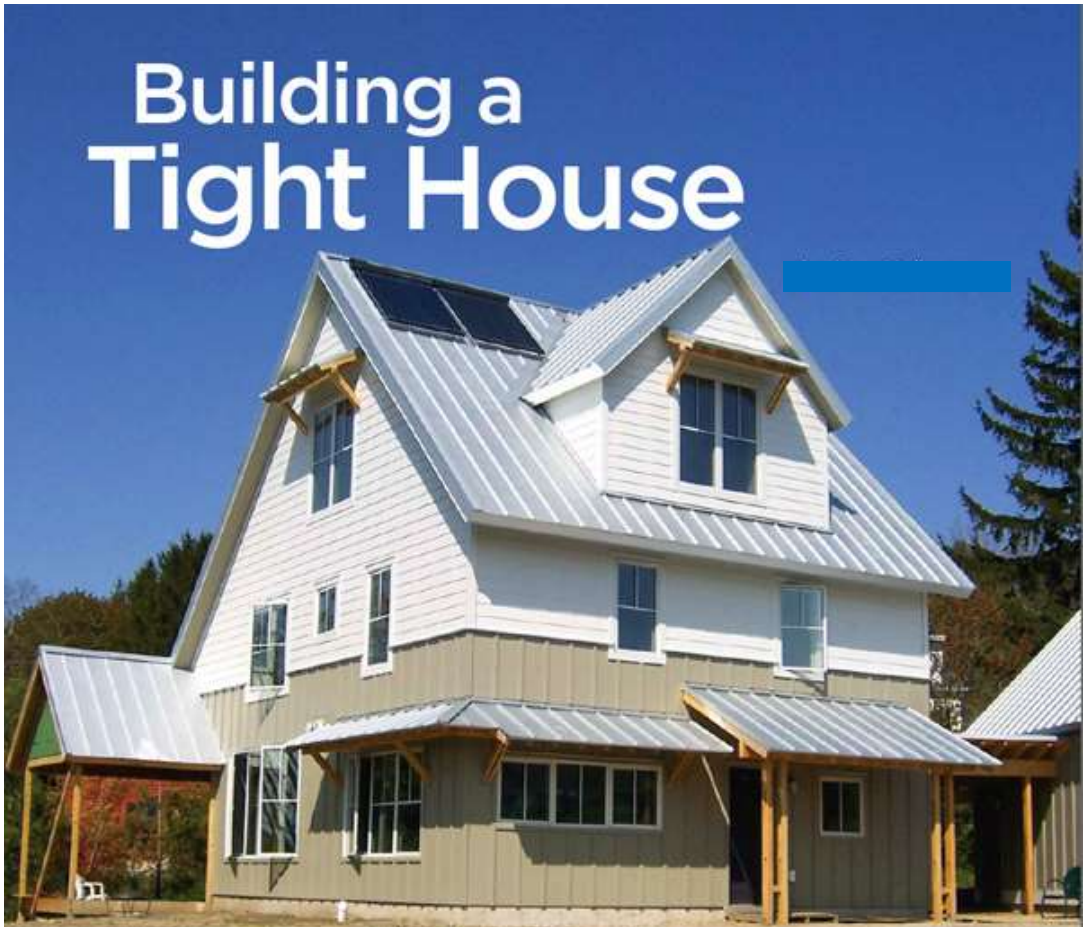
Residential IAQ
Ventilation for Today's Homes

Fantech Fresh Air Appliances

April 17, 2020

fantech®
a systemair company

Ventilation - Why bother?



fantech®
a systemair company

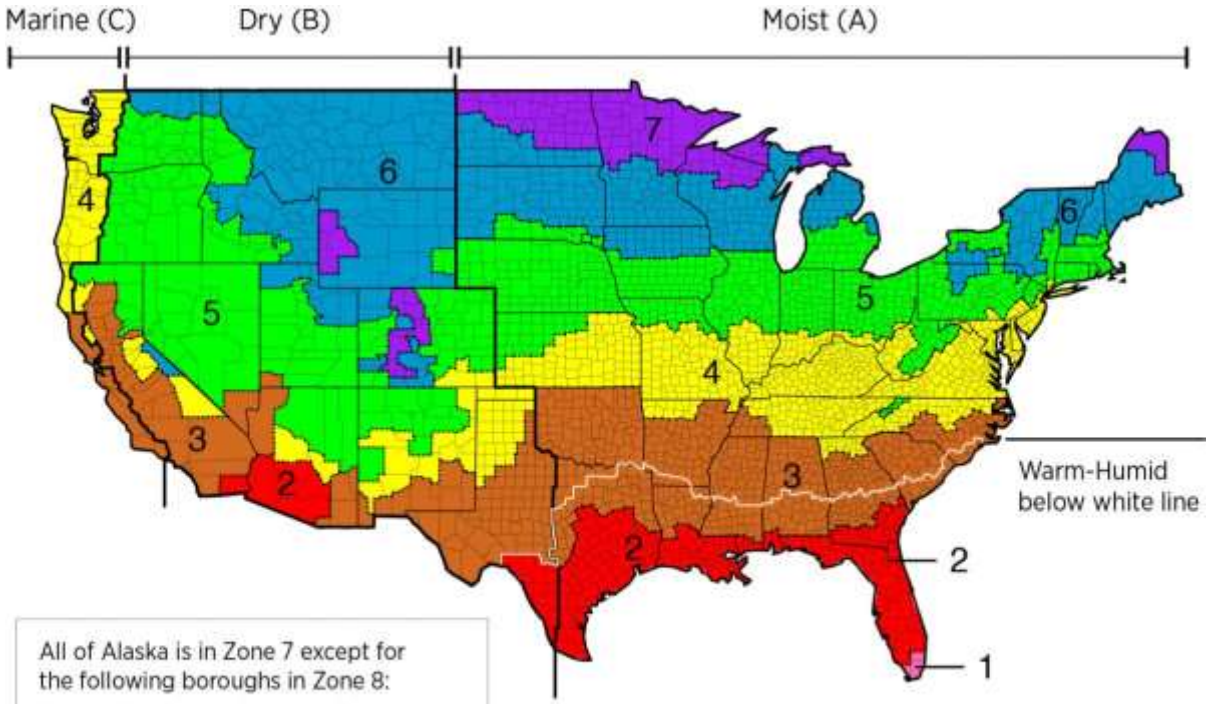

Let’s talk
Indoor Air Quality
#IAQ


Who remembers growing up like this?
< Cool watch kid

90% of our time is spent indoors.

