Heat Recovery • Energy Recovery
Total Recovery Ventilators

Balanced Ventilation
for Residential and Commercial Buildings

HRV-ERV-0416
April 2016

Soler&Palau Ventilation Group

Common Ventilation Issues for Homes and Light Commercial Buildings

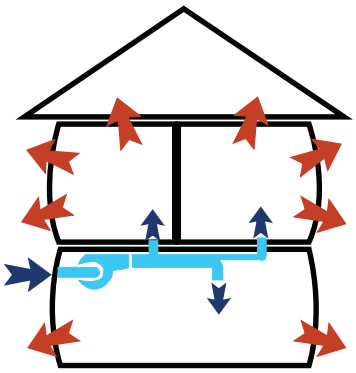
Unbalanced Pressure, Inefficiency, Moisture, and Toxins

With houses and buildings being built as tightly as possible, we are plagued by unbalanced ventilation systems.

This means we can have positive air pressure caused by exhausted air not being ventilated as fast as supply air comes in. Or, vice versa. There can be negative pressure with supply air not being brought in as fast as air is exhausted.

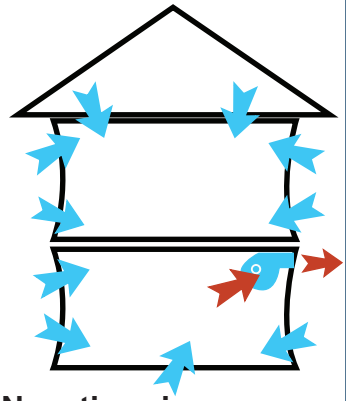
This leads to too much moisture in the home or building and increased loads on the heating and cooling system. Poor ventilation can also cause unpleasant odors and buildup of contaminants such as radon, formaldehyde, and VOCs.

Supply Only Fan Application



Positive air pressure
Forces hot and/or humid air into walls and insulation.

Exhaust Only Fan Application



Negative air pressure
The unfiltered air increases risks of mold and causes energy costs to be higher.

Terms to Know

Sensible Heat
The amount of energy involved in raising or lowering the temperature of air not including any energy required to cause water vapor to change state.

Latent Heat
The amount of energy associated with the humidity (or water vapor content) of an air stream. A drier air stream contains less latent heat and will impose a smaller latent load on the air conditioner.

Enthalpy
The total amount of energy contained in air, the sum of sensible and latent heat.

Balanced Ventilation
A ventilation strategy using both an exhaust air blower and a supply or make-up air blower that does not pressurize or de-pressurize a building.

Air-to-Air Heat Exchanger
Generic term for technologies designed to transfer heat -- and sometimes moisture -- between two air streams.

Heat Recovery Ventilator – HRV
An air-to-air heat exchanger that transfers sensible heat only; no humidity (latent heat) transfer occurs between the two air streams.

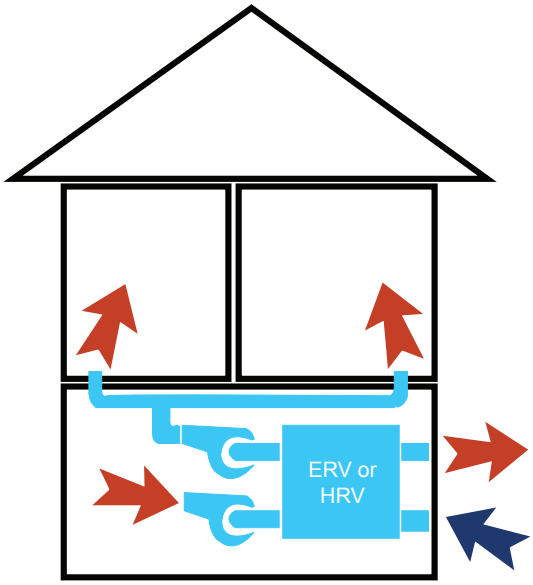
Energy Recovery Ventilator – ERV
In Cold Weather, some of the humidity in the inside air is recovered – along with its latent energy. Non-enthalpic heat recovery systems lose that latent energy.

S&P's Solution

Heat Recovery and Energy Recovery Ventilators

To protect the health of your family, your home, or your building, improving indoor air quality is key. Heat Recovery Ventilators (HRVs) or Energy Recovery Ventilators (ERVs) solve ventilation problems by moderating extremes in ventilation temperature and in humidity. They improve indoor air quality and lessen the load on air handling units for a more efficient system. Stale room air is exhausted and fresh outdoor air is brought back into the structure. The airstreams are physically separated so there is no mixing or contamination of the fresh air.

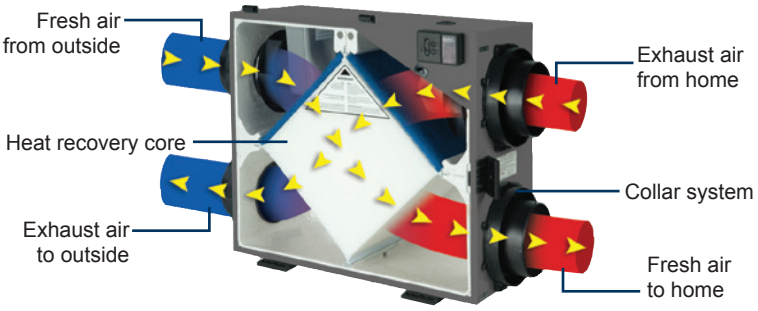
Balanced System Application



Balanced air pressure
Airflow supplied is equal to stale air exhaust.

HRVs and ERVs both:

- Reduce energy consumption while providing fresh air when heating or cooling
- Moderate extremes in ventilation temperature
- Use heat that would otherwise be lost with the exhaust air in the winter.
- Provide necessary fresh air while pre-cooling in summer
- Meet ventilation codes and standards.



ERV and HRV Differences

Which is the Right Choice for You?

Heat Recovery Ventilator (HRV)

- Generally recommended for use in colder climates
- The core will reclaim the heat from the outgoing stale air and reuse that heat to temper the incoming fresh air.
- Reduces the cost of effectively heating the home during winter.

Energy Recovery Ventilator (ERV)

- Generally recommended for use in warmer climates
- Help prevent moisture damage or over-drying of the structure in colder seasons by moderating extremes in humidity.
- Lessen the demand on the air conditioning system in warmer seasons
- Typically 3x more energy efficient in the summer than products (or units) that transfer only heat (HRVs)

ERV and HRVs

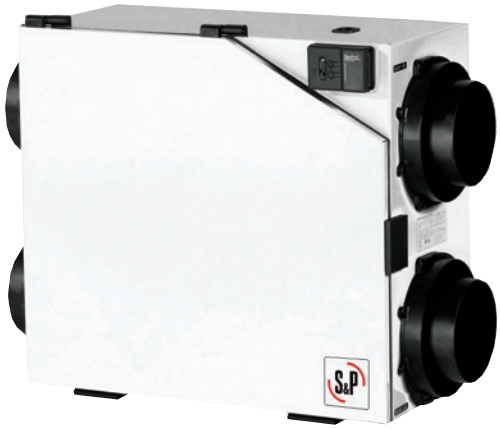
Heat Recovery and Energy Recovery Ventilators

HR Series Specifics

S&P Heat Recovery Ventilators (HRVs)

The S&P HR Series heat recovery ventilators (HRVs) are ideal for use in cold climates where home heating is essential. The HR Series uses one motor to exhaust stale room air and another motor to bring fresh outdoor air back into the house. The technology of a plate heat recovery core is that it transfers warm ambient air from one airstream to the other without mixing the air streams for maximum efficiency and comfort.

The HR Series has been engineered & designed to improve indoor air quality by reducing excess humidity and contaminants during the winter time, and replacing this air by fresh filtered air from the outdoors. During colder seasons, the units heat recovery core (polypropylene core) will reclaim the heat from the outgoing stale air and use this heat to temper the incoming fresh air, which reduces the cost of effectively ventilating the home during winter. This process is reversed for summer months.



Standard Features

- Polypropylene HRV core
- 3 operating modes (Intermittent, Continuous and High Speed)
- Duotrol™ balancing system reduces noise that would be produced by balancing dampers
- Unique collar system for easy manipulation of duct for better and quicker installation
- Painted galvanized steel case
- Designed for simple installation by a single person
- Washable filters
- Fully insulated case
- **Limited lifetime warranty** on the heat recovery core
- 5-year warranty on balance of unit

HR Series Specifics

S&P Heat Recovery Ventilators (HRVs)

S&P's HRV System

- **Duotrol™ Systems**: Selects ventilation modes (OFF, CONT or INTER), and adjusts the continuous airflow rates: Increasing (+)/Decreasing (-).

- **Motors(2)**: Designed with high performance and reliability, they are maintenance free for comfort and peace of mind.

- **Synthetic Filters**: Capture the largest particles & protect the heat recovery core from potential obstruction by these particles.

- **Heat Recovery Core**: A polypropylene cross-flow type, it is designed to transfer the heat between the exhaust & supply air streams without allowing any contamination or mixing of the streams. This maximizes the efficiency and improves indoor air quality.

- **Condensate Drain Pan & Drainage Hose**: Captures the water that accumulates during the heat transfer and defrost sequence in the fall, winter & early spring seasons. Drain hose is connected to the drain pan and serves as drainage for the accumulated water. It is normal during summer months to find no condensation in drain pan or in drainage hose.

- **Automatic Defrost Sequence**: The defrost sequence is electronically controlled by measuring the temperature of the incoming outdoor air. The sequence is activated at 23°F (-5°C) with a five minute duration, then returns to normal operation for 25 minutes. This keeps the heat recovery core from ice build-ups or freezing.

- **Defrost sequence**: Supply fan shuts down, and the exhaust fan speed increases depending on the outside air temperature.

