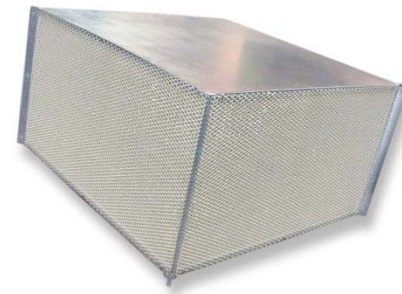


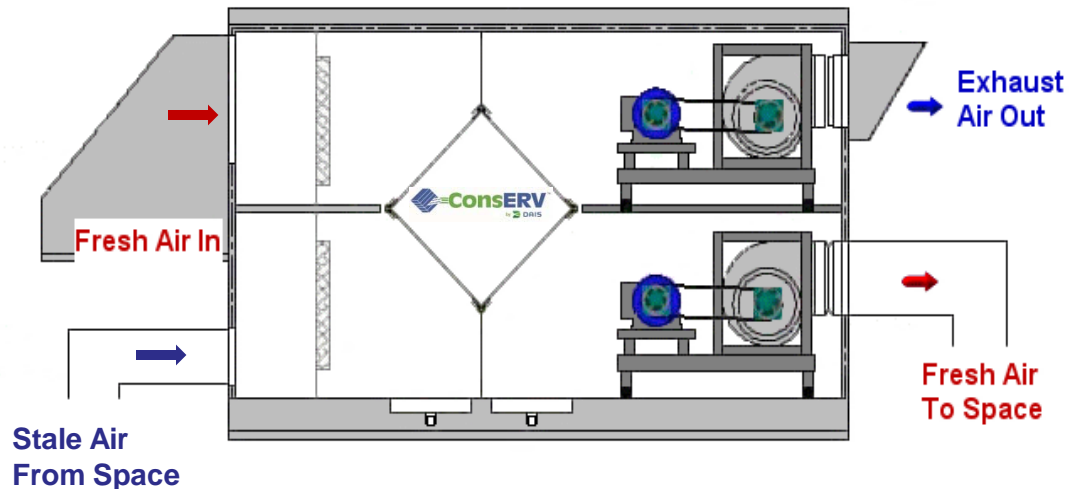
Next Generation: High Efficiency Energy Recovery Ventilator (ERV)



Why use an ERV?

- Required by code in many states (ASHRAE & IBC)
- Pre-condition incoming fresh air using exhaust air
- EPA study - Lowers triggers for allergies, asthma & manages mold
- Saves capital cost - by reducing AC size
- Reduces energy costs and CO2 emissions— great ROI
- Improves IAQ
- Utility rebates
- LEED points