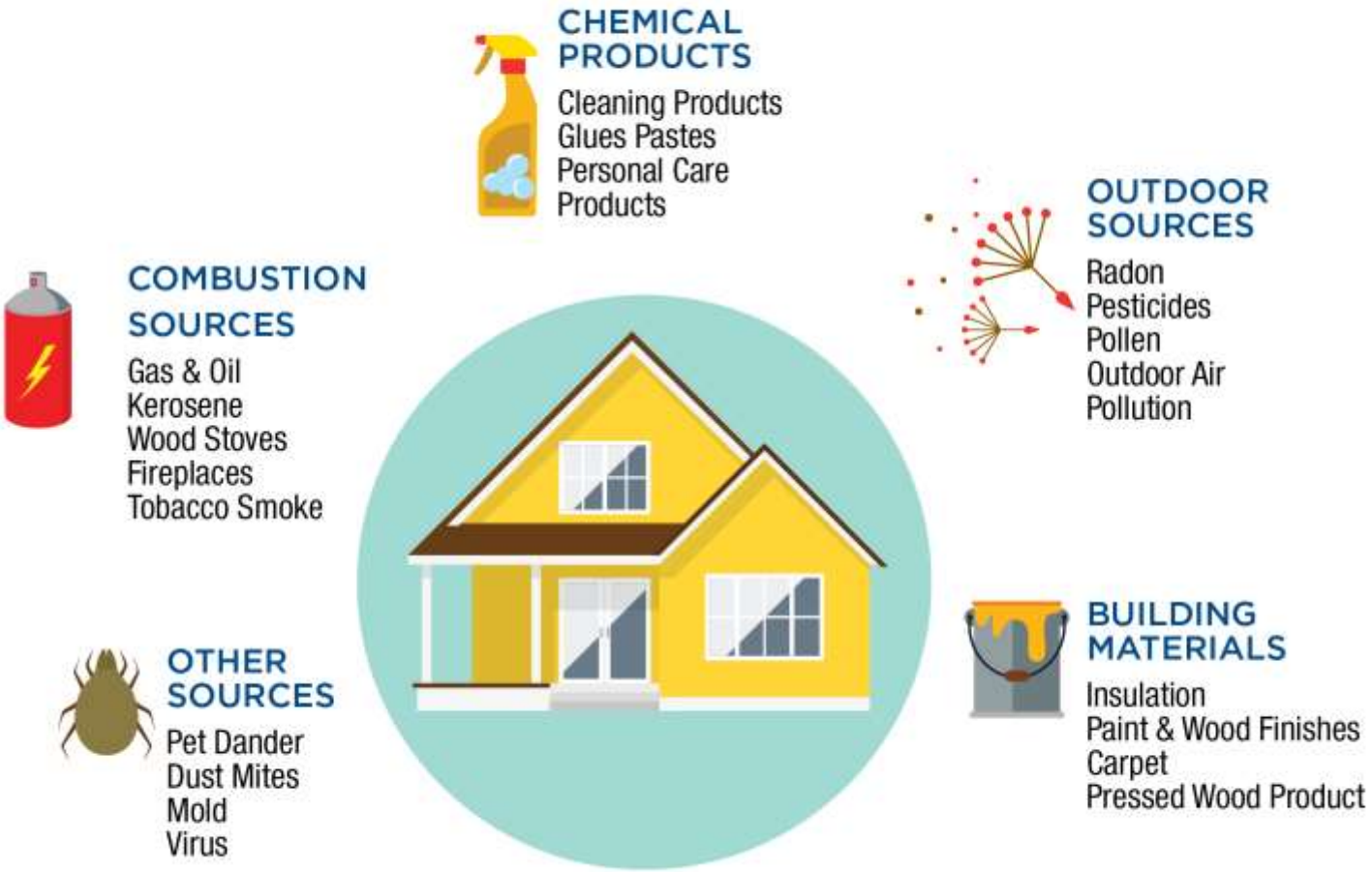
IECC – 2015 R402.4.1.2

Climate Zone	2009 IECC	2012 & 2015 IECC
1-2	< 7 ACH	< 5 ACH @ 50 pascals
3-8	< 7 ACH @ 50 pascals	< 3 ACH @ 50 pascals



fantech®
a systemair company

900 chemicals



fantech®
a systemair company

Dwelling Unit Ventilation

Dwelling Unit Ventilation is dilution ventilation

"The solution to pollution is dilution"

fantech®
a systemair company

50% of illness = Poor IAQ

Headaches, coordination loss

Ear, Nose, Throat issues

Cancer

Vital organ damage

fantech®
a systemair company

IRC Ventilation Requirements

OK – so what ventilation do the codes require?