Choosing the Right Size HR

*Choosing the correct size HR for your home is easy, all you need to know is the square footage***.**

If your home is up to:
2300 Sq. Ft. you need a **HR100V**
3400 Sq. Ft. you need a **HR160H**
5000 Sq. Ft. you need a **HR220H**

HR Series Specifics

S&P Heat Recovery Ventilators (HRVs)

Air Performance and Dimensions

Model	Airflow Performance (CFM)	Collar System	Port Location	Variable Speed	Motor Warranty	Dimensions	Weight (approx.)
HR100V	30-100 CFM (14 L/s-47 L/s)	5”Oval Dia. (127 mm)	Top	Yes	5 years	18”x 20”x 14-1/2” (45.7 cm x 50.8 cm x 36.8 cm)	40 lbs. (18.6 Kg)
HR160H	30-160 CFM (14 L/s-76 L/s)	6”Round Dia. (152 mm)	Side	Yes	5 years	21-1/2”x 23-7/8”x 11-3/8” (54.6 cm x 60.6 cm 28.9 cm)	48.5 lbs. (22 Kg)
HR220H	50-220 CFM (24 L/s-104 L/s)	6”Round Dia. (152 mm)	Side	Yes	5 years	21-1/2”x 23-7/8”x 16-1/2” (54.6 cm x 60.6 cm x 41.9 cm)	58.5 lbs. (26.5 Kg)

Energy Performance (Heating)

Model	Supply Temperature		Net Air Flow		Power Consumed (Watts)	Sensible Recovery Efficiency	Apparent Sensible Effectiveness
	°F	°C	CFM	L/s			
HR100V	32	0	40	19	28	64	72
	32	0	65	30	40	59	66
	-13	-25	37	18	30	55	73
HR160H	32	0	65	31	72	66	75
	32	0	83	39	80	63	72
	32	0	107	50	94	60	67
	-13	-25	76	36	72	56	73
HR220H	32	0	118	55	106	61	71
	32	0	160	75	132	58	65
	32	0	185	87	150	55	62
	-13	-25	120	57	105	58	72

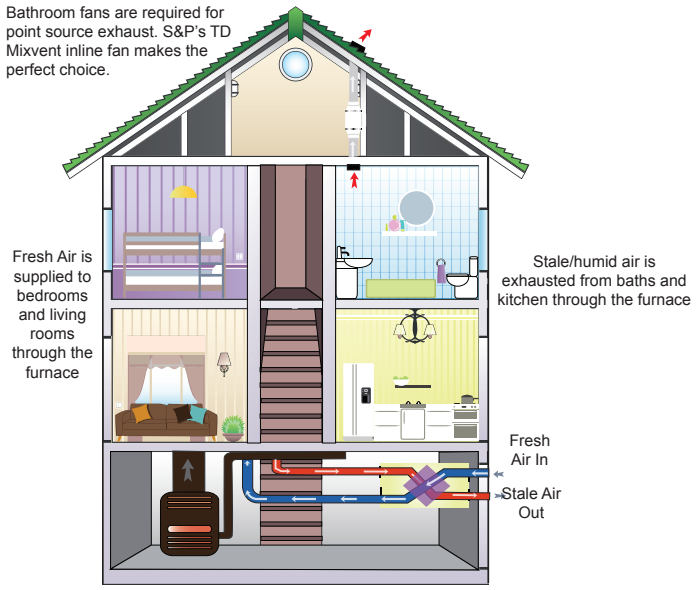
HR Installation Options

S&P Heat Recovery Ventilators (HRVs)

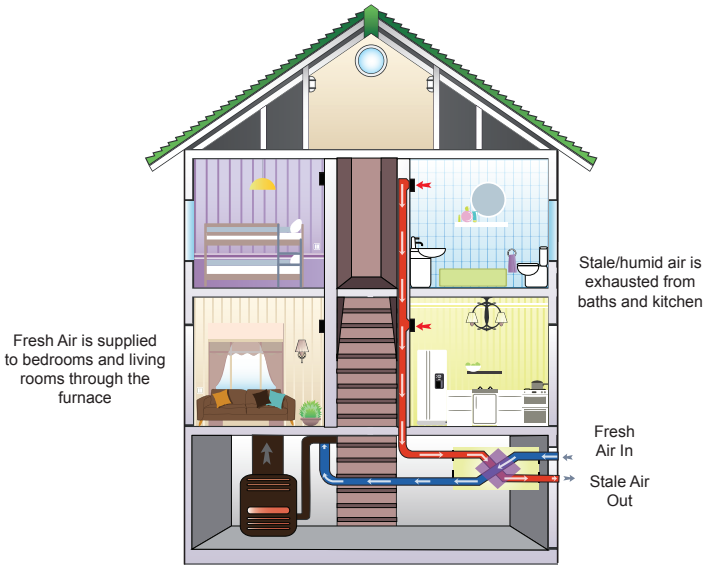
Types of Installation

The HR Series can be installed as independent systems that use dedicated ductwork, or they can be connected to the existing duct of the forced air heating or cooling system. The “Best” and “Better” systems meet the ASHRAE 62.2 Whole Building requirement when using an S&P HR control.

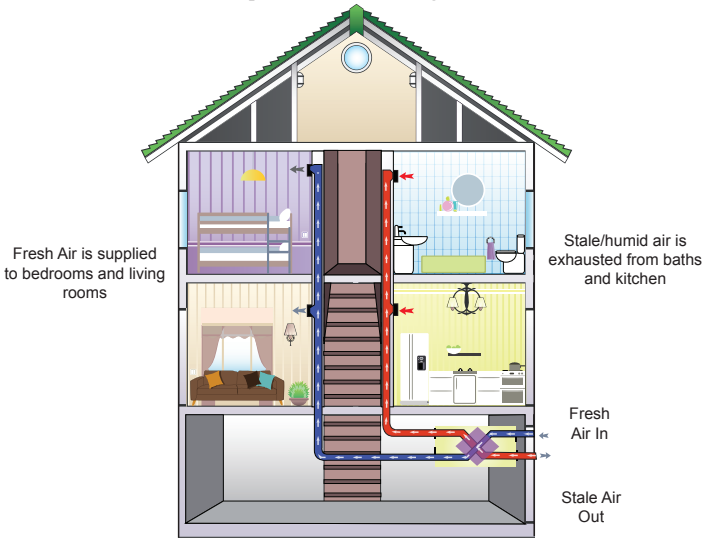
The Good System:
Exhaust and supply in the return



The Better System:
Exhaust at the source and supply in the return



The Best System:
Independent System



HR Series Controls

S&P Heat Recovery Ventilators (HRVs)

HRT-3 - Push Button Timer

- The HRT-3 model push button timer allows the homeowner control of the indoor humidity level in rooms were excess humidity is produced
- Press the button once the LED comes on then release, this activates the ventilation system to high speed for 20 minutes.
- Press the button until the LED blinks 2 times then release, this activates the ventilation system to high speed for 40 minutes.
- Press the button until the LED blinks 3 times then release, this activates the ventilation system to high speed for 60 minutes.
- Meets ASHRAE 62.2 continuous ventilation standards

HRRD-1 - Dehumidistat

- The HRRD-1 allows the users to select the humidity level using the Relative Humidity Sensor Dial
- The Relative Humidity Sensor Dial will “click” when the dial reaches approximate level of relative humidity and overrides the ventilation system to high speed once the level of humidity is above the set point
- For best results install in bathrooms, kitchen and laundry room
- Meets ASHRAE 62.2 continuous ventilation standards

HRRD-3P - Dehumidistat

- The HRRD-3P allows the users to select the humidity percentage, fan range and operation modes.
- Includes Relative Humidity Sensor, Speed Control Selector Switch and Mode Selector Switch
- The Relative Humidity Sensor Dial will “click” when the dial reaches approximate level of relative humidity and overrides the ventilation system to high speed once the level of humidity is above the set point
- Speed Control (OFF, NORMAL and REDUCED)
- Mode Control (INTERM and CONT)
- For best results install in bathrooms, kitchen and laundry room
- Meets ASHRAE 62.2 continuous ventilation standards

FT247 - Programmable Fan Timer

- Provides 7 ON and 7 OFF events per day
- LCD display
- Rechargeable battery back-up
- Push button activation
- Meets ASHRAE 62.2 continuous ventilation standards
- **Note:** Do not use with fluorescent lamp ballasts

ERV Series Specifics (TR and TRC)

The S&P Advantage - The Ultimate ERVs

With S&P's TR & TRC (total recovery) ERV Series for all climates, stale room air is exhausted and fresh outdoor air is brought back into the building. These two air streams are directed through a highly developed "air-to-air" energy exchange core. The air streams are physically separated by many layers of "plates" so there is no mixing or contamination of the fresh air. The plates are made of an engineered "resin" material that simultaneously transfers heat by conduction and humidity by attracting and moving water vapor from one air stream to the other.

S&P's TR & TRCs moderate extremes in both temperature and humidity, creating a comfortable indoor environment. The unique moisture transfer capability of the S&P core also eliminates condensation and frost build up in most applications. Unlike other ERVs on the market, no mechanical or electrical defrost systems are needed, which means higher heat recovery efficiencies, easier installation and more reliable operation.

