



HRV LT-15, LT-20 HEAT RECOVERY VENTILATOR

PRODUCT
SPECIFICATIONS
AND ENGINEERING
INFORMATION
SUBMITTAL DATA
746-7-00

ALDES Model HRV LT-15 and LT-20 are compact heat recovery ventilators designed to exhaust stale indoor air and supply fresh air from outdoors. When operated at full speed, the LT-15 unit can meet the general ventilation requirements (0.35 air changes per hour—ASHRAE 62-1989) of a home up to 2800 sq. ft. and the LT-20 of a home up to 4000 sq. ft. (On a smaller home, they can be operated at lower speed, reserving excess capacity for temporary increases in humidity or other contaminants.) They are technically advanced controlled mechanical ventilation systems designed to meet the requirements of modern, tightly built and highly insulated homes. They provide a consistent supply of fresh air while lowering heating costs during the winter by transferring heat from the exhaust air to the fresh air stream. During the summer they also reduce the load on the air conditioner by lowering the temperature of the fresh outdoor air. (For southern climates, where air conditioning costs are the major concern, one of the ERV models should be considered, because of their ability to reduce the humidity of the fresh air as well as lowering the temperature.) The systems provide an economical solution for excessive indoor humidity, odors, stuffiness, and other indoor air pollutants.

As the two air streams pass through the HRV, they are separated by thin plates of aluminum in the core. The air streams do not mix, so there is no recontamination of the fresh air by stale air. Heat passes through the thermally conductive aluminum from the warmer air stream to the colder air stream, recovering most of the energy otherwise lost to the outdoors.

DUCTING CONSIDERATIONS

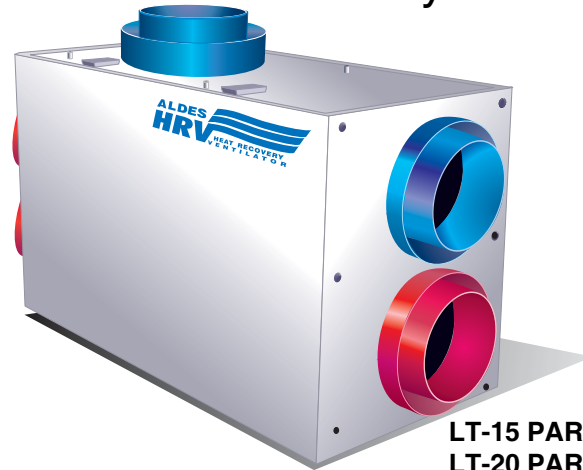
Equally important to providing fresh air supply and exhaust of stale air is the means of assuring internal distribution of fresh air throughout the occupied space(s) and exhaust of stale air from highly polluted areas. The designer/specifier should select the means of internal distribution when the ventilation system is planned. Three popular methods are detailed below, with advantages and disadvantages for each type.

FULLY DUCTED SYSTEM

Dedicated exhaust and supply ducting to all spaces that can be closed. Fresh air to bedrooms, dens, office spaces, etc. Exhaust air from zones that produce high levels of pollutants, such as kitchen, bathrooms, laundry, utility rooms with stored household chemicals, etc.

Advantages: Lowest operating costs, relying only on the small low power blowers of the HRV, instead of large central air handlers in furnaces or heat pumps. Improved ventilation efficiency, as pollutants are exhausted with minimal mixing in the occupied spaces and freshest air is delivered to zones where occupants spend large amount of time. Quiet bathroom and kitchen exhaust as compared to conventional fans for these areas. Reduced cost of equipment to ventilate these areas. Reduced roof and wall penetrations for independent fans.

ALDES HRV LT-15, LT-20 Air to Air Heat Recovery Ventilator



LT-15 PART NO. 28 045
LT-20 PART NO. 28 047

Disadvantages: Higher installed cost for additional ductwork. Unless bedrooms are provided with some form of zoned heat, cooler supply air to bedrooms may result in cooler temperature in these spaces.

HALF-DUCTED SYSTEM

Similar to fully ducted system, except supply air delivered to a central location or to the return of a forced air system.

Advantages: Low installation costs, as ductwork is reduced. Good tempering of outdoor air when ducted to the return of the furnace or heat pump. Good ventilation efficiency, as pollutants are exhausted with minimal mixing in the occupied spaces. Quiet bathroom and kitchen exhaust as compared to conventional fans for these areas. Reduces cost of equipment to ventilate these areas. Reduced roof and wall penetrations for independent fans.

Disadvantages: Higher operating costs when air handler is required to distribute fresh air. Greater potential for draft with high air volumes circulating at room temperature.

FULLY INTEGRATED WITH FORCED AIR

The exhaust air is drawn from the return duct and fresh air is supplied downstream in the return duct or in the forced air heating supply ducting.

Advantages: Lowest installation costs, with minimal ductwork. Thorough mixing of fresh air throughout dwelling. Good tempering of outdoor air.

Disadvantages: Requires forced air handler to run continuously with the ventilation system, or internal short-circuiting of supply and exhaust will occur in the ducting. Higher electrical operating costs since air handler is required to distribute fresh air. Greater potential for draft with high air volumes circulating at room temperature.

GENERAL FEATURES

Thermally conductive aluminum heat exchange core, cross-flow design, easily removed for cleaning or service.

Efficient multi-speed motor drives a centrifugal blower in each air stream. Quiet, high efficiency PSC motor. 120 V., 1.4 Amps

Washable filters on each air stream protect the core. Easy to access and clean.

