19.558)	4450 (22.606)	4850 (24.638)	5200 (26.416)
40003 / 40003S	1550 (7.874)	2300 (11.684)	2780 (14.1224)	3100 (15.748)	3250 (16.51)	3420 (17.3736)







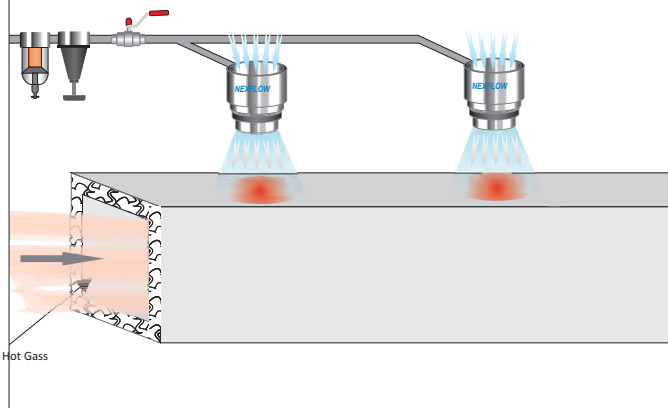
The Adjustable Air Amplifier can be adjusted to provide the blow-off force and/or vacuum required for any particular application. Made of anodized aluminum or stainless steel for corrosive and high temperature applications the unit offers flexibility in applications.



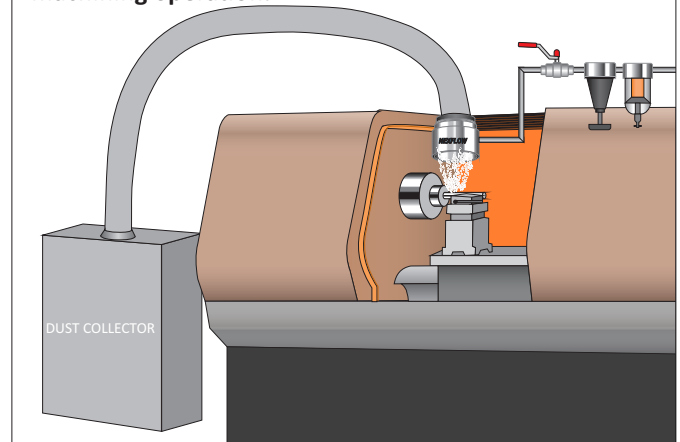
The Gauged Adjustable Air Amplifier with marking to indicate the settings from 0 to 1.5 mm comes in anodized aluminum for applications where accurate gap control is required. As with the regular adjustable unit the gaps are locked into place with a lock ring.

**Adjustable Air Amplifier mounting brackets allow for easy mounting. Available for the 1-1/4" and 2" sizes. Made in Stainless Steel.**

**Model 40002S Stainless Steel Adjustable Air Amplifiers cool hot spots on a duct where insulation has worn away until downtime can be scheduled.**



**Model 40001 Adjustable Air Amplifier vents dust from a machining operation.**



## ADJUSTABLE AIR AMPLIFIERS - ALUMINUM

PART NO.	DESCRIPTION
40000	3/4" Adjustable Aluminum Air Amplifier
40001	1-1/4" Adjustable Aluminum Air Amplifier
40002	2" Adjustable Aluminum Air Amplifier
40003	4" Adjustable Aluminum Air Amplifier
41001	1-1/4" Adjustable Aluminum Amplifier plus Filter with Auto Drain
41002	2" Adjustable Aluminum Amplifier plus Filter with Auto Drain
41003	4" Adjustable Aluminum Amplifier plus Filter with Auto drain
42001	1-1/4" Adjustable Aluminum Amplifier plus Filter with Auto Drain plus Regulator with Gauge
42002	2" Adjustable Aluminum Amplifier plus Filter with Auto Drain plus Regulator with Gauge
42003	4" Adjustable Aluminum Amplifier plus Filter with Auto Drain plus Regulator with Gauge

## ADJUSTABLE AIR AMPLIFIERS - GAUGED SETTINGS

PART NO.	DESCRIPTION
40001G	1-1/4" Adjustable Aluminum Air Amplifier with Gauged Settings
40002G	2" Adjustable Aluminum Air Amplifier with Gauged Settings
41001G	1-1/4" Adjustable Aluminum Air Amplifier with Gauged Settings plus Filter with Auto Drain
41002G	2" Adjustable Aluminum Air Amplifier with Gauged Settings plus Filter with Auto Drain
42001G	1-1/4" Adj. Aluminum Air Amplifier with Gauged Settings plus Filter with Auto Drain plus Regulator with Gauge
42002G	2" Adj. Aluminum Air Amplifier with Gauged Settings plus Filter with Auto Drain plus Regulator with Gauge

## ADJUSTABLE AIR AMPLIFIERS - STAINLESS STEEL

PART NO.	DESCRIPTION
40001S	1-1/4" Adjustable Stainless Steel Air Amplifier
40002S	2" Adjustable Stainless Steel Air Amplifier
40003S	4" Adjustable Stainless Steel Air Amplifier
41001S	1-1/4" Adjustable Stainless Steel Amplifier plus Filter with Auto Drain
41002S	2" Adjustable Stainless Steel Amplifier plus Filter with Auto Drain
41003S	4" Adjustable Stainless Steel Amplifier plus Filter with Auto Drain
42001S	1-1/4" Adjustable Stainless Steel Amplifier plus Filter with Auto Drain plus Regulator with Gauge
42002S	2" Adjustable Stainless Steel Amplifier plus Filter with Auto Drain plus Regulator with Gauge
42003S	4" Adjustable Aluminum Steel Amplifier plus Filter with Auto Drain plus Regulator with Gauge
40001 MTS	Mounting bracket for 40001, 40001G and 40001S
40002MTS	Mounting bracket for 40002, 40002G and 40002S