Contractor Benefits

- Models compatible to any HVAC equipment
- Simple installation
- Mount in any orientation
- May be installed in unconditioned locations like attics and garages
- Easy-to-access field support
- Elimination of callbacks
- "Green Building" compliant

The CORE

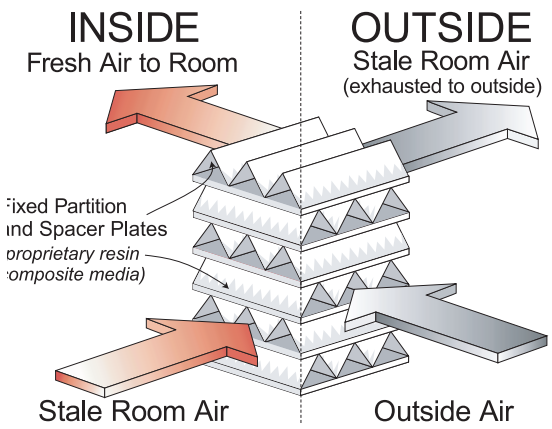
- Efficient transfer of heat and moisture
- No liquid is accumulated; no drain pan or defrost mechanism is required!
- Contaminated air is exhausted from the building, while the static plate core regulates extremes in humidity
- Industry best **10-year** warranty

The Warranty

An S&P TR or TRC is protected by a 10-year core warranty (2 years on balance of the unit). This commitment - twice as long as coverage on the best wheel products - means with S&P you can just fit and forget.

10-YEAR Core Warranty

5th Generation Core



Model TR and TRC Sizing

The S&P Advantage - The Ultimate ERVs

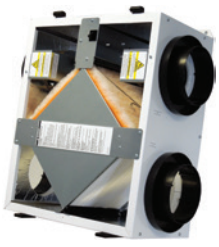
Choosing the Right Size TR by Square Footage

Based on square footage.

If the space is up to:
- 1500 Sq. Ft. you need a **TR90/TR90G**
- 2700 Sq. Ft. you need a **TR130**
- 4000 Sq. Ft. you need a **TR200**
- 6000 Sq. Ft. you need a **TR300**

Choosing the Right Size TR or TRC by Air Handler Load

Ton	Capacity 30% Outside Air Fraction in CFM	Model Needed
1.0	120	TR130
1.6	192	TR200
2.0	244	TR300
2.5	299	TR300
3.0	360	TRC500
3.5	415	TRC500
4.0	490	TRC500
5.0	594	TRC800
6.8	810	TRC800
9.3	1,116	TRC1600
14.3	1,716	TRC1600

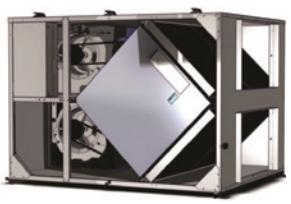


Model TR90/TR90G

Models TR130, TR200 and TR300

Model TRC500

Model TRC800



Model TRC1600

TR Series Specifics

Residential/Light Commercial Energy Recovery Ventilators (ERVs)

Models TR

HVI CERTIFIED

LISTED
DUCTED HEAT
RECOVERY VENTILATOR
89S5

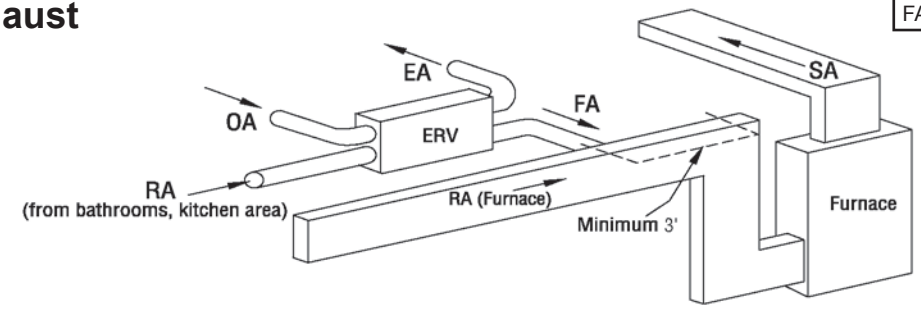
10-YEAR Core Warranty

Standard Features

- MERV-8 filters
- Less than 1 watt stand-by power consumption
- Transformer/relay package allowing simple on/off control
- Plastic double collars for 6 or 8” direct duct connection (TR300 is 8” only)
- TR90, TR130, TR300 have painted case, low voltage controls, 3’ Power cord
- TR90G has galvanized case, line voltage and no line cord
- Integral mounting flange and hanging bracket system
- Fully insulated case
- Large cores for high efficiency
- No condensate pan or drain required
- ***10-year*** industry best core warranty
- 5-year warranty on balance of unit

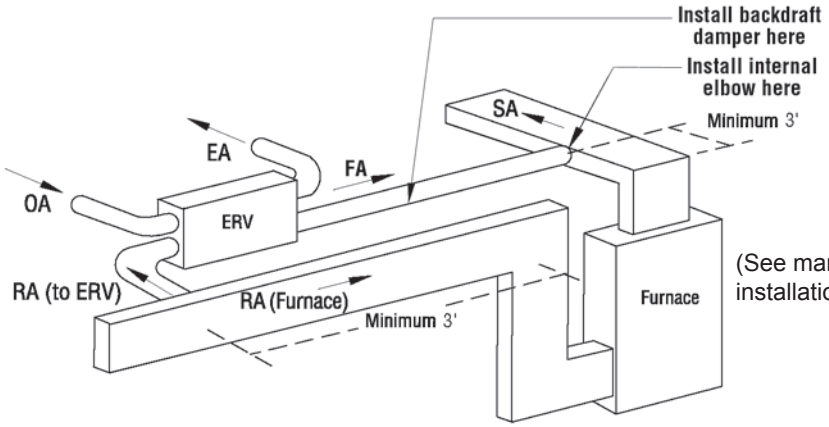
EA: Exhaust Air to outdoors
OA: Outdoor Air intake
RA: Room Air to be exhausted
FA: Fresh Air to inside

Central Exhaust



Note: ERV Blower may be operated separately from Furnace Blower

General Exhaust

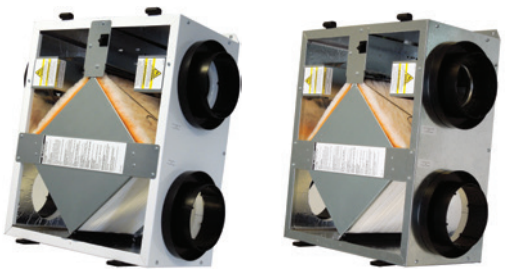


(See manual for additional installation details.)

Note: ERV Blower may be operated separately from Furnace Blower

Model TR90/TR90G

Residential/Light Commercial Energy Recovery Ventilators (ERVs)



Specifications

Ventilation Type: Static Plate, Heat and Humidity Transfer				
Typical Airflow Range: 40-110 CFM				
TR90 - Painted Case, Low Voltage Controls, Line Cord				
TR90G - Galvanized Case, Line Voltage, No Line Cord				
Unit may be mounted in any orientation and in heated or unheated locations				
Number Motors: Two, 0.03 HP each, totally enclosed, thermally protected, 0.35A				
V	**Hz**	**Phase**	**Input Watts**	**FLA**
120	60	Single	94 @ 69 CFM	0.16
Control Voltage: 24 VAC				
Filters: MERV 8, spun polyester media. 7-12” x 10-1/2” x 1”				
Weight: 36 lbs (unit), 41 lbs (in carton)				
Shipping Dimensions: 28-1/2” L x 21-1/2” W x 14-3/4” H				
Options (controls for TR90, not compatible with TR90G): SPTL - Percentage Timer Control SPBL - Push Button Point-of-Use Control SFM Percentage Timer Control with Furnace Interlock SHW-20 - Dehumidistat Control				

Performance

Airflow CFM	Temp EFF%	Temp Winter%*	Total EFF% Summer*
113	61	55	42
98	64	58	46
85	67	61	49
73	69	33	53
58	72	66	57
40	76	70	61

* Contact Factory for HVI certification report for complete certified rating.

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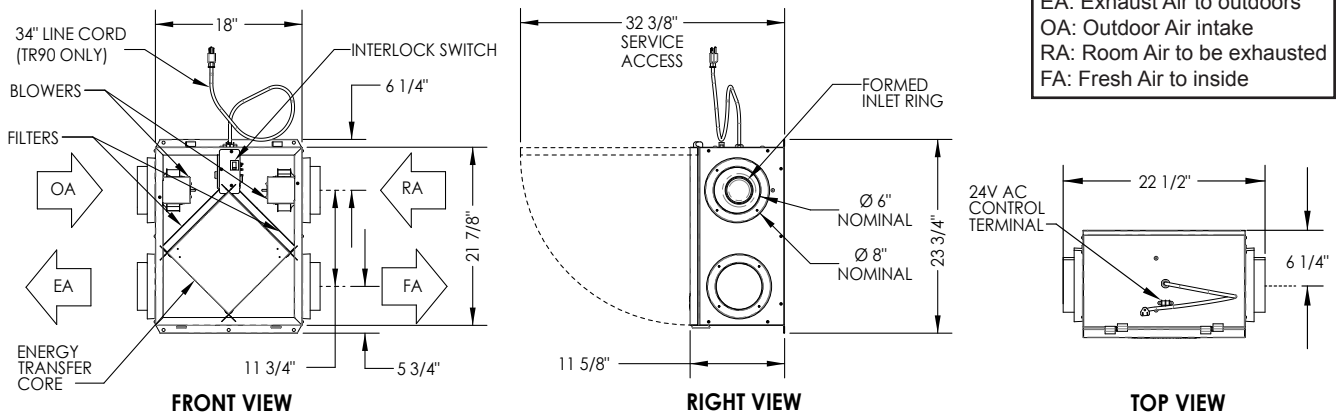
DUCTED HEAT RECOVERY VENTILATOR
89S5

10-YEAR Core Warranty

Dimensions



Model TR130

Residential/Light Commercial Energy Recovery Ventilators (ERVs)