Automatic defrost system activates when outdoor temperature falls below 25 °F (-4 °C). The defrost cycle is preset at the factory so that after 17 minutes of outdoor temperature below this set point, the motor driven damper closes the outdoor air connection, and opens the defrost port to draw warm indoor air across the core. After 3 minutes of defrost operation, the damper reverses to restore fresh air supply and close the defrost port. The 17 minute normal ventilation and 3 minute defrost cycle continue until outdoor air temperature rises above 25 °F (-4 °C). During the 3 minute defrost cycle, the HRV operates at high speed. The cycle times are installer selectable to meet the needs of different climates and operating conditions.

Casing is heavy gauge pre-painted steel to protect against corrosion, and minimize noise.

Installation accessories and controls make installation simple.

PERFORMANCE

HVI CERTIFIED

Net Supply airflow in cfm (L/s) against external static pressure

E.S.P.	LT-15 [cfm (L/s)]	LT-20 [cfm (L/s)]
0.1" (25 Pa)	177 (83)	214 (101)
0.2" (50 Pa)	164 (77)	206 (97)
0.3" (75 Pa)	156 (73)	193 (91)
0.4" (100 Pa)	143 (67)	184 (87)
0.5" (125 Pa)	123 (58)	170 (80)
Max. Sensible Effectiveness	78%	69%
Test Parameters	67 cfm (32 L/s)	127 cfm (60 L/s)
Sensible Effectiveness	76%	67%
Sensible Efficiency @ 32° F (0° C)	66%	60%
Sensible Efficiency @ -13° F (-25° C)	60%	59%
VAC @ 60HZ	120	120
WATTS / High @ .3" w.c.	173	182
WATTS / High @ .3" w.c.	63	70

SPECIFICATIONS

THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE: The cross-flow heat recovery core transfers heat between the two air streams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS: Each air stream has one centrifugal blower driven by a common PSC motor. 120 VAC, 1.4 Amps.

FILTERS: Washable air filters in exhaust and supply air streams.

MOUNTING THE HRV: Four 10-24 5/8" threaded inserts at corners of case designed to accept four PVC reinforced polyester straps that are supplied with the unit.

DEFROST: Damper defrost system; defrosts automatically as the outdoor temperature falls.

CASE: Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections 2 - 1/2" (12 mm) OD.

WEIGHT: 71 lbs. (32.5 kg) **SHIPPING WEIGHT** 73 lbs. (33.5 kg)

CONTROLS: Basic **ON/OFF** control is maintained with the 3 foot, 120VAC, 3-prong electrical cord providing power to the HRV.

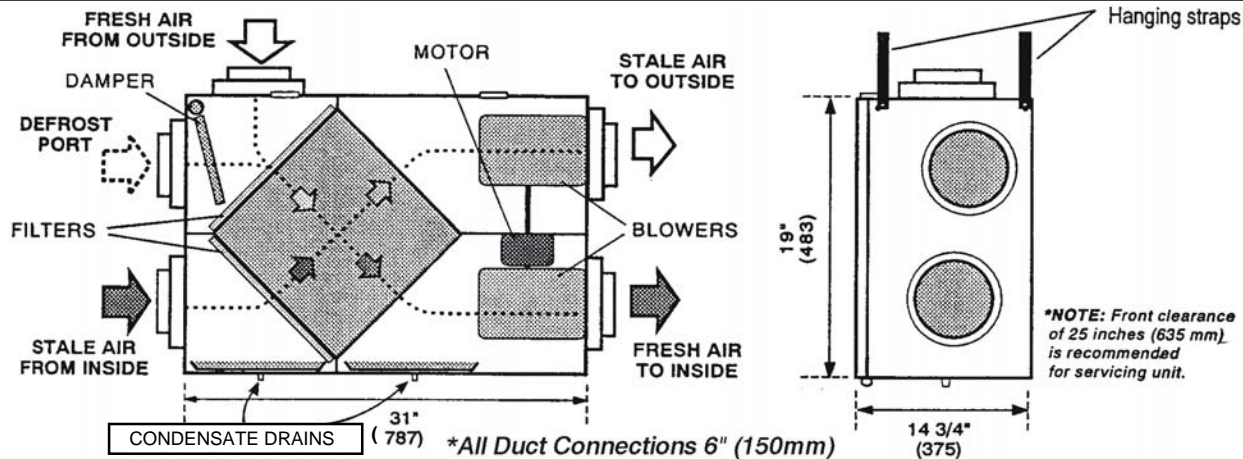
HRV DEFAULTS TO LOW SPEED when plugged in. **HIGH SPEED** option is accessible by connecting remote, low voltage, 2-wire controls (up to 10) or (up to four **28 884** -20 minute fan timers) to designated terminals inside electrical box of HRV.

STANDARD SPEED SETTING can be increased by manipulating jumpers in electrical box. **OFF (Standby) /LOW** or **OFF/HIGH** speed operation also available by manipulating jumpers.

OFF, LOW and HIGH speeds are all remotely controllable when an optional **28 883** Dehumidistat Ventilation Control (DVC) is connected to the HRV's electrical box.

APPROVALS: **SAFETY:** ETL Tested / Certified to UL 1812
CSA

PERFORMANCE: HVI Tested / Certified to CSA 439-88



OPTIONS

- 28 884** 20 Minute Fan Timer (3 wire)
- 28 998** Sixty Minute Remote Timer (2 wire)
- 28 883** Dehumidistat Ventilation Control, Remote Dehumidistat w/ HRV system on/off switch
- 28 882** Dehumidistat Control, Remote Wall Mount, Horizontal Mounting, Low Voltage white)
- 22 026** Weatherhoods, 6" (150 mm) c/w 1/4" (6 mm) screen



All units conform to
CSA and UL
Standards

WARRANTY
Units carry a 15
year warranty on
the heat recovery
core and a 2 year
replacement parts
warranty.

PROJECT	DATE	SUBMITTED BY	CONTRACTOR

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