AK3000 High Performance Air Knife
AK3200 High Performance Ionizing Air Knife

Troubleshooting and Maintenance

If there is a reduction in flow or force from the Ionizing Air Knife, check the pressure by installing a gauge in one of the unused inlets. Large pressure drops are possible due to undersized lines, restrictive fittings and clogged filter elements.
Refer to the IOM-Installation, Operation & Maintenance manuals that came with the power supply and static bar to troubleshoot those components of the system.

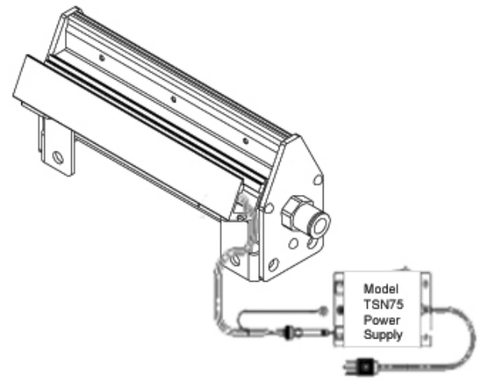
Cleaning

The best method to determine how well the Ionizing Air Knife is working is with the Model SL 1000 Static Meter. The static meter is easy to use and will accurately display the charge on a surface without touching it. To do this, simply measure the charge on the surface before ionizing (power supply and air off). Then, ionize the surface (power supply and air on). Measure the material surface again. A "zero" volt reading indicates that the Ionizing Air Knife is working properly. If a charge is still present, this may indicate the need for cleaning. Keeping the ionizing bar free of moisture and dirt is very important to its effectiveness and life-span. A simple cleaning added to your planned maintenance schedule can eliminate potential performance problems. The frequency of cleaning required will depend upon the environment in which the ionizer is installed. Dirty industrial applications may require periodic cleaning while clean-room applications may require only occasional cleaning. It is important to evaluate the cleaning needs of each individual ionizer installation. A soft bristle brush (a toothbrush works well) should be used to clean the emitter points and channel to remove any particulate. Do not use anything that will bend or dull the emitter points. Do not use any soaps or liquid cleaners that leave a conductive residue. They can destroy the effectiveness of the ionizing bar. A 70% to 90% solution of IPA-Isopropyl Alcohol applied very sparingly (no dripping or puddling of IPA on surfaces) to the toothbrush bristles will help to dissolve built-up contamination on the static bar emitter pins. Likewise, a tiny bit of IPA on a clean rag is ideal for cleaning the flat black plastic surfaces of the static bar running alongside the emitter pins to remove any contamination from this insulative surface.

Never clean an Ionizer with the power on. Periodic cleaning will keep your ionizer operating at peak performance for the life on the unit.

If you have questions or problems, please contact Static Clean at:

Phone: 781-229-7799
Fax: 781-229-4555
E-mail: techsales@staticclean.com



WARNING: The AK3200 Ionizing Air Knife and Power Supply should NOT be used in an Explosive or Flammable Environment.

AK3200 Installation | Operation | Maintenance Manual

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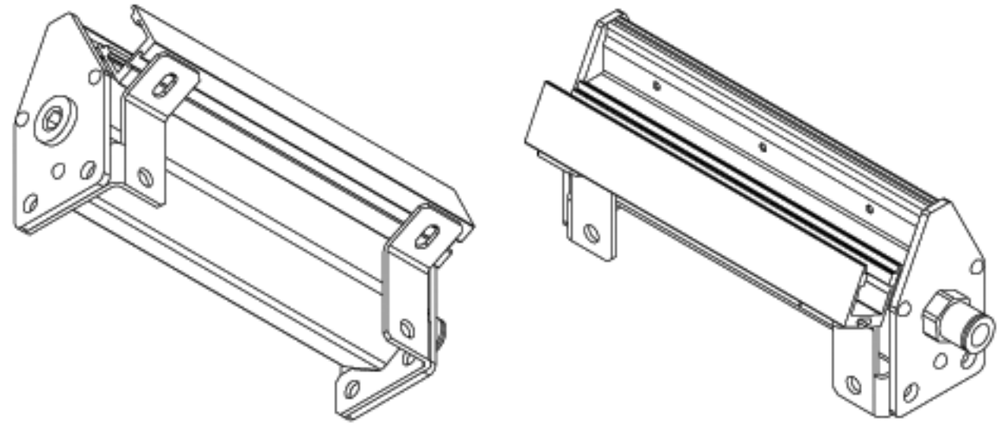


Operations & Installation Manual

AK3000 High Performance Air Knife
AK3200 High Performance Ionizing Air Knife

The AK3000 High Performance Air Knife utilizes innovative technology developed to give the highest performance, lowest noise and lowest air consumption compared to any other product in its class. The powerful, whisper-quiet blade of air is ideal for drying, cleaning or cooling in all kinds of processing and manufacturing applications. Key to it's performance is the flow straightening technology (Patent pending) which provides an exceptionally laminar sheet of air resulting in low levels of turbulence with extremely low noise (65dB).