Specifications

Ventilation Type: Static Plate, Heat and Humidity Transfer				
Typical Airflow Range: 50-140 CFM				
Unit may be mounted in any orientation				
Number Motors: One, 0.1 hp				
V	**Hz**	**Phase**	**Input Watts**	**FLA**
120	60	Single	102 @ 130 CFM	1.2
Control Voltage: 24 VAC transformer / relay package with switched dry contacts				
Filters: MERV 8, spun polyester media. 10-1/2” x 10-1/2” x 1”				
Weight: 49 lbs (unit), 60 lbs (in carton)				
Shipping Dimensions: 32” L x 21” W x 17-1/2” H (in carton)				
Options: SPTL - Percentage Timer Control SPBL - Push Button Point-of-Use Control SFM Percentage Timer Control with Furnace Interlock SHW-20 - Dehumidistat Control				

Performance

Airflow CFM	ESP in H_2O	Temp EFF%	Total EFF% Winter/Summer*
79	0.60	78	73/60
104	0.50	75	69/55
126	0.40	72	66/50
137	0.30	71	64/48
153	0.20	68	61/45
165	0.10	67	59/43

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DUCTED HEAT RECOVERY VENTILATOR
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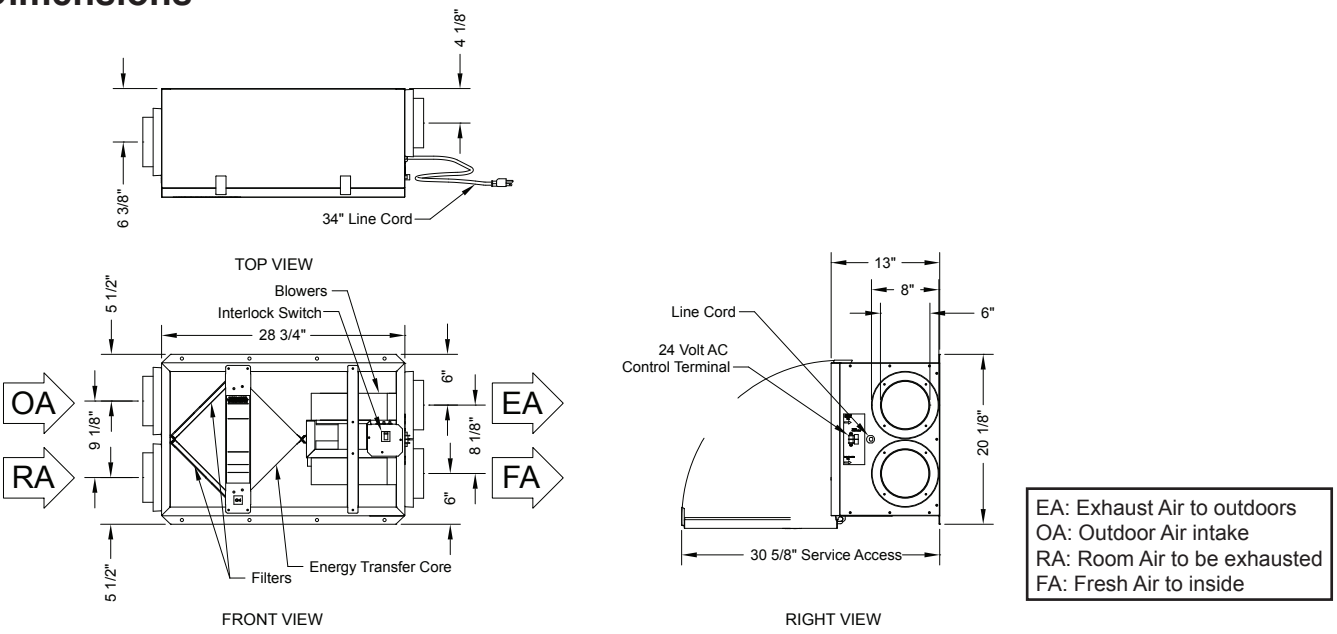
10-YEAR Core Warranty

Dimensions



EA: Exhaust Air to outdoors
OA: Outdoor Air intake
RA: Room Air to be exhausted
FA: Fresh Air to inside

Model TR200

Residential/Light Commercial Energy Recovery Ventilators (ERVs)

Specifications

Ventilation Type: Static Plate, Heat and Humidity Transfer				
Typical Airflow Range: 100-200 CFM				
Unit may be mounted in any orientation				
Number Motors: One, 0.1 hp				
V	**Hz**	**Phase**	**Input Watts**	**FLA**
120	60	Single	157 @ 181 CFM	1.5
Control Voltage: 24 VAC transformer / relay package with switched dry contacts				
Filters: MERV 8, spun polyester media. 10-1/2” x 21-3/4” x 1”				
Weight: 70 lbs (unit), 82 lbs (in carton)				
Shipping Dimensions: 32” L x 21-1/2” W x 29” H (in carton)				
Options: SPTL - Percentage Timer Control SPBL - Push Button Point-of-Use Control SFM Percentage Timer Control with Furnace Interlock SHW-20 - Dehumidistat Control				

Performance

Airflow CFM	ESP in H_2O	Temp EFF%	Total EFF% Winter/Summer*
122	0.70	81	77/64
149	0.60	79	75/61
168	0.50	78	73/59
176	0.40	78	72/59
186	0.30	77	72/58
192	0.20	77	71/57
207	0.10	76	70/56

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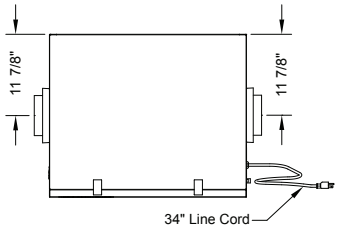
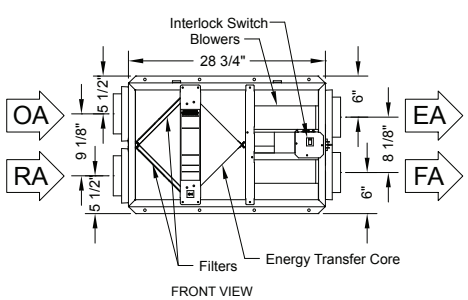
DUCTED HEAT RECOVERY VENTILATOR
89S5

10-YEAR Core Warranty

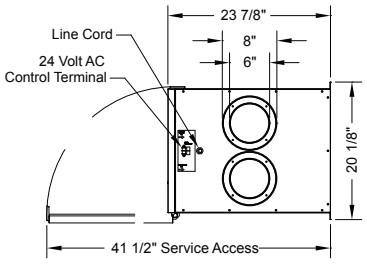
Dimensions



TOP VIEW



FRONT VIEW



RIGHT VIEW

EA: Exhaust Air to outdoors
OA: Outdoor Air intake
RA: Room Air to be exhausted
FA: Fresh Air to inside

Model TR300

Residential/Light Commercial Energy Recovery Ventilators (ERVs)

Specifications

Ventilation Type: Static Plate, Heat and Humidity Transfer				
Typical Airflow Range: 150-300 CFM				
Unit may be mounted in any orientation				
Number Motors: One, 0.2 hp				
V	**Hz**	**Phase**	**Input Watts**	**FLA**
120	60	Single	315 @ 297 CFM	3.3
Control Voltage: 24 VAC transformer / relay package with switched dry contacts				
Filters: MERV 8, spun polyester media. 10-1/2" x 21-3/4" x 1"				
Weight: 72 lbs (unit), 85 lbs (in carton)				
Shipping Dimensions: 32" L x 21-1/2" W x 29" H (in carton)				
Options: SPTL - Percentage Timer Control SPBL - Push Button Point-of-Use Control SFM Percentage Timer Control with Furnace Interlock SHW-20 - Dehumidistat Control				

Performance

Airflow CFM	ESP in H_2O	Temp EFF%	Total EFF% Winter/Summer*
170	1.0	78	73/59
191	0.9	77	71/57
215	0.8	75	69/55
256	0.7	73	66/51
277	0.6	71	65/49
295	0.5	70	63/47
311	0.4	69	62/46

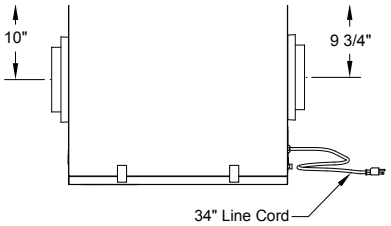
* Contact Factory for HVI certification report for complete certified rating.

HVI CERTIFIED

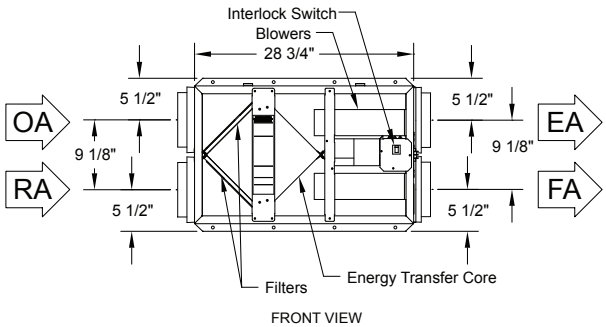
c UL us LISTED
DUCTED HEAT RECOVERY VENTILATOR
89S5

10-YEAR Core Warranty

Dimensions

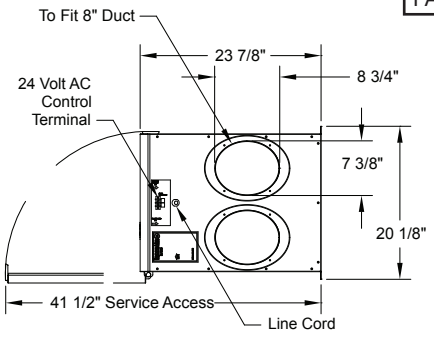


TOP VIEW



FRONT VIEW

EA: Exhaust Air to outdoors
OA: Outdoor Air intake
RA: Room Air to be exhausted
FA: Fresh Air to inside



RIGHT VIEW

Series TR Controls

Residential/Light Commercial Energy Recovery Ventilators (ERVs)

SPTL - Percentage Timer Control

- Primary control for TR90, TR130, TR200 and TR300
- Runs unit an adjustable amount of time each hour
- Two wire, low voltage connection to TR
- Meets ASHRAE 62.2 continuous ventilation standards

SPBL - Push Button Point-of-Use Control

- Push button control turns on unit from bathrooms or other intermittent exhaust locations
- 20 minute run-time with one touch
- Push 2x for 40 or 3x for 60 minutes
- Two wire, low voltage connection to SPTL

SFM - Percentage Timer Control with Furnace Interlock

- Alternate primary control for TR90, TR130, TR200 and TR300
- Wires to TR unit and either thermostat or furnace control to turn on furnace blower
- Six wire, low voltage connection
- Meets ASHRAE 62.2 continuous ventilation standards

SHW-20 - Dehumidistat

- Rotary dial dehumidistat
- Turn the dial to set desired humidity level
- Designed for convenient installation in bathrooms, kitchen or laundry room
- Dehumidifies when inside air is more humid than the set point
- **Caution:** the outside air must be less humid than the indoor air for this to work.

