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# ADVANTAGES OF AIR CURTAINS

An air curtain is a versatile product which is useful in a variety of domains. It is a multi-utility machine that can be used as a solution for a variety of problems that we face on a daily basis.

Air curtains offer many advantages because of which they are common in many industries and across various segments. Air curtains are available in a variety of sizes and can be installed in various ways to give the desired results. Installing an air curtain in your business is the best move that will mitigate your vast range of concerns.

There are numerous benefits of installing Air curtains in your work areas and these benefits can be categorized into Primary benefits and Secondary benefits.

### **5 Major Primary Benefits of Air Curtains Include:**

- 1. Environmental Separation:** Air curtain forms a barrier that prevents air to cross over to the other side. The outside

environment usually has all kinds of uncomfortable odors and pollutants. It is especially very difficult to prevent bad odors and fumes in areas that are closer to industrial plots, garbage area or treatment plants. By preventing any unwanted infiltration of dust, outdoor odors and pollutants, air curtains help maintain a pleasant environment in the facility.

2. **Temperature Control:** Temperature difference in two areas will naturally create an air transfer between these two areas. Warm air will escape from top of the doorway and will be replaced by cold denser air entering from the bottom side. A greater temperature difference will only result in higher air infiltrations and energy losses. Air curtains prevent this exchange by protecting the conditioned environments in different areas and help control the temperature.
3. **Saves Money:** We all know that inducing a change of temperature requires a lot of money. For example- if we are inducing hot air in the oven, we require burners and fuel to do it. Similarly for cooling the air, we need AHU (Air Handling Units), Chillers or Freezers. Whenever this conditioned air gets wasted or is lost, it results in increasing our overall cost. By providing an effective barrier for conditioned air, Air curtains offer an ideal solution to save your money.
4. **Insect and Pest Control:** Flying insects and bugs can be a nuisance for anyone. The presence of these insects within an area can lead to food contamination, unhealthy conditions and other associated problems. The powerful

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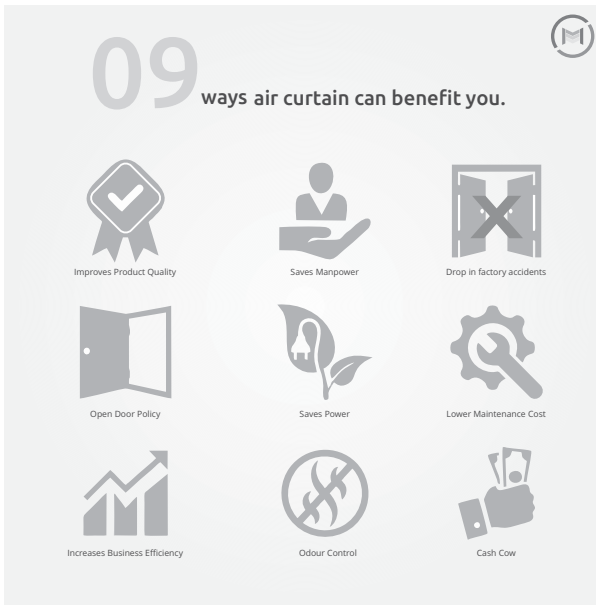


Fig. 10

stream of air produced by an Air Curtain prevents these harmful pests and other flying insects from entering the premises and thereby maintains hygienic and sanitary conditions for everyone.

5. **Works in Extreme Conditions:** Air curtains create an invisible barrier that isolates different temperature zones without hindering the movement of people and products. Many industries use heating appliances or ovens while others use cold storage and other cooling systems. Air curtains work in both the conditions by effectively sealing the area and preventing the air exchange and energy loss.
  - a. **Blast Freezer/Chillers/Cold Storage:** Air curtains are highly beneficial for cold storage as it can greatly

## The complete Guide to Air Curtains

reduce the energy loss by keeping the chilled air in and warm air out with the door open and in use. Air curtains are known to reduce losses by up to 90%.

- a. **Hot Ovens:** Air curtains have proved advantageous for industries using hot ovens and industrial conveyors. They can be used to hold extreme heat and contain hot air inside on the industrial conveyor or oven. This has resulted in fuel savings of up to 40% of the total oven fuel consumption.

Along with the above mentioned primary benefits, there are also 9 other secondary benefits provided by air curtains as mentioned below:

1. **Protects Product Quality:** The protective barrier provided by an Air curtain keeps harmful chemicals away from your valuable products and machinery. This



Fig. 11

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reduction in pollution reduces the wear and tear of parts and other useful machinery and maintains the quality of your product.

2. **Saves Manpower:** Air curtains provide a barrier against airborne dust, pollution, fumes and bad odors. Less dust and pollutants from outside reduce the need for continuous cleaning and maintaining the facility thereby reducing the manpower requirement for the facility. Some places where it can directly impact are retail stores, show rooms etc.
3. **Drop in Factory Accidents:** Closed glass door or doors with obstructions are a potential threat to staff and potential customers. Air curtains provide a risk-free alternative by shielding the premises without obstructing the vision.
4. **Open Door Policy:** An open door is always an invitation to customers and thus, advisable but an open door also invites unwanted particles like dust, insects, bad odors and other pollutants. With an air curtain, you can enjoy all the benefits of an open door without incurring any of its limitations and also save on the manpower costs needed to frequently operate a physical door.
5. **Saves Power:** With Air curtains, energy loss through doorways is drastically reduced. Reduced energy loss decreases the load on existing temperature control systems like air conditioners, heaters or ovens and helps save power.
6. **Lowers Maintenance Cost:** Reduced dust and pollutants ensures the quality of products and since there is a

reduction in leakage of conditioned air, the Duty cycle reduces for the machines. This reduction in Duty Cycle increases the lifespan of air conditioners, chillers, blast freezers and others temperature control machines.

7. **Odor Control:** The steady air stream from an air curtain forms a protective barrier and keeps bad odors out. This helps maintain a clean and hygienic environment that invites more customers and improves the overall image of your brand.
8. **Increase in Business Efficiency:** By avoiding leakage of conditioned air and keeping the mosquitoes and flies away, air curtains help increase the comfort level of both external customers and internal employees. Comfortable environment and satisfied employees result in increasing the overall business efficiency.
9. **Cash Cow:** Air Curtains can be termed as cash cows for a business as they give a steady return on profits that exceeds the money invested in acquiring it. In general air curtains have an ROI of less than 3 months.