- Whole-house ventilation
  - Continuous or Intermittent, but operates hourly
  - Based on square footage and # of bedrooms
  - Can double as bathroom exhaust or kitchen range good exhaust
- Bath/toilet room ventilation
- Kitchen range hood exhaust
- Makeup air for cooking exhaust
- Clothes dryer exhaust

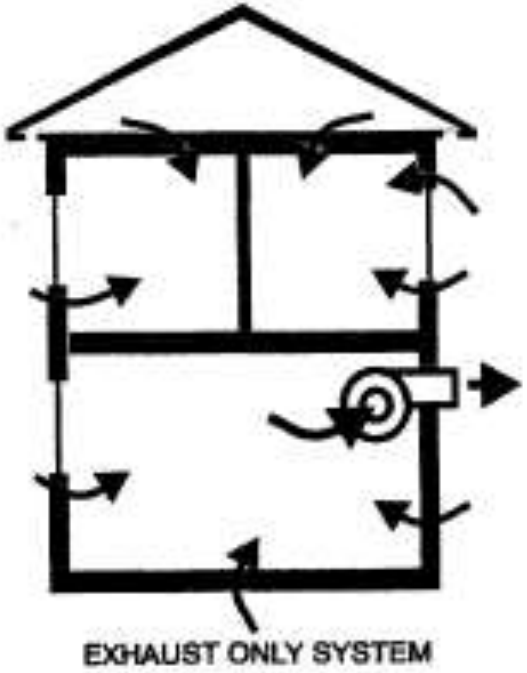
fantech®
a systemair company

Ventilation Strategies

- Exhaust
- Supply
- Combination
- Combination with Heat or Energy Recovery

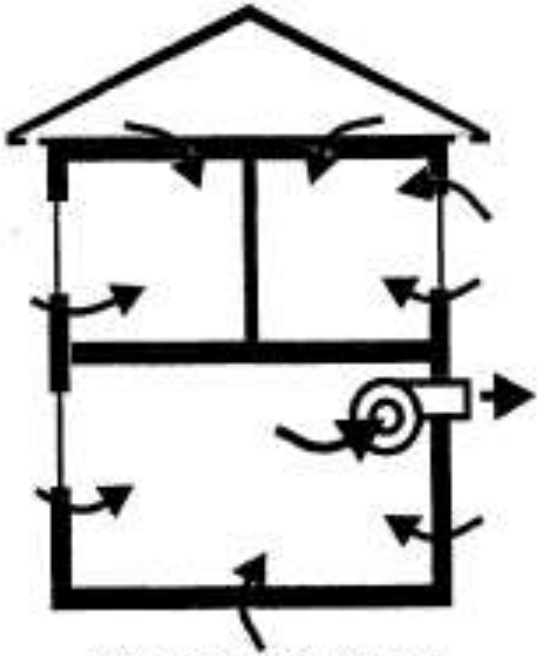
fantech®
a systemair company

Exhaust Only:



ntech®
emair company

Exhaust Only:



Advantages

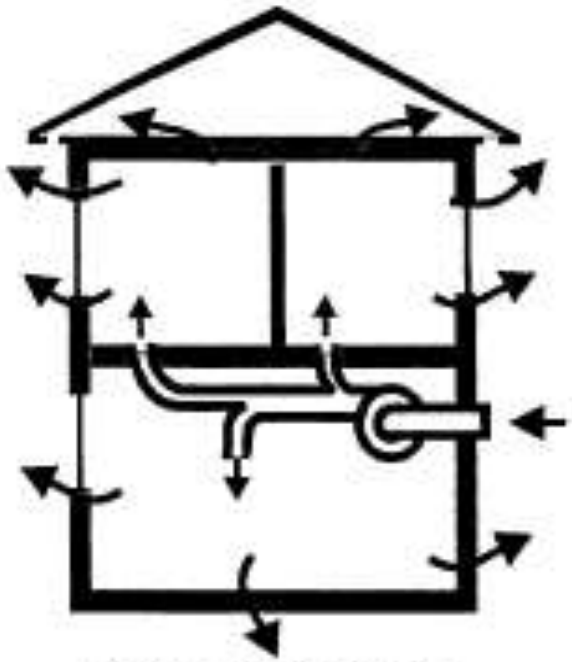
- Low cost, easy to install
- Preheat of outdoor air not required
- Removes moisture from building envelope in cold weather
- Heat recovery possible with exhaust-air heat pump
- No distribution required if forced air system exists

Disadvantages

- Can cause combustion spillage of non direct fired appliances, if home is airtight
- May increase soil gas (Radon) problems if a negative pressure is continuous.
- May increase drafts around windows and doors
- In hot humid climates, may cause humidity to be draw into the building envelope

fantech®
a systemair company

Supply Only:



Advantages

- Low cost
- Will not cause negative pressure – no spillage of combustion appliances
- May help decrease soil gas problems

Disadvantages

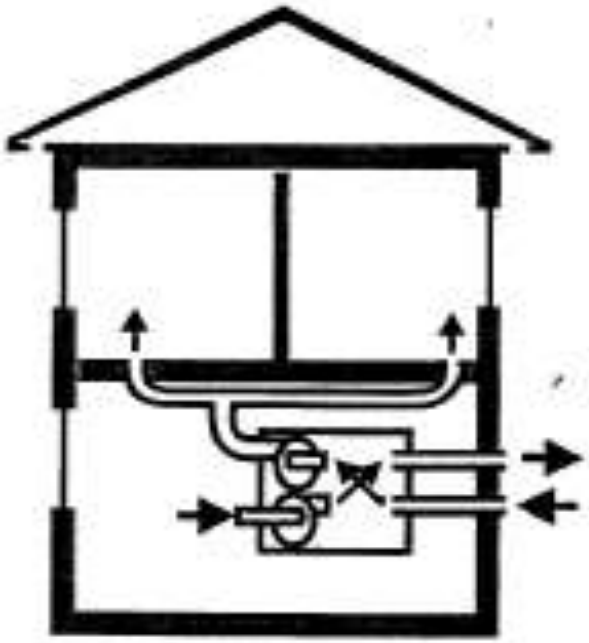
- Positive pressure will push moisture into building envelope in cold weather
- For cold climates pre-heat required, if not used delivered air temp to forced air furnace may be a problem
- Hot humid climate – increase in cooling loads
- Heat recovery not possible
- Distribution system required
- May require relief air system

fantech®
a systemair company

Balanced Systems

fantech®
a systemair company

Balanced with Heat or Energy Recovery



BALANCED SYSTEM, DIRECT DUCTED WITH HRV/ERV

Advantages

- Will not draw or push moisture into the building envelope
- Will not cause negative pressure – no spillage of combustion appliances
- Reduced energy costs
- *Many "off the shelf" packages*
- Direct ducting does not require insulation *on "house side" of equipment*
- Less likely to cause discomfort in all climate types