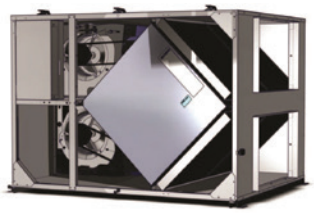
FT247 - Programmable Fan Timer

- Provides 7 ON and 7 OFF events per day
- LCD display
- Rechargeable battery back-up
- Push button activation

TRC Series Specifics

Commercial Energy Recovery Ventilators (ERVs)

Models TRC



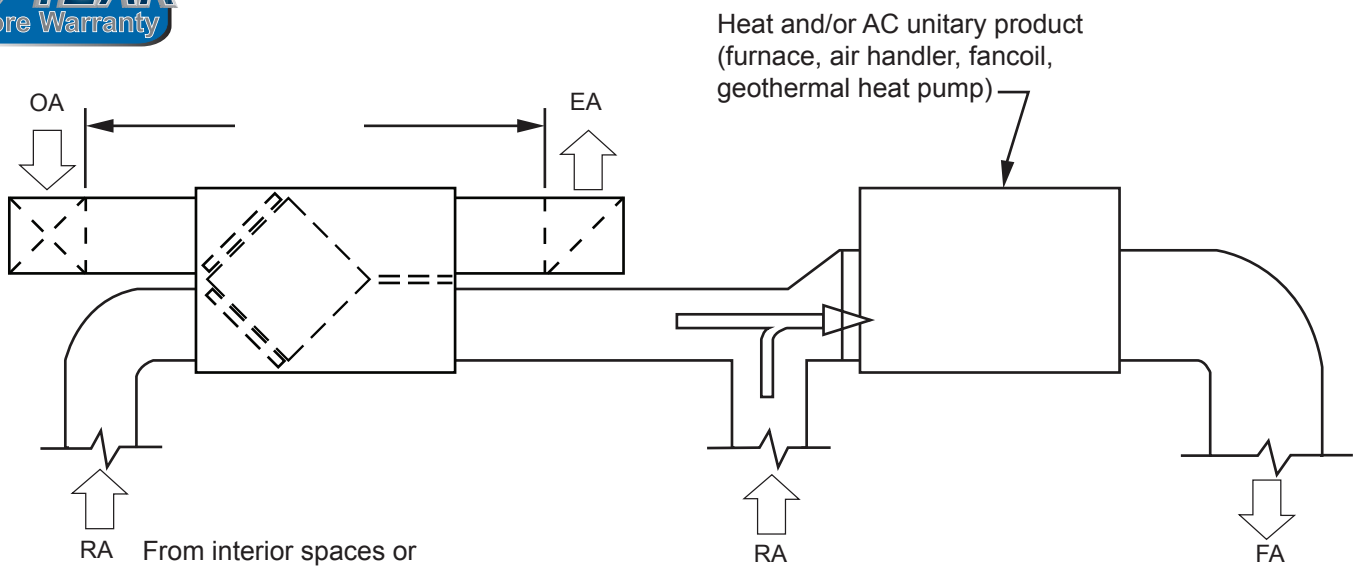
AHRI CERTIFIED

c UL us LISTED
DUCTED HEAT
RECOVERY VENTILATOR
89S5

10-YEAR Core Warranty

Standard Specifications and Features

- AHRI certified performance data for efficiency and cross leakage.
- UL tested flammability and smoke generation that meets NFPA 90A and 90B test standards for commercial applications.
- Easy installation and service.
- Easiest maintenance of any ERV
- 2 MERV-8 filters
- Non-Fused disconnect
- Transformer/relay package allowing simple on/off control
- Access doors for easy access to blowers, core and filters
- Integral mounting flange and hanging bracket system
- 2 Direct Drive, TEFC, Premium Efficient blower motors
- Fully insulated case
- Large cores for high efficiency
- No condensate pan or drain required
- ***10-year*** industry best core warranty
- 2-year warranty on balance of unit



Model TRC500

Commercial Energy Recovery Ventilators (ERVs)

Performance

Airflow CFM	ESP in H_2O	Watts	Temp EFF%	Total EFF% Winter/Summer*
225	1.25	335	81	76/66
338	1.00	420	77	71/61
380	0.90	470	75	69/59
450	0.65	550	73	66/56
540	0.25	640	70	62/52
575	0.00	690	69	61/51
600	-0.25	735	68	60/50

* At AHRI 1060 standard conditions
(see certified data on page 24 for core components.)
Note: Watts is for the entire unit.

Specifications

Ventilation Type: Static Plate, Heat and Humidity Transfer

Typical Airflow Range: 200-540 CFM

AHRI 1060 Certified Core: One L85

Airflow Rating Points (for AHRI): 450 CFM and 338 CFM

Motors: One, 0.6 hp (Single Phase)

V	Hz	Phase	FLA	Min. Cir. Amps	Max. Overcurrent Protection Device
115	60	Single	7.0	8.8	15
208-230	60	Single	3.5	4.4	15

Standard Features: Non-Fused Disconnect
24 VAC Transformer/Relay Package

Filters: Two total, MERV 8, 2” pleated, 14” x 20” nominal size

Weight: 141 lbs (unit), 160 lbs (in carton)
200 lbs (on pallet), up to 3 units on 40 lb pallet

Shipping Dimensions: 48” L x 41” W x 18” H (in carton)
55” L x 42” W x 22” H (on pallet)

c UL us
LISTED
DUCTED HEAT
RECOVERY VENTILATOR
89S5

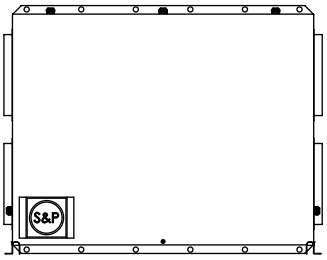
AHRI CERTIFIED

10-YEAR Core Warranty

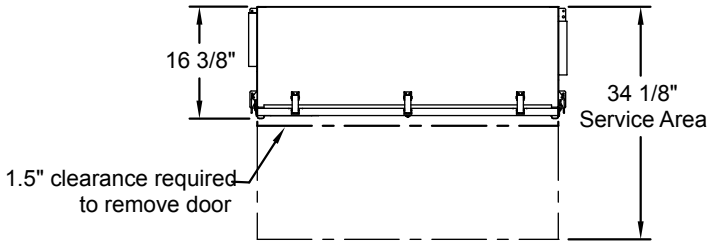
Model TRC500

Commercial Energy Recovery Ventilators (ERVs)

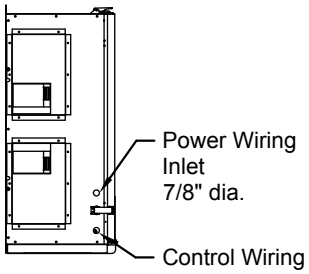
Dimensions



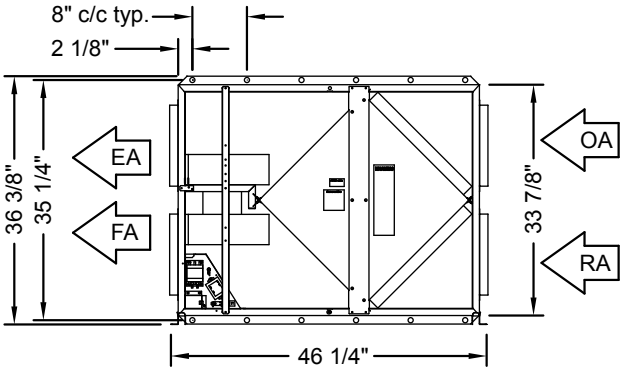
FRONT VIEW
WITH DOOR ON



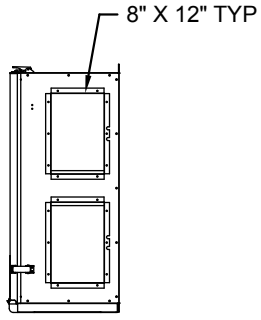
TOP VIEW



LEFT VIEW



FRONT VIEW
DOOR REMOVED



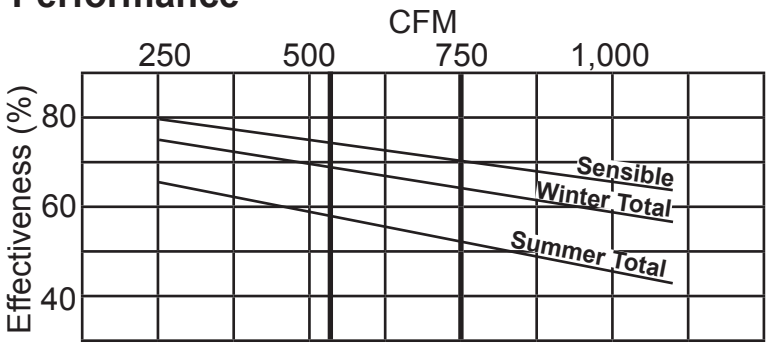
RIGHT VIEW

EA: Exhaust Air to outdoors
OA: Outdoor Air intake
RA: Room Air to be exhausted
FA: Fresh Air to inside

Model TRC800

Commercial Energy Recovery Ventilators (ERVs)

Performance



(see certified data on page 24 for core components.)