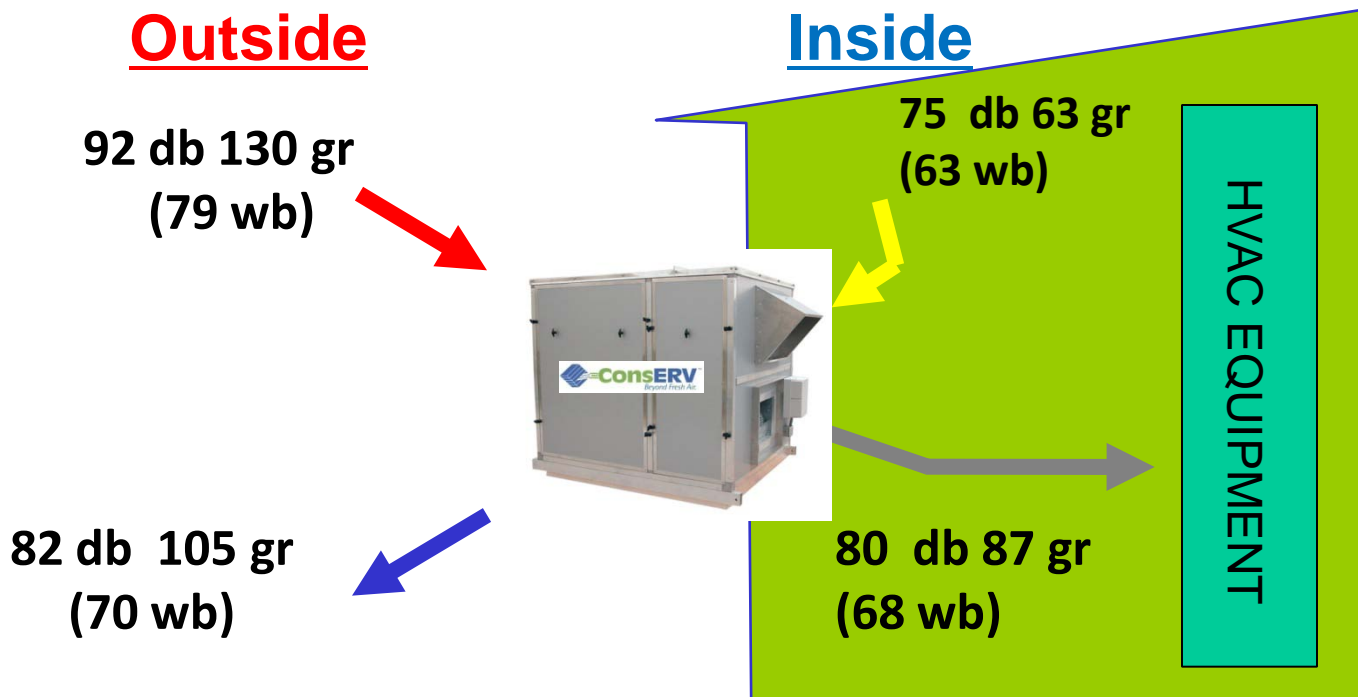
How does
it work?



Drivers for Energy Recovery Ventilation

- Indoor Air Quality Standards requiring outside air:
 - ASHRAE 62 *Ventilation for Acceptable Indoor Air Quality*
- Thermal Comfort Standard
 - ASHRAE 55 *Thermal Environmental Conditions for Human Occupancy*
- Energy Efficiency Standards
 - ASHRAE 90.1 *Energy Standard for Buildings Except Low-Rise Residential Buildings*
 - ASHRAE 189.1 *High-Performance Green Buildings*