The AK3200 High Performance Ionizing Air Knife incorporates a BR2200 Shockless Static Bar to neutralize charges on surfaces that can attract and hold contaminants. This safe, easy-to-use technology enhances the cleaning effectiveness of the Air Knife and leaves materials static free so they don't reattract particles after the cleaning process. It also works great as an extended range ionizer, increasing the effective distance of the static bar for applications where physical restrictions require the ionizer to be mounted many inches from the target.

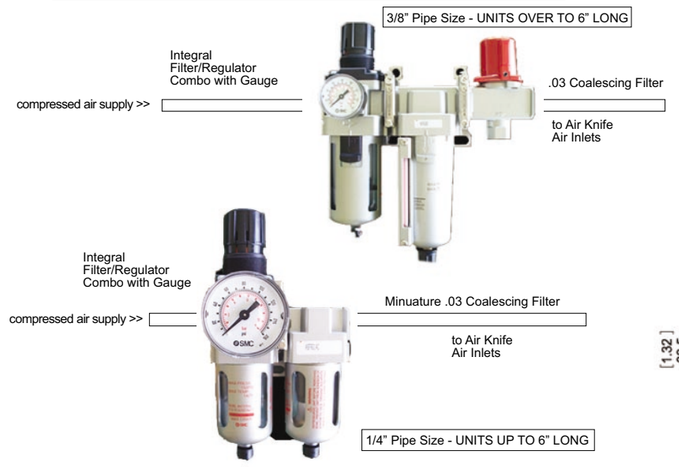
Compressed Air Line Sizes

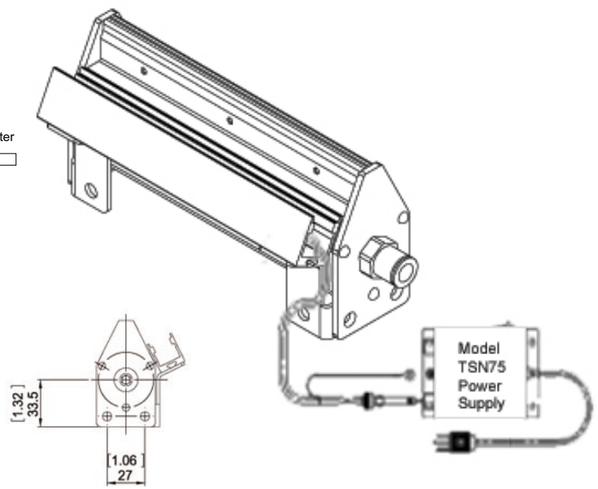
Compressed air lines should be sized to hold pressure drops to a minimum. Do not use restrictive fittings or undersized lines that can "starve" the Air Knife. The following chart shows the recommended infeed pipe size(s). If compressed air hose is used, always go one size larger than the recommended pipe size due to the smaller I.D. of the hose. (Example: consider 1/2" I.D. hose the equivalent of 3/8" pipe.)

Ionizing Air Knife Length	Model No.	Infeed Pipe Size Length of Run		
		10' (3m)	50' (15.2m)	100' (30.8m)
3" (8cm)	AK22003	1/4"	3/8"	1/2"
6" (15cm)	AK22006	1/4"	3/8"	1/2"
12" (30cm)	AK22012	3/8"	1/2"	3/4"
18" (46cm)	AK22018	1/2"	3/4"	1"
24" (61cm)	AK22024	1/2"	3/4"	1"
30" (76cm)	AK22030	3/4"	1"	1"
36" (91cm)	Ak22036	3/4"	1"	1"
42" (107cm)	AK22042	3/4"	1"	1-1/4"
48" (122cm)	AK22048	3/4"	1"	1-1/4"

Compressed Air Supply

The AK3000 Air Knife has compressed air inlets at each end. Lengths 24" (61 cm) and longer should be supplied at both inlets (opposite ends) to maintain a balanced airflow. With proper filtration and separation of dirt, moisture and oil from the compressed air supply, the Air Knife will operate for years without clogging. For Air Knives up to 9" (23cm) long, use the Static Clean Compressed Air System ASFRG14C to filter out contaminates down to 0.03 microns, oil and water. For Air Knives over 9" (23cm) long, use the Static Clean Compressed Air System ASFRG38C. Filters should be used close to each Air Knife, within 10' to 15' (3 to 4.6m) is best. The Air Knife is designed to use clean, dry shop air supplies up to 100 PSIG (6.9 BAR). The integral regulator with each of the above recommended filtration systems allow total control of pressure and force at the Air Knife.