Disadvantages

- Higher equipment and installation costs
- Defrost required in cold climates

fantech®
a systemair company

DIFFERENTIATE

fantech®

When the bare minimum isn’t good enough for your customers…

Fresh Air Appliances (HRVs & ERVs)
The Best Way to Ventilate

We've gone to the trouble and expense to make our homes energy-efficient and comfortable.

We know we need to ventilate properly to help keep the indoor breathing environment healthy.

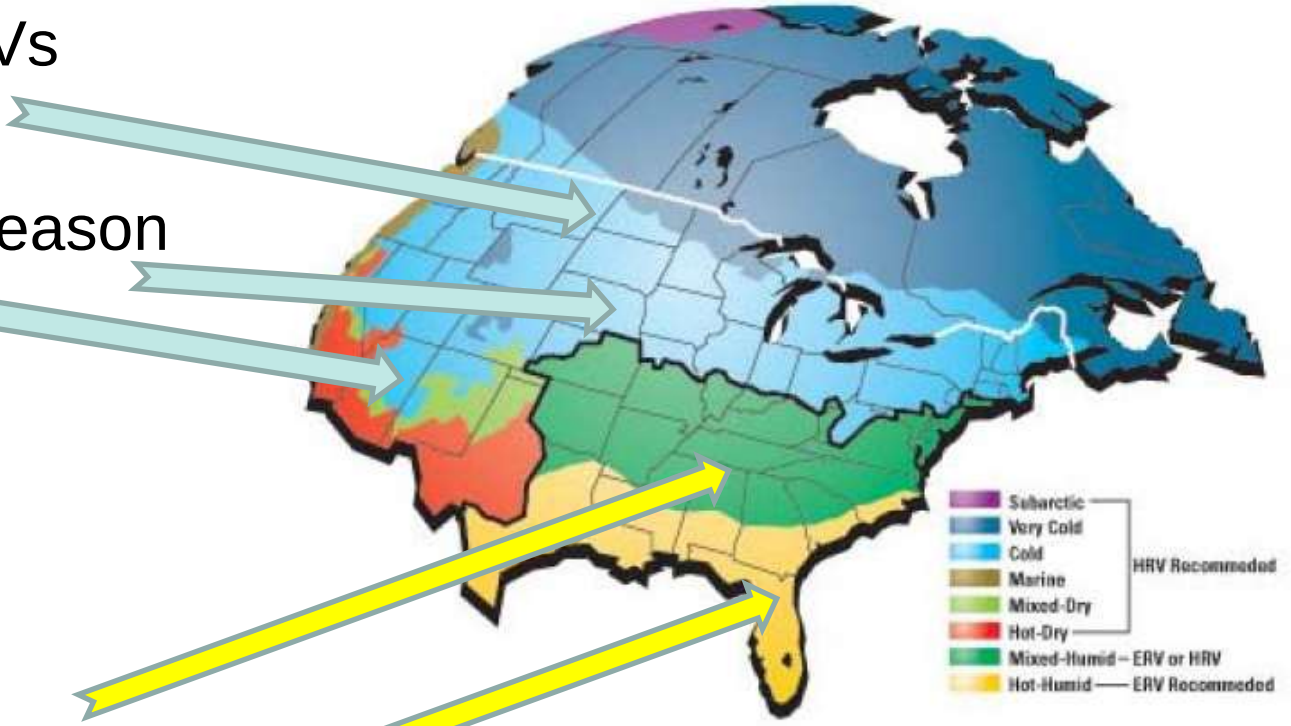
Then, let's use a fresh air appliance to provide proper, managed ventilation while saving well over half of the energy needed to make the fresh, outdoor air comfortable!