How Fixed Plate ERV's Work - Summer Operation Performance



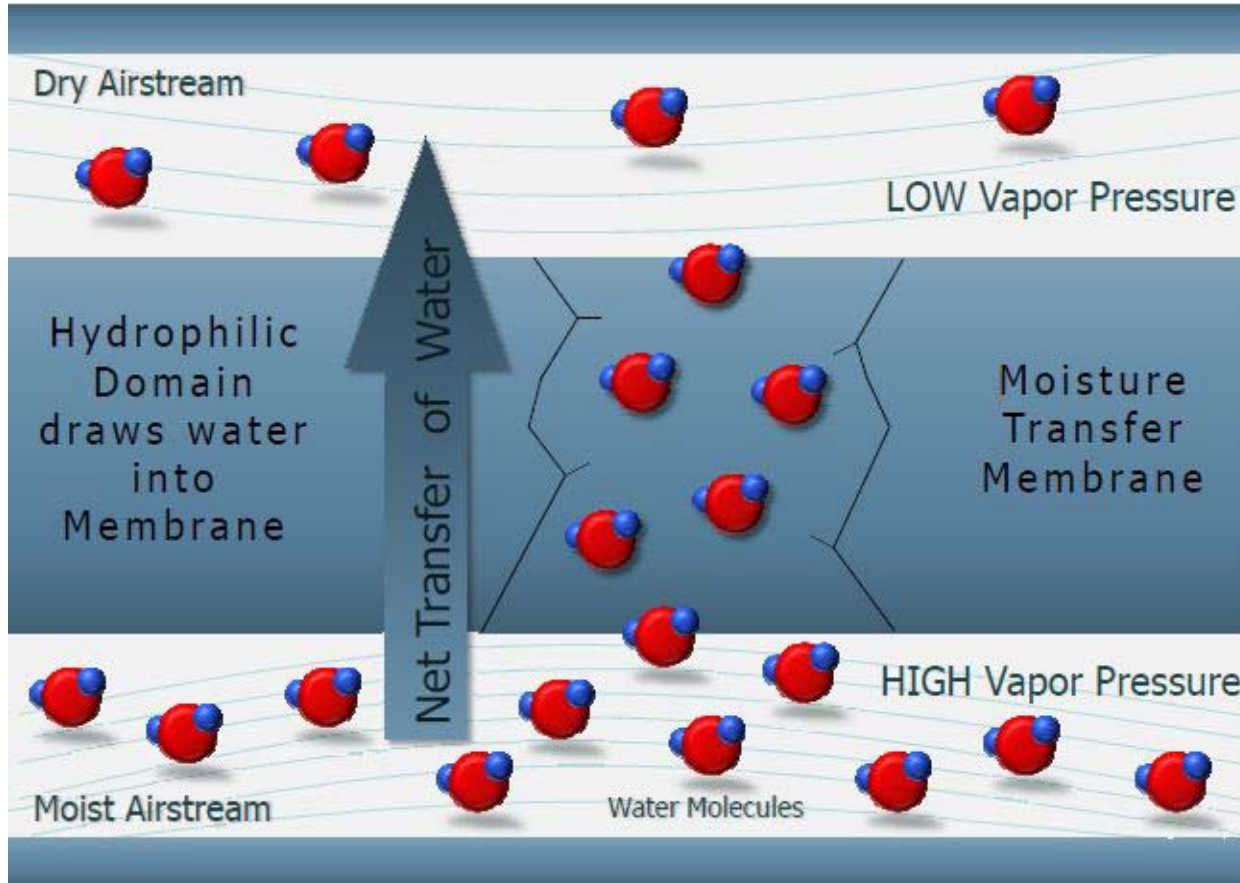
- On a **hot, humid** day brings cooler, drier air into the building HVAC
- On a **cold, dry** day brings warmer, moister air into the building HVAC
- Payback: (1) Less Equipment, (2) Lower operating costs
- Largest savings occur co-incident with utility system peak

Why use ConsERV™?

- Industry leading performance - **AHRI** certified
- Fixed plate design exchanges -
 - Heat (**SENSIBLE**) and Moisture (**LATENT**)
- Certified **ZERO** leakage
- Moisture is managed in **vapor state**:
 - **No condensate** → no drains, no mold
 - Plate is **anti-microbial** & **anti-fungal**
- Fixed plate means **NO** moving parts
 - Reduced maintenance – just filter changes
 - Increased reliability & equipment life
- *“Effectiveness of a wheel, with the simplicity a fixed plate”*

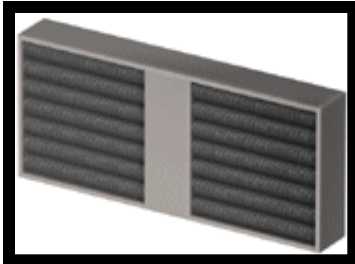


How does it work?



- Nanotechnology polymer hydrophilic (it 'likes moisture') membrane
- Water molecules travel through the membrane from charge to charge
- Water vapor moves from High vapor pressure to low vapor pressure trying to equalize

Types of Energy Recovery Ventilators



Heat pipes & Run around coils:
Sensible Only



Enthalpy wheels:
Sensible + Latent



Fixed plate exchangers: mostly
Sensible Only - **until now!**

ConsERV Total ERV

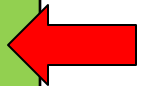
Effectiveness Ratings

(AHRI - April 2011)



| | | Fixed Plate | | | ConsERV | |
|-------------------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| | Airxchange Wheel | Innergy | Renewaire (G5) | dPoint | C510 | C500S |
| Effectiveness | 500 cfm | 530 cfm | 750 cfm | 400 cfm | 400 cfm | 400 cfm |
| Sensible (AHRI Summer) | 68% | 54% | 71% | 80% | 66% | 71% |
| Latent (AHRI Summer) | 60% | 30% | 43% | 39% | 55% | 64% |
| Sensible (AHRI Winter) | 68% | 58% | 72% | 72% | 66% | 71% |
| Latent (AHRI Winter) | 60% | 41% | 52% | 52% | 53% | 60% |

