

Fujitsu Mini-Split Heat Pump and Broan ERV Installation Proposal

Client: Jamie Isaacson
Address: 30 Monument Street
Portland, ME 04101
Date: May 21, 2015



x5



Fujitsu RLFXZH Multi-Zone Heat Pump System

\$17,398

- 10.3 HSPF
- Rated for operation down to -15°F
- Whisper quiet
- Provides clean heating and cooling
- Air filtration built-in

Broan ERV **\$8,368**

- Programmable Controller
- 80% Heat Recovery
- Insulated Duct
- ECM motor

**Total
Cost**

Fully Installed \$25,766
After Rebate **\$25,266**

Heat Pump Overview

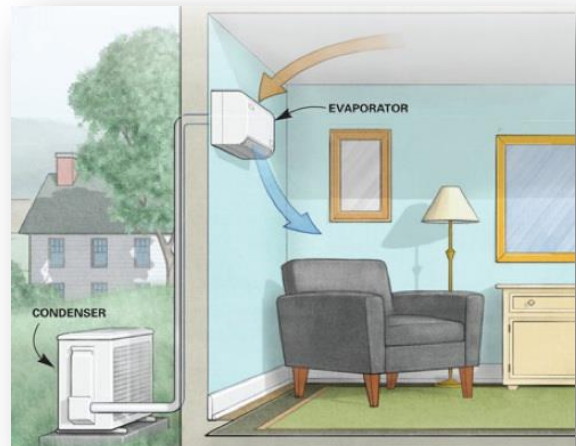
Based on an evaluation of your building's heating requirements, *ReVision Heat* proposes to install two Fujitsu Halcyon RLXFZH outdoor units with 5 indoor ceiling cassettes throughout the house and 1 wall cassette in the front bedroom. Each cassette requires a 25" square opening in the ceiling joists. This Fujitsu system is among the best in class, achieving the highest efficiency with the quietest operation, at only 20 dB for the indoor unit.

Component Specification

- Two (2) Fujitsu Halcyon AOU24RLXFZH outdoor units
- Three (3) AUU9RLF indoor units
- Two (2) AUU7RLF indoor units
- One (1) ASU7RLF indoor unit
- Independent thermostatic control for each unit

Fujitsu RLFXZH System Operation

The indoor unit is thermostatically controlled to provide both heating and cooling. When there is a call for either heating or cooling, the outdoor unit will turn on the fan, blowing air through the condenser unit outside. The compressor located in the condenser unit compresses refrigerant, which in turn transfers heat from the outdoor air to the refrigerant. The refrigerant then travels to the indoor unit, the evaporator, which in turn transfers heat to the room air via a fan located in the indoor unit.



The compressor is driven by a state of the art microprocessor, which varies the speed of the pump to match the heating or cooling load exactly. The units are rated down to -15°F degrees and will continue to operate at lower temperatures but the output is not guaranteed. In the heating mode, the colder it gets outside, the less efficient the heat pump is. The 24RLXFZH system has a Heating Season Performance Factor (HSPF) of 10.3 making the project eligible for a \$500 rebate from Efficiency Maine. The Seasonal Energy Efficiency Ratio (SEER) is 20.0 making the systems about twice as efficient as traditional AC units.



ERV Overview

Based on an evaluation of the heating requirements of the proposed building, ReVision Heat proposes to install one Broan ERV-140TE for fresh air makeup to ensure a healthy environment in a tight home. The system is designed primarily to keep the air fresh and assist the heat pumps in the distribution of air. Optimal performance will be assured through proper balancing of the unit and customer education for how to operate it efficiently. The system will be designed to provide for the unit's maximum ventilation, but it is adjustable up or down as needed to satisfy customer needs.

Component Specification

- Broan ERV-140TE
- VT5W Controller
- Rigid insulated duct
- Insulated flexible ducting where necessary and appropriate
- 3 Boost Switches
- 9 Diffusers

System Operation

This system is designed to provide either continuous or partial ventilation (20 minutes on, 40 minutes off or recirculation). Ventilation can range from 80-140 CFM. The system will be balanced and tested, and the owners will receive training on the operation of the system to allow them to adjust the settings.

Available Incentives

The Fujitsu heat pump system qualifies for a **\$500 rebate** through Efficiency Maine's Home Energy Savings Program. The program is subject to change without notice. The rebate will be made available after project completion. Please [read the Efficiency Maine Home Energy Savings Program Manual](#) for details.

Warranty

Fujitsu offers a limited 7-year warranty on the compressor and 5 years on parts.

Broan-NuTone provides a 2 year warranty on parts and a 5 year warranty on the ERV core.

ReVision Heat warrants our work for a period of 1 year. After one year the client will have the option of enrolling in a bi-annual heat pump maintenance agreement.



Scope of Work

Price to include the following:

- Provide Manual J heat loss calculations and electric heater sizing for site electrician.
- Provide and install six Fujitsu indoor units and two Fujitsu outdoor units.
- Provide and install all refrigerant and condensate piping.
- Provide and install drainage for condensate.
- Provide and install all line voltage and low voltage electrical wiring to electrical panel.
- Start up and commissioning by factory trained and EPA certified refrigeration technicians.
- Purchase and installation of the ERV
- Installation of ducting and diffusers in the following locations:
 - Supply air delivered to bedrooms, main room
 - Exhaust in bathrooms, kitchen
- Installation of outdoor diffusers
- Installation of boost switches in bathrooms
- Balancing system for internal and external air as well as balancing internal air flow

Price does not include the following:

- Any work not listed in the scope of work above
- Installation of electric heat (to be completed by third party electrician)

Payment Terms

30% due upon acceptance of this proposal

30% due upon delivery of heat pump system

30% due upon substantial completion of installation

Remainder due upon fulfillment of the contract

Next Steps: When you are ready to proceed with this project, please contact ReVision Heat and we will send you an installation contract for signature as well as an invoice for the initial deposit.

Price quoted valid for 30 days.

Important Notes

- If the client specifies design changes which result in the need for materials or labor beyond the scope of this proposal, these should be discussed as early as possible. A change order will be negotiated and drawn up in writing after the details are agreed upon by the client and ReVision Heat. Non-contract labor is billed at \$85/hour; this rate applies to additional travel time and additional office time (design changes, preparation of a change order, etc.).
- Estimates of equipment or system efficiency, performance or expected energy savings are for informational purposes only. Due to the large number of variables affecting efficiency and



performance that are beyond ReVision Heat's control, ReVision Heat makes no warranty or guaranty that the equipment or system installed in accordance with this proposal shall perform in accordance with such estimates.

- ReVision Heat requires that all necessary areas be accessible to perform the scope of work. This includes, but is not limited to removal of belongings or debris from the basement, crawlspaces, closets, storage areas or other areas in the living space, clearing of snow from pathways and access doors. Areas of access will be clarified before work begins. Any required removal of belongings, debris, or snow will be billed at the non-contract labor rate of \$85/hour.