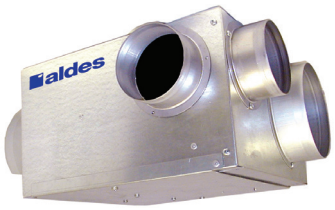
Home Ventilation Systems
One Size Does NOT Fit All

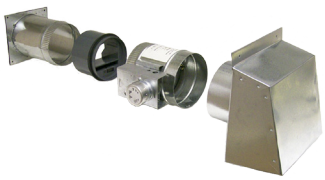
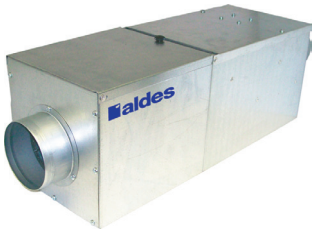
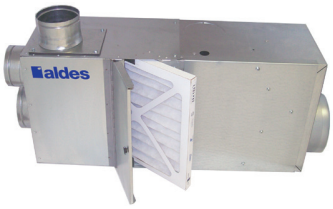
APPLICATION GUIDE

Today's green-home-building revolution is creating quite a bit of confusion when it comes to the important "Indoor Environmental Quality" component and the requirement to include a whole-house ventilation system in energy-efficient homes to ensure proper indoor air quality. Much of the confusion stems from the fact that there are many different ventilation methods, products, and so-called experts touting one solution over the other. There are many factors that determine which ventilation solution is appropriate: climate, building technique, home design, utility cost, occupancy density, building codes, equipment costs, and more.

Claims that one solution fits every application are simply not true. The following tables present a simplified mechanical ventilation guideline for exhaust, supply, and balanced systems.

EXHAUST Removes stale air directly from the source area and draws fresh, dry air into the home, usually through infiltration (leaks in the home's envelope) or dedicated air inlets (AIRLETS™) in the wall or windows.			
PRODUCT:	Ceiling-Mount Exhaust Fan *	Single-Port Exhaust Fan	Multi-Port Exhaust Fan
BEST FOR:	Cold or Dry Climates	Cold or Dry Climates	Cold or Dry Climates
RELATIVE PRICE:	Low	Low/Medium	Medium
PROS:	• Can use one fan for IAQ and single bathroom exhaust	• Can be mounted remotely to reduce noise • Can use one fan for IAQ and bathroom exhaust	• Can be mounted remotely to reduce noise • Can use one fan for IAQ and ALL exhaust ventilation needs (kitchen and bathrooms) • Only one roof or wall penetration for multiple exhaust locations • Improved fresh-air distribution
CONS:	• Noisy • Negative pressure created by fan may result in backdrafting of naturally vented gas appliances • Negative pressure created by fan in humid climates introduces excess moisture, which increases the potential for condensation • Cannot filter incoming air unless AIRLETS™ are used • Poor fresh-air distribution • Multiple roof or wall pentrations (one for each fan)	• Negative pressure created by fan may result in backdrafting of naturally vented gas appliances • Negative pressure created by fan in humid climates introduces excess moisture, which increases the potential for condensation • Cannot filter incoming air unless air inlets are used • Poor fresh-air distribution	• Negative pressure created by fan may result in backdrafting of naturally vented gas appliances • Negative pressure created by fan in humid climates introduces excess moisture, which increases the potential for condensation • Cannot filter incoming air unless air inlets are used

* American Aldes does not sell ceiling-mount bathroom exhaust fans.

SUPPLY Delivers air directly into the home, either through dedicated ducts and/or forced air conditioning systems OR through dedicated duct(s).			
PRODUCT:	Outside Air Duct to AHU to Return Plenum	Filtering Supply Fan	Blending Fan
BEST FOR:	Hot and Dry / Mild Climates	Hot and Dry / Mild Climates	All except extreme cold
RELATIVE PRICE:	Low	Low/ Medium	Medium
PROS:	• Positive pressure can help reduce introduction of unwanted outside air contaminants • Good fresh-air distribution when AHU is operating	• Positive pressure can help reduce introduction of unwanted outside air contaminants and VOCs from attached garages • Direct delivery of outside air into dwelling • Low power consumption • Ability to filter incoming air and accurately control fresh air amounts • Supply air offsets negative pressure caused by kitchen exhaust, dryer exhaust, chimneys, and stack effect	• Same as Filtering Supply fan, but tempers outside air with indoor air before delivering to home • Good fresh-air distriubtion • Supply air offsets negative pressure caused by kitchen exhaust, dryer exhaust, chimneys, and stack effect
CONS:	• Ventilation depends on AHU thermostat (temperature) and is not consistent with IAQ demand • AHU fans consume more power than typical dedicated ventilation fans • Ventilation rate difficult to set-up and control • Outside air not filtered if AHU system only includes filtered return grilles • Use in cold climates can force interior humidity into wall cavities, which condenses and often results in mold growth • Additional exhaust fans are still required	• Use in cold climates can force interior humidity into wall cavities, which condenses and often results in mold growth • Additional exhaust fans are still required	• Use in cold climates can force interior humidity into wall cavities, which condenses and often results in mold growth • Additional exhaust fans are still required

BALANCED Uses two fans to exhaust stale air adn deliver fresh air to the home. Both airstreams pass through a heat exchanger to temper the incoming air and reduce total energy impact of ventilation.		
PRODUCT:	Heat Recovery Ventilator (HRV)	Energy Recovery Ventilator (ERV)
BEST FOR:	Extremely Cold Climates	Hot and Humid Climates
RELATIVE PRICE:	High	High
PROS:	• Saves energy in extreme climates • Tempers outside air before delivering to the home • Should not cause any pressure imbalances (positive or negative) in the home	• Saves energy in extreme climates • Tempers outside air AND reduces outside air humidity before delivering to the home • Should not cause any pressure imbalances (positive or negative) in the home
CONS:	• Energy saved in mild climates is often not enough to offset the energy consumed by the two fan motors in these appliances • More difficult to install and set-up than traditional fans • Requires more maintenance than traditional fans	• Energy saved in mild climates is often not enough to offset the energy consumed by the two fan motors in these appliances • More difficult to install and set-up than traditional fans • Requires more maintenance than traditional fans • Hydroscopic exchange can cause freezing and damage the recovery core in cold climates (unless provisions are made for frost prevention)

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