

Air Knives

Airmasters Energy Saving Air Curtain also known as “Air Knives” provides an efficient laminar sheet of air for wide area cleaning and drying applications. Since Air Knives are a type of air amplifiers, they use a small amount of compressed air to deliver a powerful, high velocity, laminar sheet of air over wide areas such as moving webs, film, sheets, strips, auto bodies and other large assemblies and objects. Airmasters Air Knives are the perfect replacements for drilled or slotted lengths of pipe. In addition, the Air Knives offers up to 70% compressed air savings when compared to the drilled pipes.

Stainless Steel models are ideal for food, pharmaceutical, chemical and other applications where purity, high temperatures or corrosive environments are concerned. Airmaster Air Knives increase thrust and velocity, reduced noise, excellent uniformity, and significantly outperforms any competing, wide blowoff device.

Function

The air knife releases a small amount of compressed air through a very small slot running along its length. The 'air knife' flows down the front of the air curtain, creating a low-pressure area that sucks in the ambient air at a 25:1 ratio, delivering a tremendous airflow onto the target.

When used to replace drilled or grooved tubes that consume enormous volumes of compressed air, the air knife offers compressed air savings of up to 70%. Features

Sr. No.	Features	Description
1	Innovative design	- Delivers 25 :1 air amplification and follows all health and safety regulations - High Air Flow Amplification - Full Flow – Air across entire length of Air Knife - Instant On / Off, No electricity or explosion hazard
2	No moving parts	Low maintenance
3	Customizability	Application-specific adjustment allows for hundreds of different application possibilities
4	Edge design	- Easy to attach - Multiple air Inlet options available, at side and Back
5	Lower noise levels	Radical noise reduction compared to 'open pipe' - up to 50 dBA noise reduction
6	Reduced compressed air consumption	Reduced operating and energy costs
7	Energy saving	- Driven by air not electricity - Can drastically reduce compressed air consumption
8	Various lengths	Available in lengths from 50mm to over 1200 mm



Application

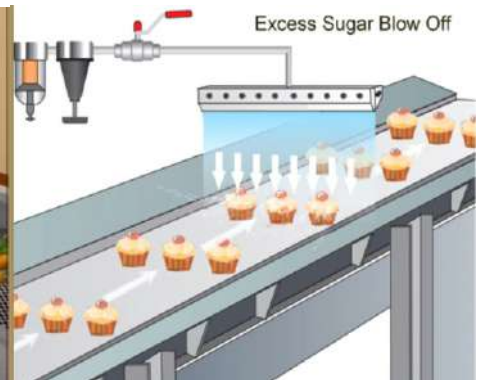
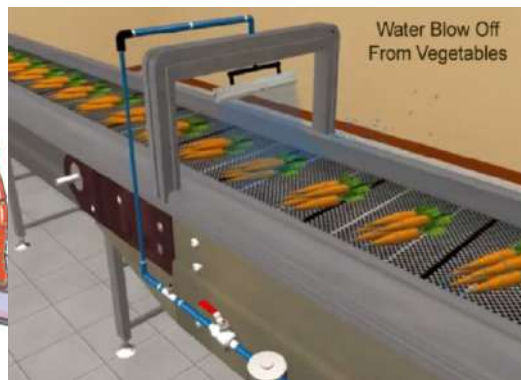
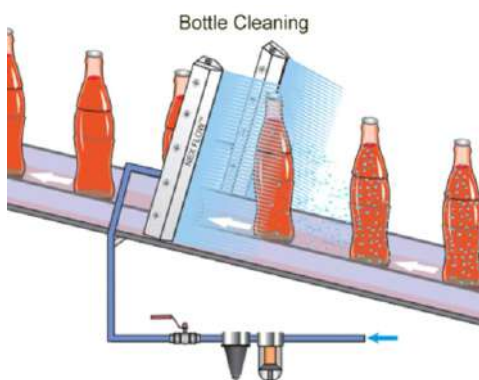
Product Drying - The laminar sheet of air that is created by the Air Curtain is perfect for the drying of a wide variety of components.

Product Cooling - The 25:1 air amplification makes the Air Curtain ideal for any type of cooling.

Product cleaning/Swarf or debris removal - The unique design of the Air Curtain allows it to clean over wide areas.

Following are some of the application of Airmasters Air Knife

- Cleaning of Steel Sheet in strip mills
- Scrap removal
- Water removal from cans
- Circuit Board cooling
- Opening bags for filling
- Parts cooling and drying
- Pre-paint drying and blowoff
- Sheet separation
- Parts drying



General Advantages:

- Longer life in difficult environment than competitive models
- Lower compressed air consumption than drilled pipe or rows of open jets and Nozzles
- Can be placed end to end for continuous airflow
- Maintenance free with output easily controlled, safe to use

Advantages over Blowers:

- Compact Design, simple, lightweight and Portable
- Driven by air, not electricity for safety
- No Moving parts – Hence safer and maintenance free



Use of Shims

Airmaster uses ONLY stainless-steel shims in their Air Knife products as plastic shims wear out over time and require replacement, even with relatively clean air systems. Stainless steel shims are .002" (.050 mm). In most application this is adequate. However, velocity and force can be increased approximately 30% by adding a second .002" (.050 mm) shim. Shims may be stacked up to 5 sets. If using three or more sets however, the air inlets at the "ends" should be used to maintain even flow

along the Air Knife system. Otherwise a slight drop in pressure and flow will occur across from the rear inlet ports if they are used with three or more shims. Note that noise levels and air use will go up with an increased number of shims.