Specifications

Ventilation Type: Static Plate, Heat and Humidity Transfer
Typical Airflow Range: 250-925 CFM
AHRI 1060 Certified Core: One L125-00
Airflow Rating Points (for AHRI): 750 CFM and 563 CFM
Number Motors: Two direct drive blower/motor packages

V	Hz	Phase	FLA (per motor)	Min. Cir. Amps	Max. Overcurrent Protection Device
115	60	Single	9.0	20.3	25
208-230	60	Single	4.5	10.1	15

Standard Features: Non-Fused Disconnect 24 VAC Transformer/Relay Package
Filters: Two total, MERV 8, 2” pleated, 20” x 20” nominal size
Weight: 211 lbs (unit), 300 lbs (shipping weight, on pallet)
Shipping Dimensions: 62” L x 48” W x 40” H

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DUCTED HEAT
RECOVERY VENTILATOR
89S5

AHRI CERTIFIED

10-YEAR Core Warranty

Airflow Performance

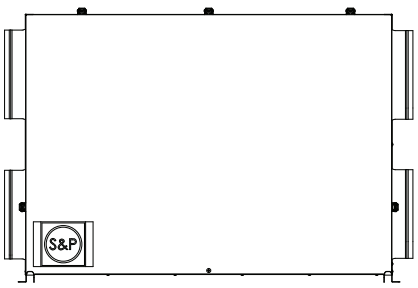
Motor HP	External Static Pressure (Inches Water Column)						
Phase	0.0	0.25	0.5	0.75	0.9	1.25	1.5
0.75	970 CFM	925 CFM	860 CFM	795 CFM	750 CFM	635 CFM	480 CFM
Single Phase	1,490 Watts	1,375 Watts	1,270 Watts	1,160 Watts	1,090 Watts	950 Watts	825 Watts

Note: Watts is for the entire unit (two motors).

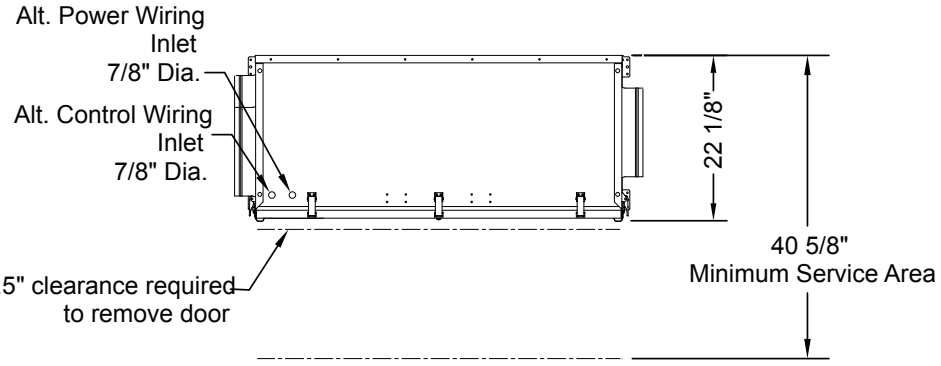
Model TRC800

Commercial Energy Recovery Ventilators (ERVs)

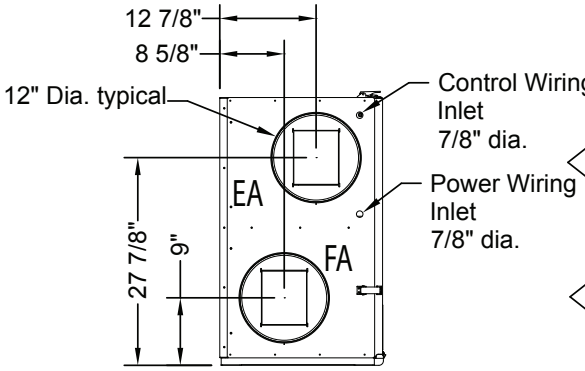
Dimensions



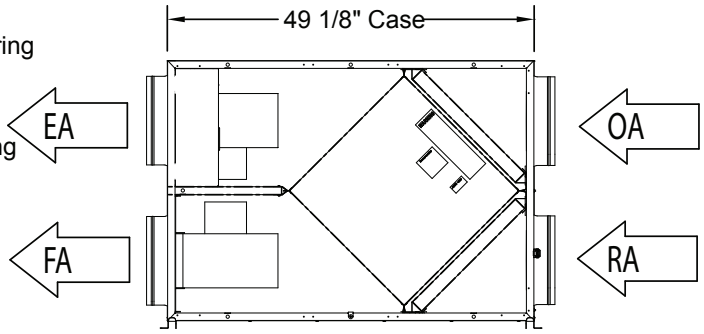
FRONT VIEW
WITH DOOR ON



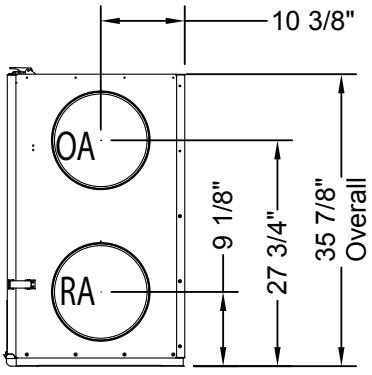
TOP VIEW



LEFT VIEW



FRONT VIEW



RIGHT VIEW

EA: Exhaust Air to outdoors
OA: Outdoor Air intake
RA: Room Air to be exhausted
FA: Fresh Air to inside

AHRI 1060-2005 - Certified Performance Models TRC500 and TRC800

Commercial Energy Recovery Ventilators (ERVs)

AHRI-1060 Certified Performance - Model Number L85-G5 (used in TRC500)													
Type			**Tilt Angle**			**Nominal Airflow**				**Pressure Drop**			
Plate			N/A			100% - 450 SCFM 75% - 338 SCFM				0.6 in. H_2O 0.5 in. H_2O			
Leakage Ratings					**Thermal Effectiveness Ratings at 0" Pressure Differential**								
	Pressure Differential	EATR	OACF	Purge Angle or Setting	Nominal Airflow		Sensible	Latent	Total	Net Airflow	Net Sensible	Net Latent	Net Total
Test 1	-1 in. H_2O	1.0%	1.00	N/A	450 CFM	Heating	73%	53%	66%	450 CFM	73%	53%	66%
Test 2	0 in. H_2O	0.0%	1.02	N/A		Cooling	73%	46%	56%		73%	46%	56%
Test 3	1 in. H_2O	0.0%	1.05	N/A	338 CFM	Heating	77%	60%	71%	338 CFM	77%	60%	71%
						Cooling	77%	52%	61%		77%	52%	61%

AHRI-1060 Certified Performance - Model Number L125-G5 (used in TRC800)													
Type			**Tilt Angle**			**Nominal Airflow**				**Pressure Drop**			
Plate			N/A			100% - 750 SCFM 75% - 563 SCFM				0.65 in. H_2O 0.45 in. H_2O			
Leakage Ratings					**Thermal Effectiveness Ratings at 0" Pressure Differential**								
	Pressure Differential	EATR	OACF	Purge Angle or Setting	Nominal Airflow		Sensible	Latent	Total	Net Airflow	Net Sensible	Net Latent	Net Total
Test 1	-1 in. H_2O	1.0%	1.00	N/A	750 CFM	Heating	71%	52%	64%	750 CFM	71%	52%	64%
Test 2	0 in. H_2O	0.0%	1.02	N/A		Cooling	71%	43%	53%		71%	43%	53%
Test 3	1 in. H_2O	0.0%	1.05	N/A	563 CFM	Heating	75%	59%	69%	563 CFM	75%	59%	69%
						Cooling	75%	50%	59%		75%	50%	59%

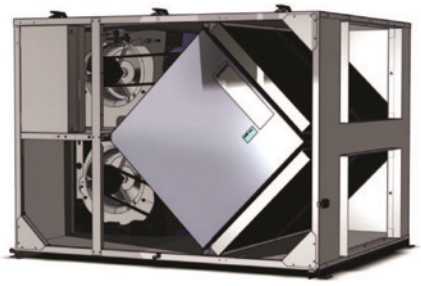
NOTE: SCFM = Standard Cubic Feet per Minute OACF = Outdoor Air Correction Factor EATR = Exhaust Air Transfer Ratio N/A = Not Applicable

Energy recovery components certified in accordance with AHRI Standard 1060-2005. Actual Performance in packaged equipment may vary.