fantech®
a systemair company

Selecting a HRV or ERV Fresh Air Appliance

HRVs or ERVs

- Colder Areas
- Longer Heating Season
- Dryer outside



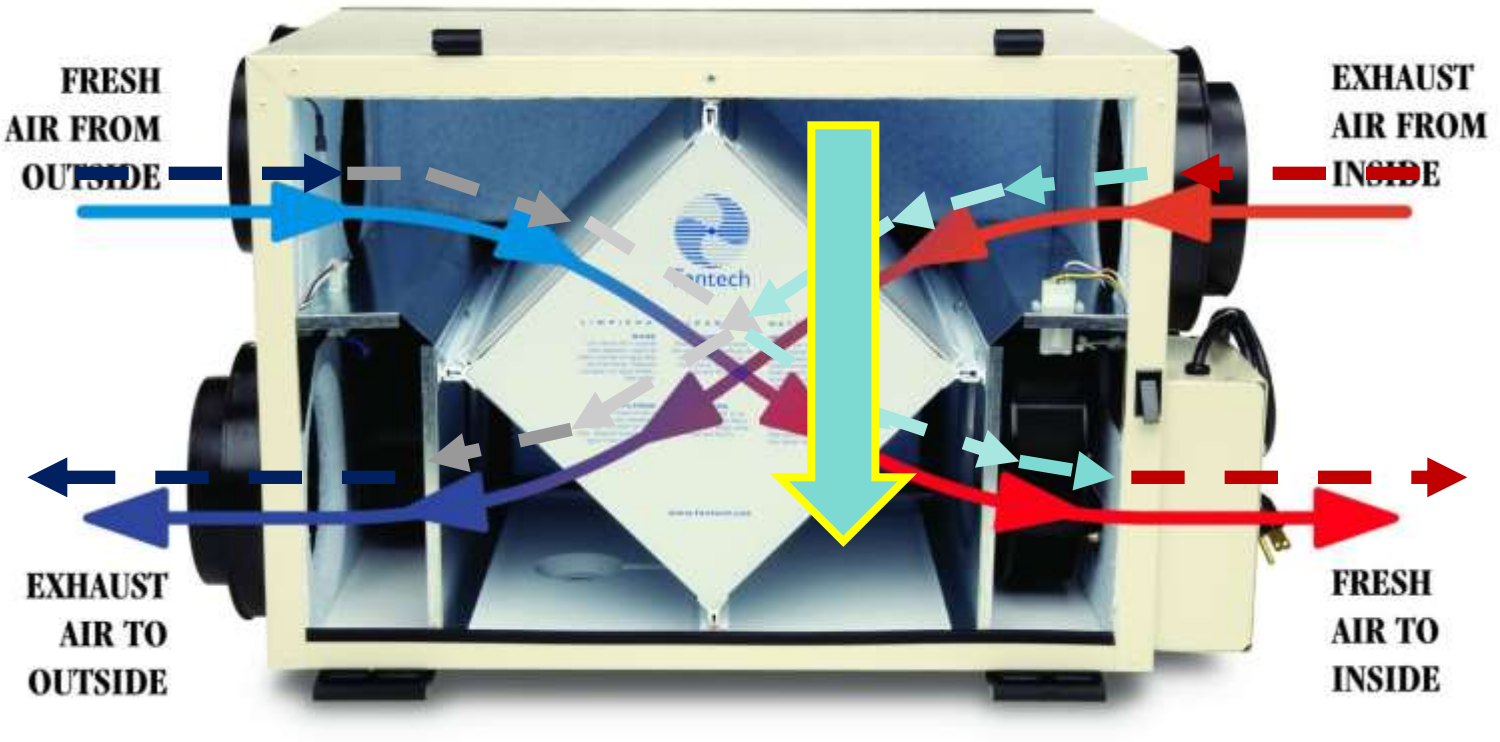
U.S. Department of Energy Climate Zones Map

ERVs

- Warmer more Humid areas
- Longer Cooling Season
- High outside RH

fantech®
a systemair company

HRVs – How they Work



Heat to Cool.