49% BETTER



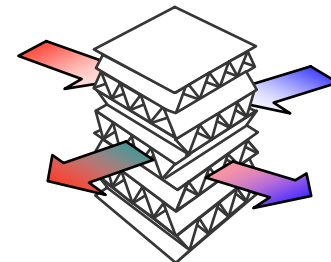
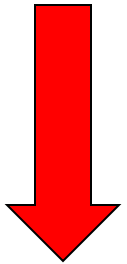
Competition - Rotating Wheels - Issues

- Wheel stops → ERV stops
 - Downsizing of A/C not practical
 - Potential failure: 100% outside air
 - Liability issue for designer
- High maintenance
 - Belts, gears, seals, bearings
- Power and control wiring
 - Parasitic load
 - Freeze potential < 25 F
- Reliability & longevity
 - Replace media (7 yrs) , performance degrades
- Cross leakage (purge) between airstreams



ConsERV Features & Benefits

- Reduce Capital Cost – chillers, piping, pumping, cooling tower, air handler
- Downsize cooling by 1.0 ton per C500S core
- No condensation pan required
- Typical face velocity range
 - 200 - 400 ft./ min.
- Static pressure loss – about the same as a wheel. 0.6 to 1.0" (core only)



Ease of Maintenance

- Recommended ConsERV core maintenance
 - Change filters as required – monthly or bi-monthly
 - Vacuum face of core 2 times per year to remove dust
- No accumulation of particulate matter in core
 - After long term operation and destructive testing
 - In fact the design of the flow field allows matter to “tumble” through.



LEED Qualifying Points

- New LEED v.3
- ConsERV contributes to LEED points
- Points available are:
 - Optimized Energy Performance
 - Outside Air Delivery Monitoring
 - Increased Ventilation
 - Thermal Control Design
 - Innovation in Design

Florida Utility ERV Incentives

- **Florida Power and Light (FP&L)**
 - Must be AHRI certified and total net effectiveness > 50%
 - \$.33 to \$.89/cfm no electric heat
 - \$.65 to \$1.75/cfm with electric heat
 - Fill in Energy Recovery Ventilator Form
 - FPL Personnel will field verify installation
 - Many sites have been qualified and paid
- **Tampa Electric Company (TECO)**
- **Progress Energy**
- **Arizona Utilities**

ConsERV Models

- ConsERV:
 - **Commercial**
 - D Series
 - G Series
 - **Residential**
 - H Series
 - **Custom**
 - Core Sales
 - >10,000 CFM



- **Warranty:**
 - **10 years** on core
 - **2 years** on cabinet

ConsERV Models

- D Series
 - Utilizes C500S cores
 - Aluminum (painted) double walled boxes with foam insulation
 - 1,000-5,400 cfm cataloged
 - Up to 21,000 cfm semi-custom
 - Indoor and rooftop
 - Fanned and non-fanned
 - Flexible air flows (co and counter flow)



ConsERV Models

- G Series
 - 250 to 3,250 cfm
 - Utilizes C510 cores
 - Double wall painted aluminum
 - Foam insulation
 - Flexible air flows
 - Indoor and rooftop versions available
 - Compete vs. RenewAire



Non-fanned & Custom Cassettes

- Non-fanned cabinets
- Flexible aspect ratio to match AHU
- Multi row cassettes
- Custom Applications
(up to 70,000 CFM)



ConsERV Advantage Summary

- No moving parts in core
- Less energy and demand usage
- Failsafe for downsizing HVAC plant
- AHRI certified, UL Recognized and ETL Listed
- Zero leakage between airstreams
- No condensation (reduces environment for mold)
- Easy to maintain, only filter changing & vacuuming
- Works with wide variety of equipment
- 10 year warranty on cores

Up to

30%
Energy
Savings



Questions ?



**For Further Information
Contact Us:**

11552 Prosperous Drive

Odessa, FL 33556

(727) 375-8484 X211

david.longacre@daisanalytic.com

www.conserv.com