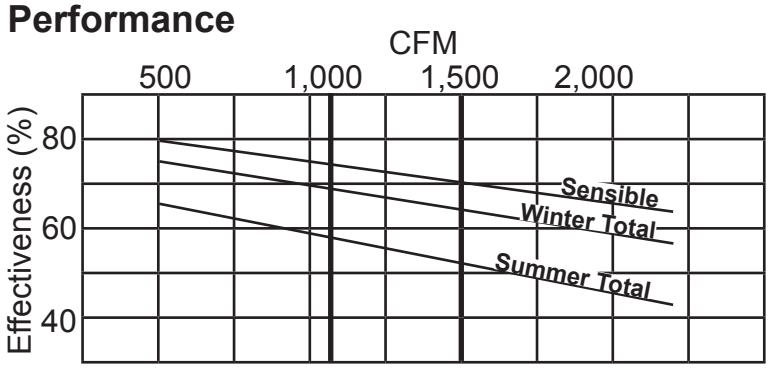
Model TRC1600

Commercial Energy Recovery Ventilators (ERVs)

TRC1600



Performance



Specifications

Ventilation Type: Static Plate, Heat and Humidity Transfer						
Typical Airflow Range: 500-2,025 CFM						
AHRI 1060 Certified Core: Two L125-00						
Airflow Rating Points (for AHRI): 1,500 CFM and 1,126 CFM						
Number Motors: Two belt drive blower/motor packages with adjustable sheaves						
Drive HP	**V**	**Hz**	**Phase**	**FLA (per motor)**	**Min. Cir. Amps**	**Max. Overcurrent Protection Device**
1.5	115	60	Single	15.2	34.2	45
	208-230	60	Single	8.2-7.6	18.5	25
	208-230	60	Three	4.6-4.8	10.8	15
	460	60	Three	2.4	5.4	15
Standard Features: Totally Enclosed Premium Efficiency Motors Motor Starters, Non-fused Disconnect 24 VAC Transformer/Relay Package						
Filters: Four total, MERV 8, 2” pleated, 20” x 20” nominal size						
Weight: 414 lbs (unit), 505 lbs (shipping weight, on pallet)						
Shipping Dimensions: 72” L x 48” W x 40” H						

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DUCTED HEAT
RECOVERY VENTILATOR
89S5

AHRI CERTIFIED

10-YEAR Core Warranty

Airflow Performance

Motor HP	Blower RPM	Turns Open	External Static Pressure (in w.g.)													
			0.0		0.25		0.5		0.75		0.9		1.25		1.5	
			SCFM	BHP	SCFM	BHP	SCFM	BHP	SCFM	BHP	SCFM	BHP	SCFM	BHP	SCFM	BHP
1.5	1148	4	1592	0.7	1480	0.7	1320	0.6	1120	0.5	800	0.4	-	-	-	-
	1304	2	1809	1.0	1720	1.0	1600	0.9	1410	0.8	1250	0.7	975	0.6	630	0.4
	1460	0	2025	1.5	1950	1.4	1845	1.3	1715	1.2	1540	1.1	1400	1.0	1165	0.8

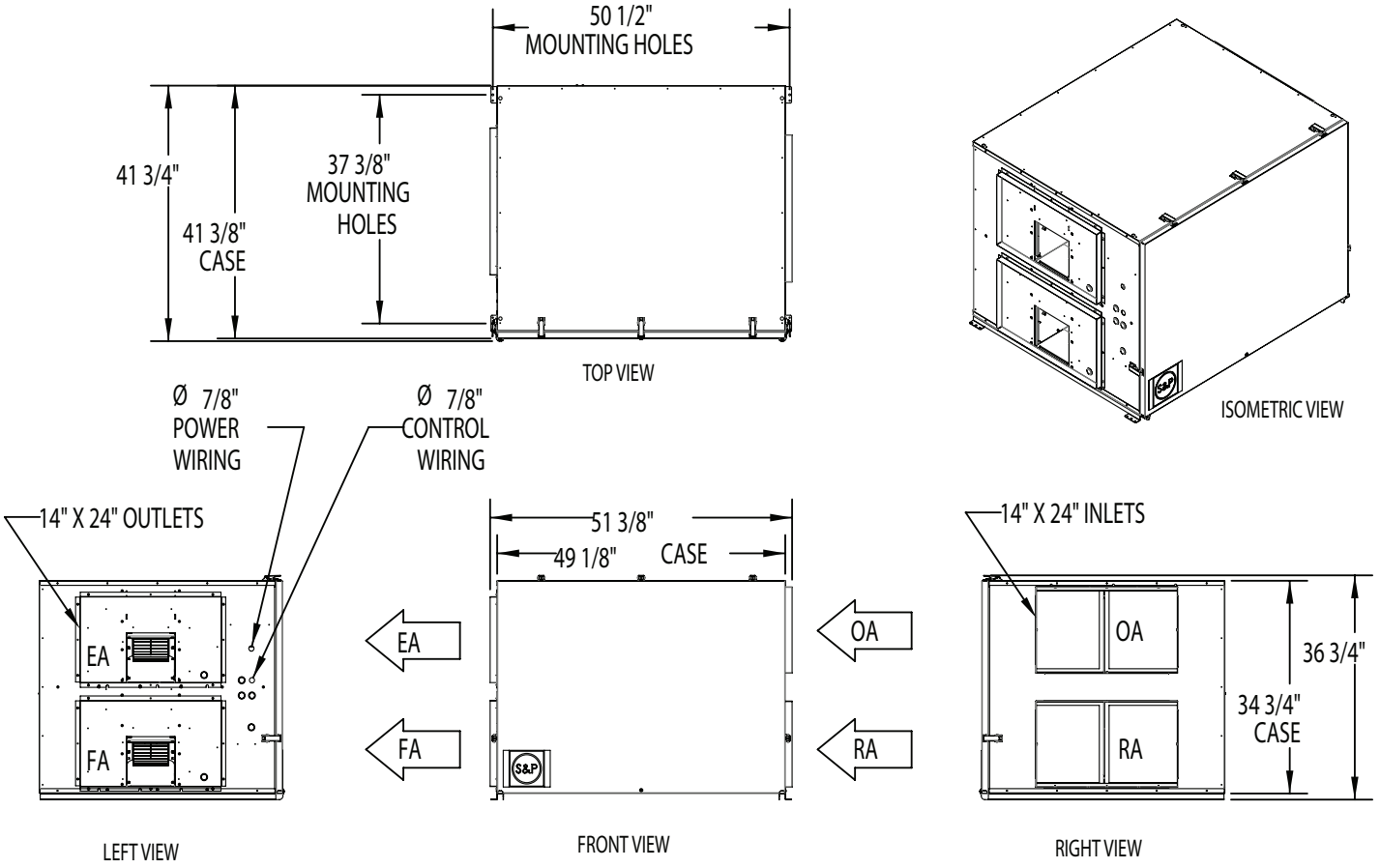
Note: Brake Horse Power (BHP) is for one blower motor package only.

Model TRC1600

Commercial Energy Recovery Ventilators (ERVs)

Dimensions

EA: Exhaust Air to outdoors
OA: Outdoor Air intake
RA: Room Air to be exhausted
FA: Fresh Air to inside



TRC Series Controls

Commercial Energy Recovery Ventilators (ERVs)

These controls are intended to turn S&P commercial energy recovery ventilation systems on and off at appropriate times. Specification, installation and set-up is an easy process. The TRC units come standard with a 24 volt transformer/relay package for easy interface with all TR controls, and any others that provide dry contact outputs.

It is not necessary that S&P controls be used to operate S&P units. A wide range of controls or building automation systems may be used. Additionally, TRC800 units are “VFD Ready” as a standard feature.

The S&P residential (TR) units have their own line of compatible controls that are not intended to operate S&P commercial (TRC) units.

STC7D-W - Digital Time Clock - Wall Mount

- Up to 8 on/off cycles per day or 56 per week
- 24 VAC power requirement
- Battery back-up
- Fits any 4” x 4” electrical box

SMC-C - Motion (Occupancy) Control - Ceiling Mount

- Passive infared sensor
- Adjustable time-off delay to 30 minutes
- 24 VAC power requirement
- Covers up to 1500 sq. ft. floor space
  walking motion coverage up to 22 foot radius

SCO2-W - Carbon Dioxide Control - Wall Mount

- Adjustable control from 600-2000 PPM
- Digital display
- 24 VAC power requirement
- Computer/BAS interface for information and control
- Self calibrates during periods of low occupancy

SHW-20 - Dehumidistat

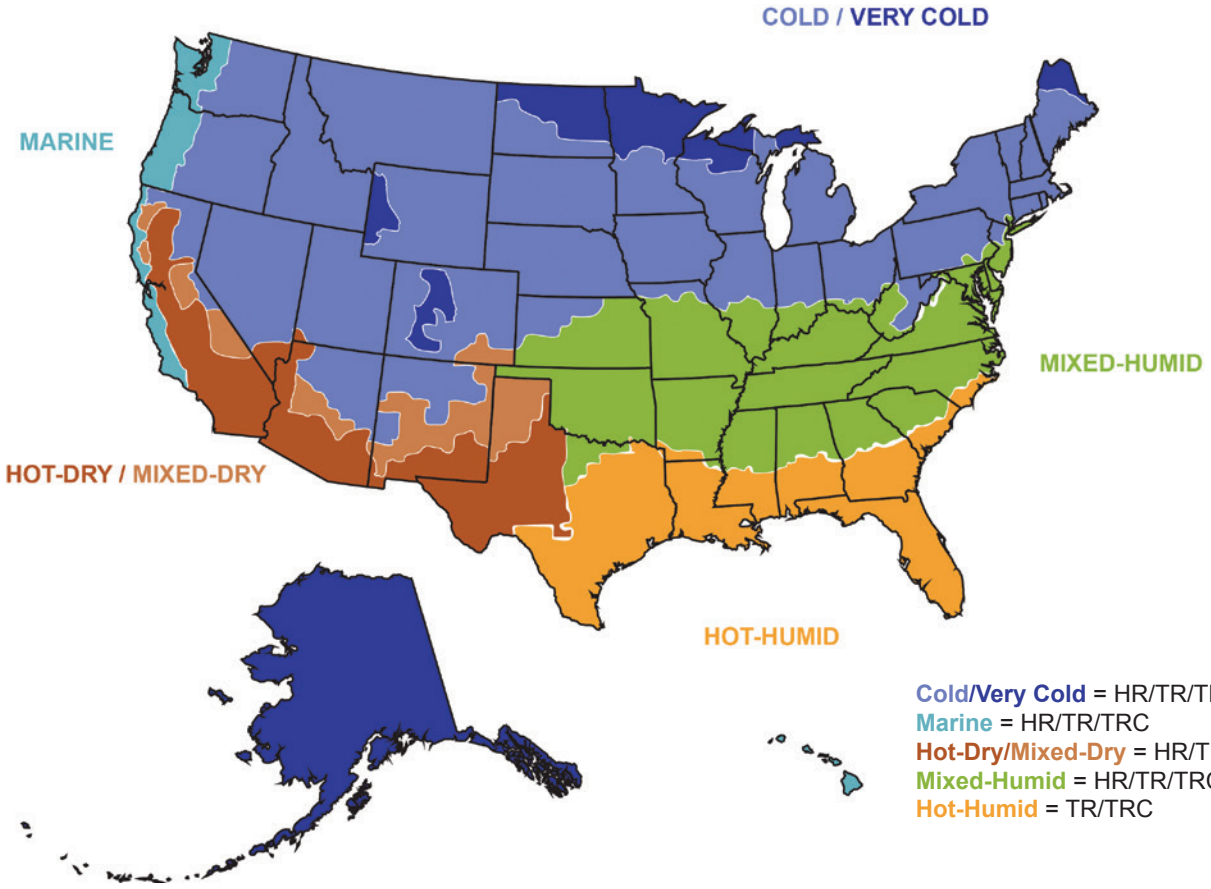
- Rotary dial dehumidistat
- Turn the dial to set desired humidity level
- Designed for convenient installation in bathrooms, kitchen or laundry room
- Dehumidifies when inside air is more humid than the set point
- **Caution:** the outside air must be less humid than the indoor air for this to work.