High to Low

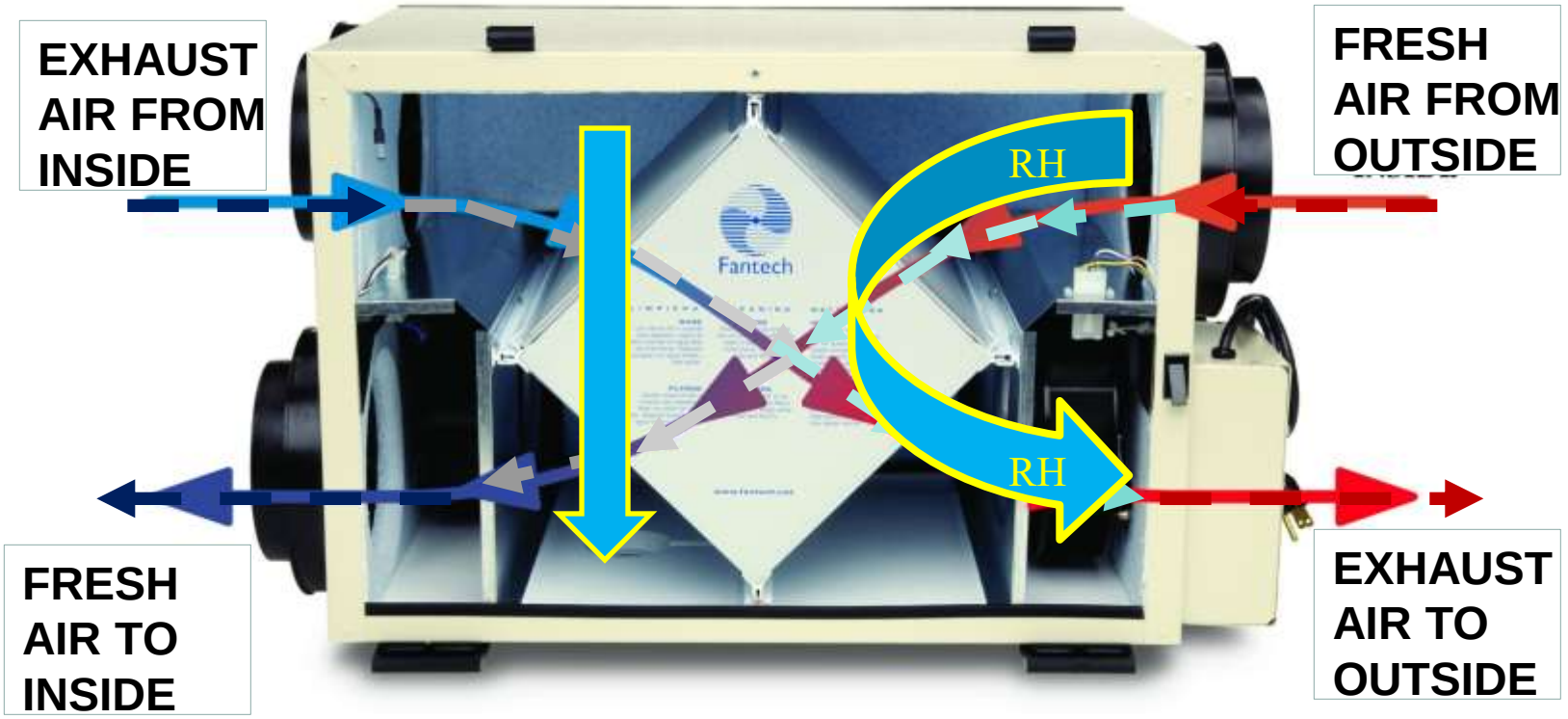
fantech®
a systemair company

The Recovery Core – Fantech HRVs

- Aluminum or Polymer
- Good sensible transference
- No latent transfer

fantech®
a systemair company

ERVs – How they Work



Heat to Cool

High to Low

fantech®
a systemair company

The Recovery Core – Fantech ERVs

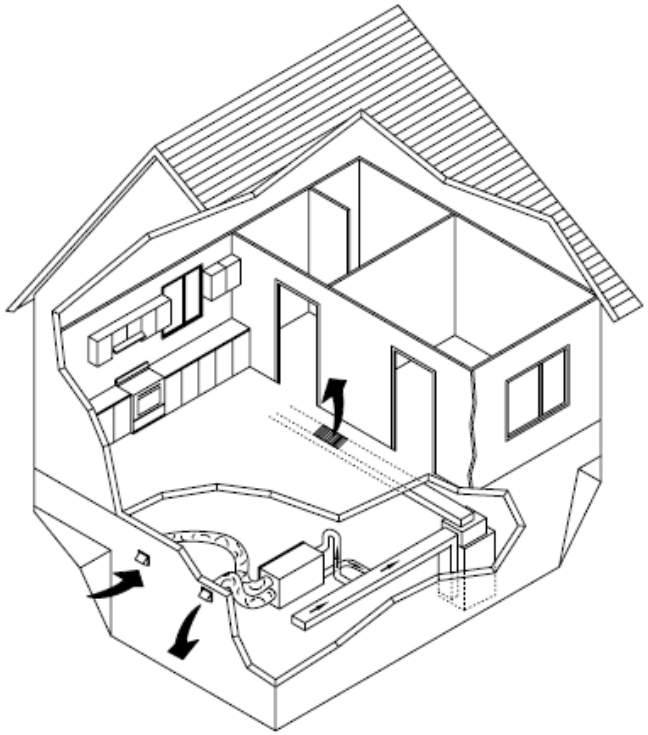
- Water vapor permeable polymer membrane
- Good sensible and latent transference
- More expensive than HRVs
- No drain line necessary most applications
- Freeze-tolerant, water-washable core!

Advantage

fantech®
a systemair company

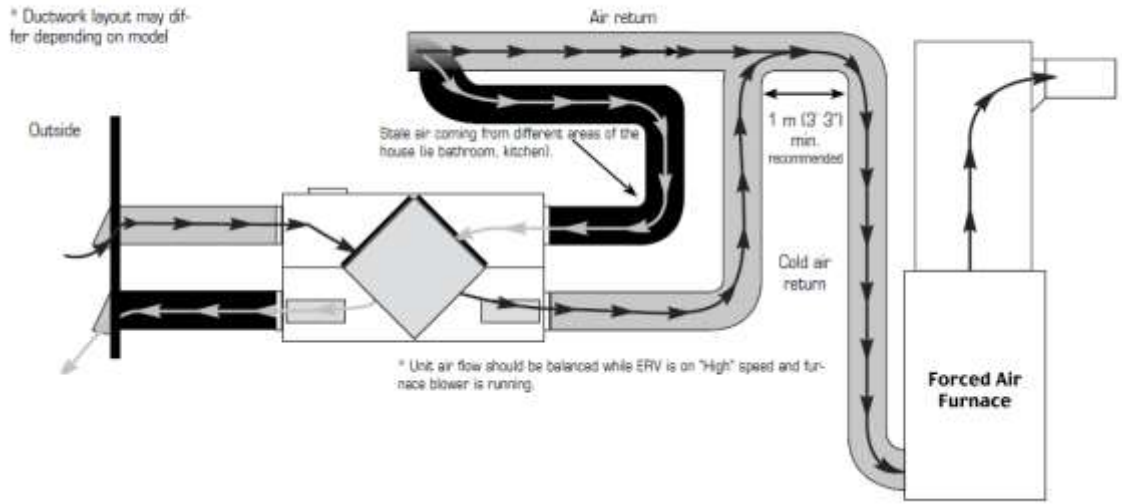
Simplified Installation

- Unit ducted to the return of the HVAC system
- Dedicated ventilation for Bathrooms and Kitchen
- Unit control either interlocked or stand alone



NOTE: In the case of a simplified installation, Option 1 is recommended.

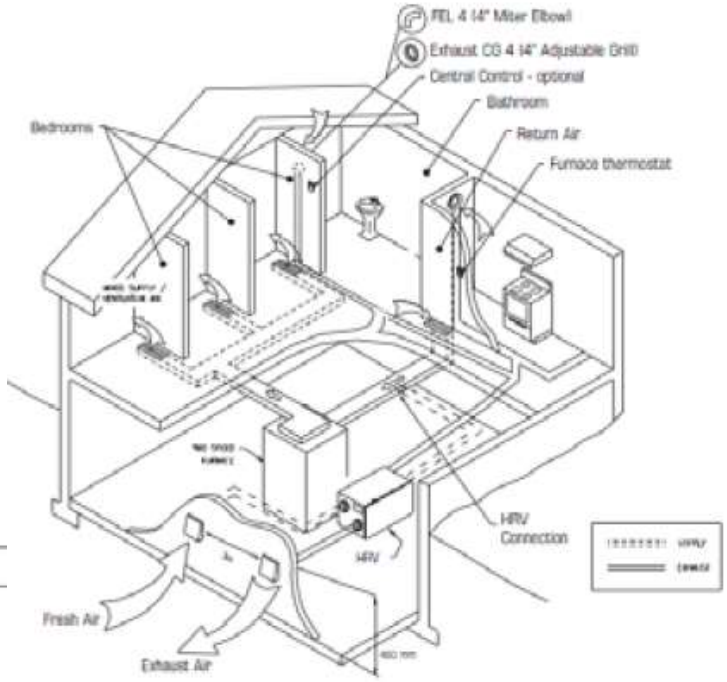
ERV/Furnace ducting for Simplified Installation - Option 1