Installing and Using the AK3000 High Performance Air Knife

Choose a location to mount the Air Knife as close to the target as possible without being in the way of operators or moving machine parts. Mounting the Air Knife closer to the target will result in greater blow-off force at lower operating pressure / flow. The further the Air Knife is form the target, the higher the pressure and air consumption required to do the work. Securely install the Air Knife using the (2) mounting holes at each end plate and the included screws with keps nuts (with star washers). You may have to use additional brackets to bridge from the Air knife end plates to the machine frame or a support structure. Install a quality compressed air filtration system, properly sized for the length of the Air Knife, per the recommendation in the 'Compressed Air Supply' section above. For Air Knives less than 24" long, plug the end opposite the air supply with the screw-in plug with O-ring (included). Plumb clean, dry compressed air to the filtration system, then on to the Air Knife port(s) using pipe or tubing per the recommendations in the 'Compressed Air Line Sizes' and 'Compressed Air Supply ' sections above. Push-to-fit air fittings are included for use with tubing for your convenience. Turn on the compressed air and adjust the pressure at the regulator to the lowest pressure setting that will achieve the intended result. Do not default to a high-pressure setting unnecessarily, as this may use more air and create more noise than the job requires, potentially wasting energy.

Installing and Using the AK3200 High Performance Ionizing Air Knife

The Static Clean AK3200 High Performance Ionizing Air Knife comes with a model BR2200 Shockless Static Bar mounted onto the AK3000 High Performance Air Knife via brackets (included). It requires a TSN75 (or similar) power supply (sold separately) to energize the static bar. The AK3200 Ionizing Air Knife should be located at or just after a point where the material has received its static charge. If the treated material is subjected to additional friction downstream, it may build up another static charge requiring additional AK3200 Ionizing Air Knives. The AK3200 Ionizing Air Knife should be placed so that the sheet of air flows across the material to be treated. The ionized air will eliminate the static charge from the surface it touches. Mounting the AK3200 Ionizing Air Knife close to the surface gives the best static elimination. It may be located above or below the material. When the static charge is extremely high or the material is moving at high speeds, it may be necessary to place an AK3200 Ionizing Air Knife on both sides of the material.

Mount the AK3200 Ionizing Air Knife as described in the 'Installing and Using the AK3000 High Performance Air Knife' section above. The (2) mounting holes at each end plate of the Air Knife will be occupied by screws used to secure the Static Bar onto the Air Knife. You can either piggyback onto those screws and/or use the (1) hole at the static bar mounting bracket at each end of the Ionizing Air Knife to secure it to the machine frame or a support structure.See Figure 2 below.

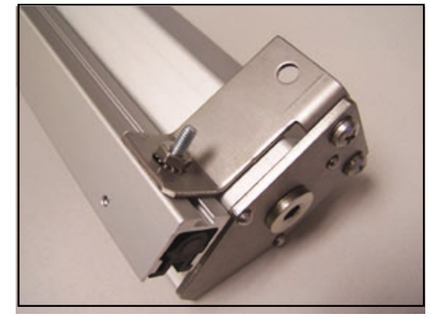


Fig.2

Install the TSN75 (or similar) power supply for the static bar within a few feet of the AK3200 Ionizing Air Knife per the instructions that came with the power supply. The BR2200 Static Bar includes a 72" long shielded HV (high voltage) cable unless a custom length was ordered so be sure the HV cable will easily reach and plug into the power supply when choosing the location for the power supply. Do not connect it to power until the entire installation is complete.

Remove (1) red dust cover from (1) power supply high voltage output port and insert the static bar connector plug with spring into the power supply port. While pushing on the connector plug to compress the spring, turn the threaded connector plug nut clockwise into the output port and finger tighten firmly. Remove the outer (2nd) 8-32 hex nut from the ground stud on the power supply, located between and just beneath the (2) high voltage output ports. Slide the red ring-terminal on the green grounding wire near the static bar connector plug on to the power supply ground stud. Install the outer 8-32 hex nut and tighten. This grounds the high voltage cable shielding jacket and the static bar to the power supply chassis. After the static bar and power supply have been properly installed, positioned and grounded, plug the power supply line cord into a properly grounded 3-wire AC electrical outlet. Be sure the line voltage and frequency supplied matches that specified on the power supply nameplate. For safe and proper operation, the Ionizing Air Knife and Power Supply must be properly grounded. Do not remove the ground prong from the line plug or use a three-to-two prong adapter.