FT247 - Programmable Fan Timer

- Provides 7 ON and 7 OFF events per day
- LCD display
- Rechargeable battery back-up
- Push button activation

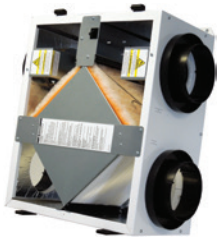
When to Use a TR or HR*

Heat Recovery and Energy Recovery Ventilators



Cold/Very Cold = HR/TR/TRC
Marine = HR/TR/TRC
Hot-Dry/Mixed-Dry = HR/TR/TRC
Mixed-Humid = HR/TR/TRC
Hot-Humid = TR/TRC

Models HR100V, HR160H, and HR220H

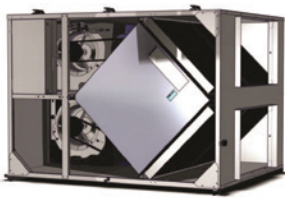


Model TR90/TR90G

Models TR130, TR200 and TR300

Model TRC500

Model TRC800



Model TRC1600

*These are S&P's suggestions for our models HR, TR and TRC.

ERV/HRV Summary

Heat Recovery and Energy Recovery Ventilators

Q: Energy Recovery Ventilators (ERV) and Heat Recovery Ventilators (HRV) both moderate extremes in ventilation air temperature so what is the difference?

A:

ERVs
- Transfer BOTH heat AND humidity
- Use enthalpic core
- S&P's TR and TRC are ERVs

HRVs
- Transfer ONLY heat
- Use aluminum core or simple plastic cores

Q: Can ERVs be used in climates subject to cold winters?

A: Yes! Because ERVs transfer both heat and humidity they are the perfect choice for any climate. In the winter ERVs:
- Warm outdoor air close to room temperature
- Use heat that would otherwise be lost with the exhaust air.
- Transfer water vapor to moderate extremes in humidity levels
- Help prevent moisture damage or over-drying of the home.

Q: Why are ERVs better than HRVs?

A: HRVs and ERVs are similar in that they both:
- Improve Indoor Air Quality
- Moderate extremes in ventilation temperature
- Use heat that would otherwise be lost with the exhaust air in the winter
- Provide necessary fresh air while pre-cooling in the summer

ONLY ERVs have the ability to transfer water vapors or moisture so they:
- Help prevent over-drying of the home in colder seasons
- Lessen the demand on the air-conditioning system in warmer seasons
- Are typically 3x more energy efficient in the summer than products (or units) that transfer only heat (HRVs)

Q: Why are S&P's TR and TRC the Ultimate ERVs?

A: S&P's TR and TRCs provide the same benefits as other ERVs on the market. Major advantages include:
- More heat transfer than most HRVs
- More humidity control than other plate exchangers
- Simplicity and positive airstream separation not offered by wheel type ERVs
- 10-year core warranty

About S&P

A Global Strategy - A Local Policy

S&P was founded in the locality of Ripoll (Spain) in 1951 by the engineers Eduard Soler and Josep Palau. From the beginning they had the clear vision that the future would depend on the expansion abroad, at first towards Europe, then to continue in the rest of the world markets.

Philosophy

The principle philosophy on which S&P was based on and continues to base its projects are:

Own technology: Key to any S&P projects, the concept has to be strong and consolidated over time. It is necessary that it is based on creativity and innovation to provide products, that offer benefits to the market. S&P has registered, throughout its history, over 140 patents, on more than 20 industrial models and some 120 on utility models.

Internationalization and Growth: It was clear that the guarantee of the future of the company was to open up to the world and to enter into new markets with high levels of competitiveness. This requires both a constant improvement of the existing products and development of new innovative designs. At present S&P is a world leader in ventilation, with production centers in Europe, America and Asia. A powerful distribution structure, through subsidiaries and exclusive distributors, allows S&P to be present in all the world markets, giving coverage and excellent service.

Self-financing: One of the strengths of S&P has been the constant growth and the policy of reinvestment of profits in a continuous technology improvement in the field of research & development, production and commercialization. This has allowed S&P to be a self-financed company with total independence in the decision making.

Research: In the R+D+I department, more than 60 engineers and technicians, equipped with the most modern design systems, work to obtain products with the best features. Sophisticated software allows the simulation of the behavior of the equipment already in the process of design. The goal is clear: A commitment to our customers to achieve the quality levels they expect from us.

Basic Pillars

On the philosophical principles of the project of S&P, there are some basic pillars on which the company is sustained:

Personal development: At S&P we promote the human factor encouraging teamwork, the contribution of ideas, internal promotion and training. We encourage the delegation of responsibilities, giving confidence and full respect of the individual with the aim of ensuring that people feel part of a common project and are reflected by the Company's values.

Excellence in the management: Factors we consider fundamental are dedication, honesty, self demand, and determination to do all things well, to achieve the levels of quality and service required by our customers.

Product: Today the S&P catalog offers a range of ventilation products, both commercial and residential, with solutions for every need. With constant development work to ensure our customers and end users, not only the choice of the best model, but also the required design for ease of installation, and a full guarantee.

Quality: At S&P the contribution to the final quality begins in the design of the products. From that point on, quality remains at the center of the development throughout the company, finishing in the after-sales service. For this reason, our company is recognized all over the world for its high level of reliability of all the products offered in our catalog.

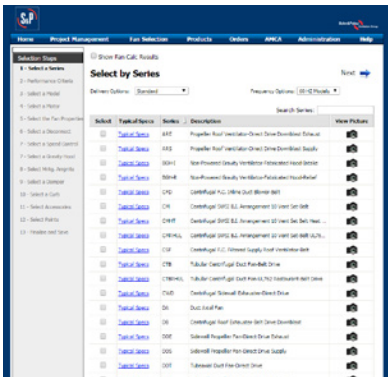
Respect for the environment: A policy that was not respectful with the environment would be incompatible with the S&P philosophy. Our actions today implicates us deeply in the legacy that we are going to leave our children.

About S&P

Customer Focus

In a market as competitive as the current one it is simply not enough to produce excellent quality. A company should offer products and a wide range of services for its customers and consultants. At S&P this principle is very clear. This is why we have salesmen with high technical skills, a highly trained and motivated customer service team, and a range of technologically advanced tools available to our customers to make finding, purchasing and servicing S&P fans as easy as possible.

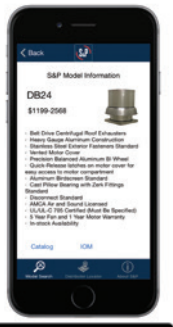
Industry Leading Online Fan Selection Program



Optisizer2 is a state-of-the art fan selection program designed by S&P to help professionals choose the most suitable product for every case. Optisizer2 allows our customers to obtain product information including submittal drawings, detailed fan performance and typical specifications.

The program allows a user to follow a project from the initial fan selection, through the bidding and submittal phases, after which they can place their order in the program, and finally track their order all the way to the delivery of the project to the final destination. As an online based program our customers can complete their fan projects from anywhere in the world.

Mobile App to Find Fan Information On-The-Go



Download on the App Store

ANDROID APP ON Google play

S&P's Fans to Go mobile app was designed to let you easily find the S&P Fan you need anytime, anywhere. In the app you can use the Model Search by entering either a competitor's model or S&P model to get the best possible results for your search. Once you find the model you need you can link to the catalog pages, installation instructions and product videos.

If you are ready to find out more information, get a quote, or purchase a fan, you can use the Distributor Locator to find the closest S&P distributor based on your current location.

The S&P Fans to Go mobile app is available for both Apple iOS and Android OS. Search "S&P Fans to Go" in the App Store or Google Play.

Comprehensive Websites for Everything S&P

The S&P websites (www.solerpalau-usa.com & www.solerpalaucanada.com) were designed to make finding fan information as quick as possible. You can easily find the fan model you are looking for and download catalog pages, installation instructions and product videos directly from the sites.

Our websites are your source for the latest code and application information and we have detailed explanations for how S&P products can help solve your ventilation problems.

The website also has a wide range of product resources such as product comparisons, warranty information, white papers and links to outside sources for both residential and commercial products.

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