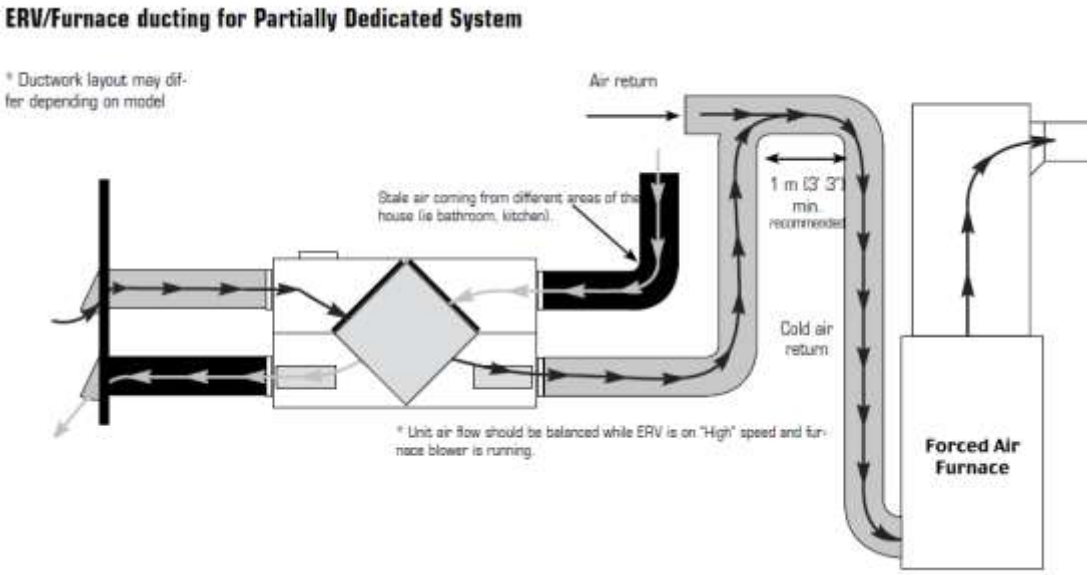


fantech®
a systemair company

Partially Dedicated System Installation

- Supply fresh air into return
- *Exhaust "dirty/stale" air* direct from bathrooms or other spaces.





fantech®
a systemair company

Fantech Fresh Air Appliances - ERVs

Horizontal (side port) units

- SER series
- 70 – 250 cfm

Vertical (top port) units

- VER series
- 100 – 200 cfm

fantech®
a systemair company

Fantech Fresh Air Appliances - HRVs

Horizontal (side port) units

- SHR series
- 70 – 250 cfm

Vertical (top port) units

- VHR series
- 70 – 200 cfm

fantech®
a systemair company


HERO
SERIES
FRESH AIR APPLIANCE
fantech®
a systemair company

Fantech Fresh Air Appliances – HRVs
HERO Series

HERO SERIES
Fresh Air Appliance

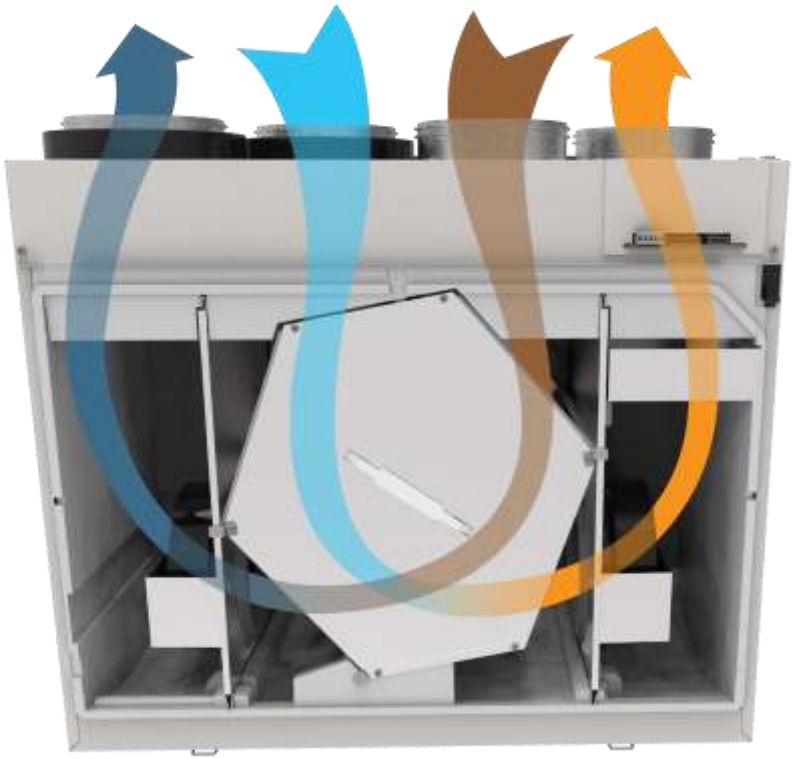
80% sensible recovery!