Model Selection:

Model Number	Size	Inlet Pressure PSI	Force lbs	Air Consumption SCFM
AIRMASTERS 02-51mm	2"	72.5	1.04	5.29
AIRMASTERS 03-75mm	3"	72.5	1.11	7.9
AIRMASTERS 04-100mm	4"	72.5	1.35	7.9
AIRMASTERS 06-152mm	6"	72.5	1.59	15.81
AIRMASTERS 09-229mm	9"	72.5	1.86	23.65
AIRMASTERS 12-305mm	12"	72.5	2.14	31.74
AIRMASTERS 15-381mm	15"	72.5	2.44	39.21
AIRMASTERS 18-457mm	18"	72.5	3.08	47.3
AIRMASTERS 20-500mm	20"	72.5	3.78	54.14
AIRMASTERS 24-610mm	24"	72.5	4.56	62.85
AIRMASTERS 30-762mm	30"	72.5	5.28	70.75
AIRMASTERS 36-914mm	36"	72.5	5.5	76.88
AIRMASTERS 42-1067mm	42"	72.5	6.58	82.12
AIRMASTERS 48-1219mm	48"	72.5	7.3	100.65
AIRMASTERS 54-1372mm	54"	72.5	8.55	121.22



AIR KNIFE AIRMASTERS 02-51MM

The AIRMASTERS Air Knife has proven to be of high quality, high performance and one of the most quiet, designs. The AIRMASTERS Air Knife are made of aluminum and coated for long life. Stainless steel models are available for high temperature and corrosive applications. The AIRMASTERS Air knives comes complete with a stainless steel shim to set the air gap and are held together with stainless steel screws. They can also be coupled together using a coupling kit for longer spans.



Blowing force at 5 Bar	1.4 N
Air consumption at 5 Bar	8.5 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodized aluminum or Stainless steel
Shims	Stainless Steel
Dimensions	51 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 1
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 03-75MM

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Blowing force at 5 Bar	2.1 N
Air consumption at 5 Bar	12.7 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodized aluminum or Stainless steel
Shims	Stainless Steel
Dimensions	75 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 1
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 04-100MM

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Blowing force at 5 Bar	3.7 N
Air consumption at 5 Bar	12.7 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodized aluminum or Stainless steel
Shims	Stainless Steel
Dimensions	100 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 1
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 06-152MM

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Blowing force at 5 Bar	4.2 N
Air consumption at 5 Bar	15.4 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	152 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 1
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 09-229MM

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Blowing force at 5 Bar	6.3 N
Air consumption at 5 Bar	38 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	229 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 2
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 12-305MM

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Blowing force at 5 Bar	8.5 N
Air consumption at 5 Bar	51 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	305 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 2
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 15-381MM

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Blowing force at 5 Bar	10.5 N
Air consumption at 5 Bar	63 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	381 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 2
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 18-457MM

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Blowing force at 5 Bar	12.6 N
Air consumption at 5 Bar	76 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	457 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 2
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 20-500MM

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Blowing force at 5 Bar	14.5 N
Air consumption at 5 Bar	87 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	500 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 2
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 24-610MM

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Blowing force at 5 Bar	17 N
Air consumption at 5 Bar	101 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	610 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 2
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 30-762MM

The AIRMASTERS Air Knife has proven to be of high quality, high performance and one of the most quiet, designs. The AIRMASTERS Air Knife are made of aluminum and coated for long life. Stainless steel models are available for high temperature and corrosive applications. The AIRMASTERS Air knives comes complete with a stainless steel shim to set the air gap and are held together with stainless steel screws. They can also be coupled together using a coupling kit for longer spans.



Blowing force at 5 Bar	24 N
Air consumption at 5 Bar	127 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	762 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 2
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 36-914MM

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Blowing force at 5 Bar	25 N
Air consumption at 5 Bar	152 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	914 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 3
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

AIR KNIFE AIRMASTERS 42-1067MM

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Blowing force at 5 Bar	29.4 N
Air consumption at 5 Bar	178 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	1067 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 2
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 48-1219MM

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Blowing force at 5 Bar	33 N
Air consumption at 5 Bar	203 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	1219 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 3
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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AIR KNIFE AIRMASTERS 54-1372MM

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Blowing force at 5 Bar	38 N
Air consumption at 5 Bar	229 Nm ³ /h
Air Amplification	40:1
Sound level at 5 Bar	67dB(A)
Material	Anodised Aluminum, Stainless steel 304 or 316L
Shims	Stainless steel
Dimensions	1372 mm x 44.5 mm x 27.6 mm
Connection type	Female
Back connection	1/4" x 3
Side connections	1/4" x 2
Blowing pattern	Flat
Velocity at 152mm	57 m/s
Max operating pressure	10 Bar

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