

**Dear IMS Customer,**

**Thank you for your recent purchase of another high quality product from IMS.**

**Attached you will find the Product Manual that will explain product set up, installation and/or maintenance for the equipment your company purchased.**

**We encourage you to call our IMS Technical Service Department at 1-866-467-9001, should any problems arise.**

**We can be reached at 800-537-5375 for IMS Customer Service.**

**Thank you again for choosing IMS to fill your company's need for supplies and technology.**

**Sincerely,**

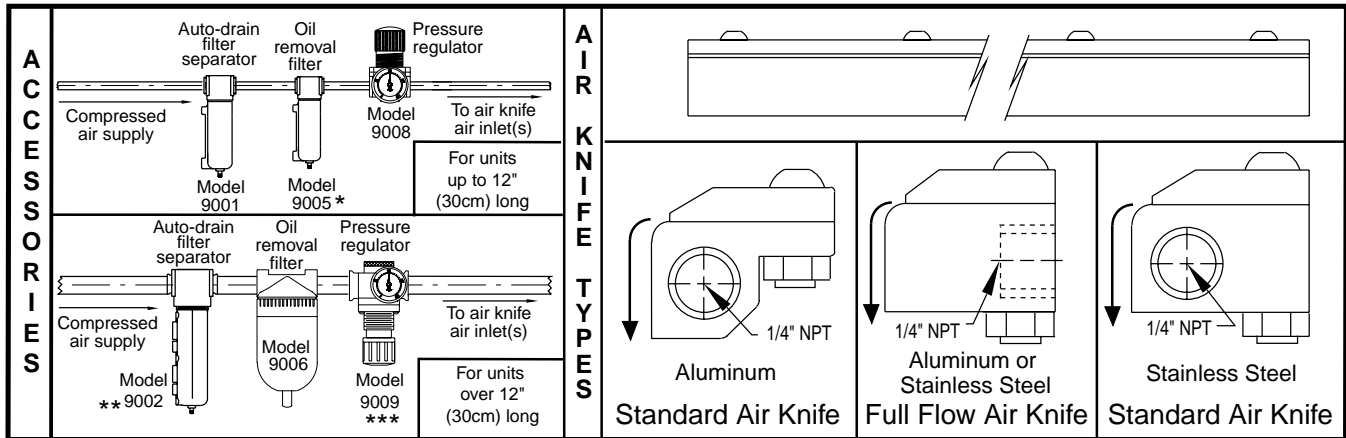
**IMS Company**

**Product** \_\_\_\_\_

**Model** \_\_\_\_\_

**Part Number** \_\_\_\_\_

## STANDARD AIR KNIFE™ INSTALLATION & MAINTENANCE



- \* Use Model 9006 Oil Removal Filter for Air Knives longer than 6" (15cm)
- \*\* Use Model 9032 Auto Drain Filter with 18" to 24" (46-61cm) Air Knives
- \*\*\* Use Model 9033 Pressure Regulator with 18" to 24" (46-61cm) Air Knives

### 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 by causing excessive line pressure drop.

The following chart shows the recommended infeed pipe sizes. If compressed air hose is used, always go one size larger than the recommended pipe size due to the smaller I.D. of hose. (Example: Consider 1/2" I.D. hose the equivalent of 3/8" pipe.)

### AIR KNIFE RECOMMENDED INFEEED PIPE SIZES

Single Air Knife Installation

Air Knife Length	Model Numbers	Infeed Pipe Size Length Of Run		
		10' (3m)	50' (15.2m)	100' (30.8m)
3" (8cm)	2003, 2003SS, 2603, 2603SS	1/4"	3/8"	1/2"
6" (15cm)	2006, 2006SS, 2606, 2606SS	1/4"	3/8"	1/2"
12" (30cm)	2012, 2012SS, 2612, 2612SS	3/8"	1/2"	3/4"
18" (46cm)	2018, 2018SS, 2618, 2618SS	1/2"	3/4"	1"
24" (61cm)	2024, 2024SS, 2624, 2624SS	1/2"	3/4"	1"
30" (76cm)	2030, 2030SS, 2630, 2630SS	3/4"	1"	1"
36" (91cm)	2036, 2036SS, 2636, 2636SS	3/4"	1"	1-1/4"

For 24" (61cm) and longer Air Knives, it is best to supply both ends. The standard gap setting is .002" (.05mm). For larger gap settings, it is best to supply both ends of the Air Knife in order to maintain uniform flow. (see Air Knife Shim Set)

### MANIFOLD SYSTEMS

Sometimes, a long continuous sheet of air is needed. When the required length exceeds the standard Air Knife lengths, they can be manifolded. Stagger the Air Knives front to back, or top to bottom. The following are recommended manifold sizes for various web lengths:

### MANIFOLD AND AIR KNIFE RECOMMENDED INFEEED PIPE SIZES

Multiple Air Knife Installation

Web Width	Min. Manifold Size	Infeed Pipe Size Length of Run		
		10' (3m)	50' (15.2m)	100' (30.8m)
60" (1.52m)	1"	1"	1-1/4"	1-1/4"
84" (2.13m)	1"	1"	1-1/4"	1-1/2"
102" (2.6m)	1-1/4"	1-1/4"	1-1/4"	1-1/2"
120" (3m)	1-1/4"	1-1/4"	1-1/2"	2"

### COMPRESSED AIR SUPPLY

With proper filtration and separation of dirt, moisture and oil from the compressed air supply, the Air Knife will operate for years with no maintenance required.