Vertical (top port) units

Counter flow recovery core

120 – 250 cfm

- 5 model sizes
- *2 models with ECM's*



fantech®
a systemair company

Commercial HRV & ERV's

- **SHR and SER series**
  - Many model sizes up to 1400 CFM
  - Filter options

- **ECHO series**
  - Up to 2800 CFM
  - EC motors / Microprocessor Control
  - Filter options

®

a systemair company

Fresh Air Appliance
Ventilation Controls

fantech®
a systemair company

Basic Controls for HRV/ERV's

- All models can accept low voltage controls, except:
  - VH (no R) and SH (no R) models
  - SE (no R) models
- Units can operate w/o accessory controls

EDF1/R

Triple Function Wall Control

- Press button once for continuous low speed
- Press button twice and the unit will cycle 20 minutes ON/40 minutes OFF and repeat
- **EDF1R:** Press the button a third time and the system will run recirculation on high speed
- **EDF1:** Press the button a third time and the system will run continuously on high speed
- Use in one central location

MDEH1

Dehumidistat

- Rotary Dial Dehumidistat
- Just turn dial to set desired humidity level
- Multiple units can be used
- Install in bathrooms, kitchen, laundry
- Dehumidifies when air outside is dryer than air inside

fantech®
a systemair company

Upgrade Options for Controls for HRV/ERV's

ECO-Touch

Programmable Touch Screen Wall Control

- Our most complete, yet easy to use control system
- Sleek design with backlight touchscreen LCD
- ECO mode selects the best operating mode and speed for the season, minimizing energy use associated with ventilation
- Set preferred indoor relative humidity range and ventilation mode for day and night conditions
- No battery to replace, all programmed settings are retained during power outage
- Maintenance reminder indicator
- Error code messages reduce troubleshooting time
- Use in one central location

EDF7

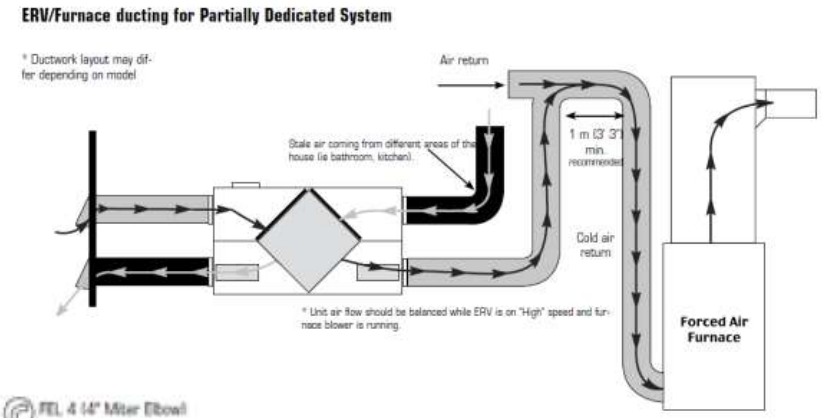
Electronic Multifunction Dehumidistat

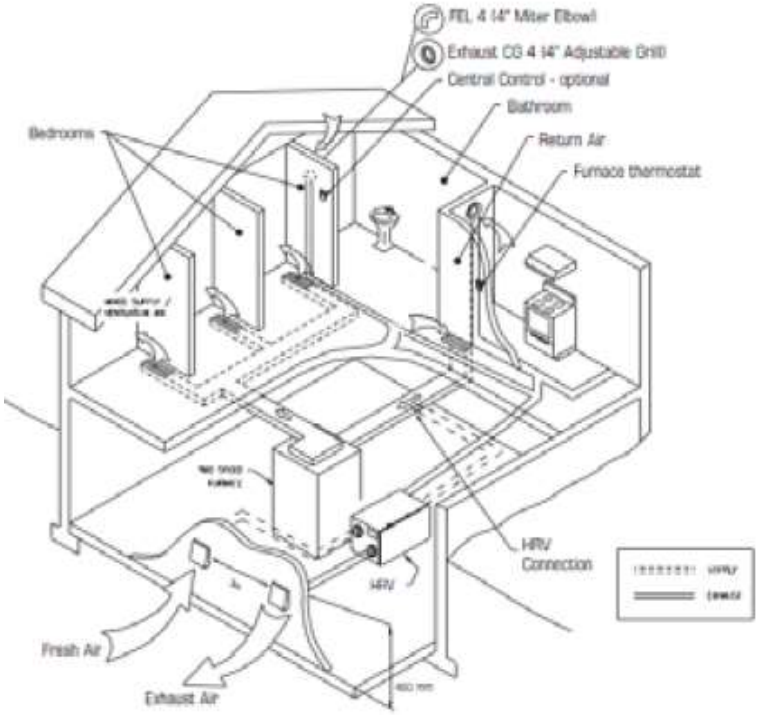
- Mode button provides 3 modes of operations: Ventilation Recircualtion and Standby
- User selected fan speed: Reduced, Medium, Normal and 20 minutes per hour
- AUTO setting allows the homeowner to deactivate the dehumidistat
- When the humidity exceeds the desired setpoint, the ventilation system operates at Normal speed
- Once the desired humidity level is achieved, your ventilation system resumes to its previous mode of operation

fantech®
a systemair company

Remote Timer Switch (RTS)

- *Exhaust "dirty/stale" air directly* from bathrooms or other spaces.
- Install accessory RTS on wall in space where air is extracted.
- High speed exhaust override





fantech®
a systemair company

Contractor Commissioning Kit

The easy way to balance a Fantech unit

- Kit includes:
  - Digital manometer w/ tubing
  - Pre-wired Eco-Touch
  - Durable carrying case
- No need for balancing dampers
- Kit speed controls each of the two fan motors individually
- Settings are permanently stored

fantech®
a systemair company

Fresh Air Appliances
The Sales Opportunity

- *Even though the code doesn't insist upon them in most communities*, fresh air appliances are being installed by contractors.
  - Contractors working for builders who want to provide a healthier environment for homeowners.
  - *Contractors who offer an IAQ "healthy home" upgrade*
  - *Contractors doing work for "high performance" and foam*-insulated homes.
- Fantech has the products you need.
- You want the business. Fantech wants the business.
- ***Let's get the business together!***

fantech®
a systemair company

fantech®

a systemair company

Breathe Easy.