Use a 10 micron or smaller filter separator on the compressed air supply. Use Model 9001 Automatic Drain Filter Separator for units up to 12" (30cm), Model 9032 for 18" and 24" units and Model 9002 for units larger than 24" (61cm). To prevent problems associated with oil, use an oil removal filter. Use

Model 9005 Oil Removal Filter for units up to 6" (15cm), Model 9006 Oil Removal Filter for units longer than 6" (15cm). The oil removal filter should be used downstream from the automatic drain filter separator. 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 normal shop air supplies up to 100 PSIG (6.9 BAR). For infinite control of flow and force, pressure may be regulated. Use Model 9008 Pressure Regulator for lengths up to 12" (30cm), Model 9033 Pressure Regulator for 18" & 24" (46-61cm) and Model 9009 Pressure Regulator for lengths over 12" (30cm).

### **USING THE AIR KNIFE**

In most cases, the Air Knife will be supported by the compressed air supply pipe. It can be mounted by using the existing bolts (be sure to re-tighten to 7.5 foot pounds for proper performance).

The force (combination of mass flow and velocity) of an Air Knife is reasonably constant up to a 12" (30cm) distance. Force is lower at distances greater than 12" (30cm). However, many applications are successful at 18" (46cm), 24" (61cm) or more.

To increase force, shims may be added to the Air Knife. This will increase mass flow, velocity, and compressed air consumption. See the catalog for ordering shim sets.

The high velocity air stream thickens as it flows away from the Air Knife. At 6" (15cm), it is 2-1/2" (6cm) thick and at a 12" (30cm) distance, 5" (13cm) thick. If the application requires a thin "knife" of air, mount the Air Knife close. This gives a high velocity, thin sheet of air that has lower mass flow. As the distance from the product surface to the Air Knife increases, the thickness of the sheet of air increases, velocity decreases and mass flow increases. By moving the Air Knife up and down, the optimum operating distance may be determined.

### **AIR KNIFE SHIM SET**

Force and flow through the Air Knife may be easily increased by adding shims to open the air gap. The Air Knife is supplied with a .002" (.05mm) thick shim installed. It sets the air slot to a .002" (.05mm) opening. To increase the air gap, use a shim set (shim set is not included with the Air Knife). A shim set includes shims of .001" (.03mm), .003" (.08mm) and .004" (.10mm) thickness for aluminum models or (3) .002" (.05mm) thick shims for stainless steel models.

By changing and stacking them, gaps may be set from .001" to .010" (.03 to .25mm) for aluminum Standard Air Knives and .002" to .008" (.05 to .20mm) for stainless steel. Individual shims are available.

To change shims, remove the assembly nuts and bolts. Inspect the Air Knife and shim to assure no dirt or chips are on matching surfaces or in the plenum chamber. Replace or add a shim(s) and re-assemble. If the force is more than needed, regulate pressure down to match the force to the application requirements.

### **TROUBLESHOOTING & MAINTENANCE**

**If There Is A Reduction In Flow Or Force From The Air Knife**, check the pressure by installing a gage at the inlet of the Air Knife. Large pressure drops are possible due to undersized lines, restrictive fittings and clogged filter elements.

**For replacement or repair filter and regulator parts contact Nimmo Fluid Power at 1-888-646-6097.**

### **CLEANING**

If contaminates have clogged the Air Knife, inspect the unit by disassembling. The Air Knife consists of two component parts and between them is a shim that sets the gap the compressed air exhausts through. This shim is usually .002" (.05mm) thick although thicker shims can be used. Inspect each part for dirt contamination and a possible oil film in the area of the slotted nozzle. Clean each part and reassemble with the shim installed in the correct position.

Occasionally, there is a build up which occurs on the face of the Air Knife as a result of vapors in the atmosphere. Clean this surface with a solvent and a clean rag. To prevent contaminants from getting pushed back into the slot, perform this procedure with a small amount of compressed air passing through the Air Knife.

If you have any questions or problems, please contact an EXAIR Application Engineer at:

1-800-90-EXAIR

Fax: (513) 671-3363

E-mail: [techhelp@exair.com](mailto:techhelp@exair.com)

[www.exair.com](http://www.exair.com)

For more information about this product, visit "Frequently Asked Questions" at [www.exair.com](http://www.exair.com)

**FAQ** at [www.EXAIR.COM](http://www.EXAIR.COM)