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HVAC FACT SHEET

# Efficient Gas Rooftop Units

Reduce annual HVAC energy use by up to 40%.

## All rooftop units are convenient, but most are wasteful.

Rooftop units (RTUs) – HVAC appliances installed on building roofs – supply heating and/or cooling to meet the thermal comfort requirements of commercial buildings. Inherently convenient, RTUs package heating, cooling and ventilation equipment together in a space that is accessible to technicians without taking up precious real estate. However, most RTUs are using much more energy than necessary.

Efficient gas RTUs are the exception. By incorporate a combination of energy-saving features, including secondary condensing heat exchangers, high insulation values, improved cabinet design, low-leakage dampers, and heat or energy recovery, these easy-to-install and readily available systems deliver reliable energy savings in Northern climates.

Efficient gas RTUs can take a variety of forms to boost overall efficiency in several ways. One approach uses secondary condensing heat exchangers to capture a greater percentage of the gas combustion energy. The secondary heat exchanger transfers additional energy from the flue gas into the supply air stream, resulting in lower flue temperatures and additional energy captured from the condensation of water vapor in the flue gas.

Other types of efficient gas RTUs provide comparable efficiency results without requiring a condensing system at all. These systems incorporate additional energy-saving measures, including insulation and higher performance dampers, to save considerable energy at small incremental costs. Additionally, heat and energy recovery equipment can provide up to 40% total HVAC energy savings when installed in an efficient gas RTU that introduces outside air.

### COMMON APPLICATIONS FOR EFFICIENT RTUS

1/ Small-to-medium commercial buildings, under three stories

2/ Retail, small office, grocery and schools

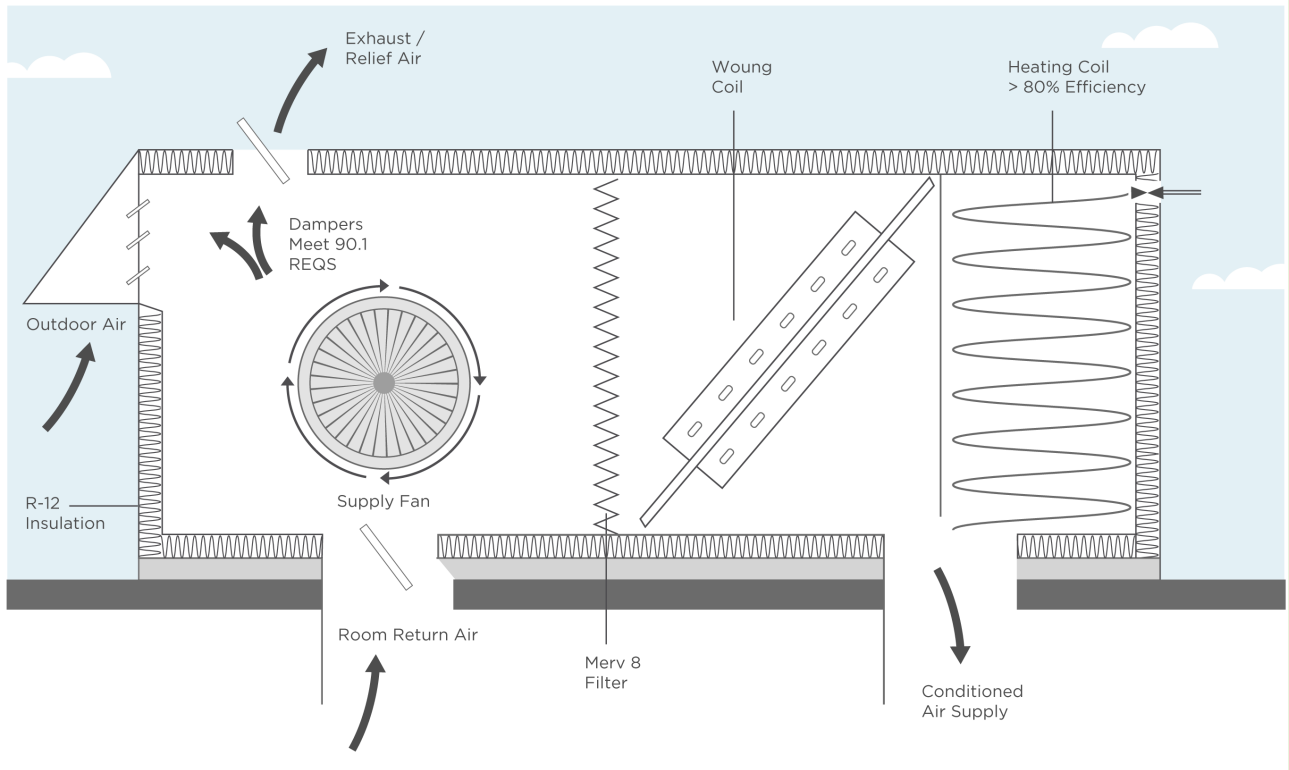
3/ Buildings with existing RTUs

# The better and best efficient gas RTUs.

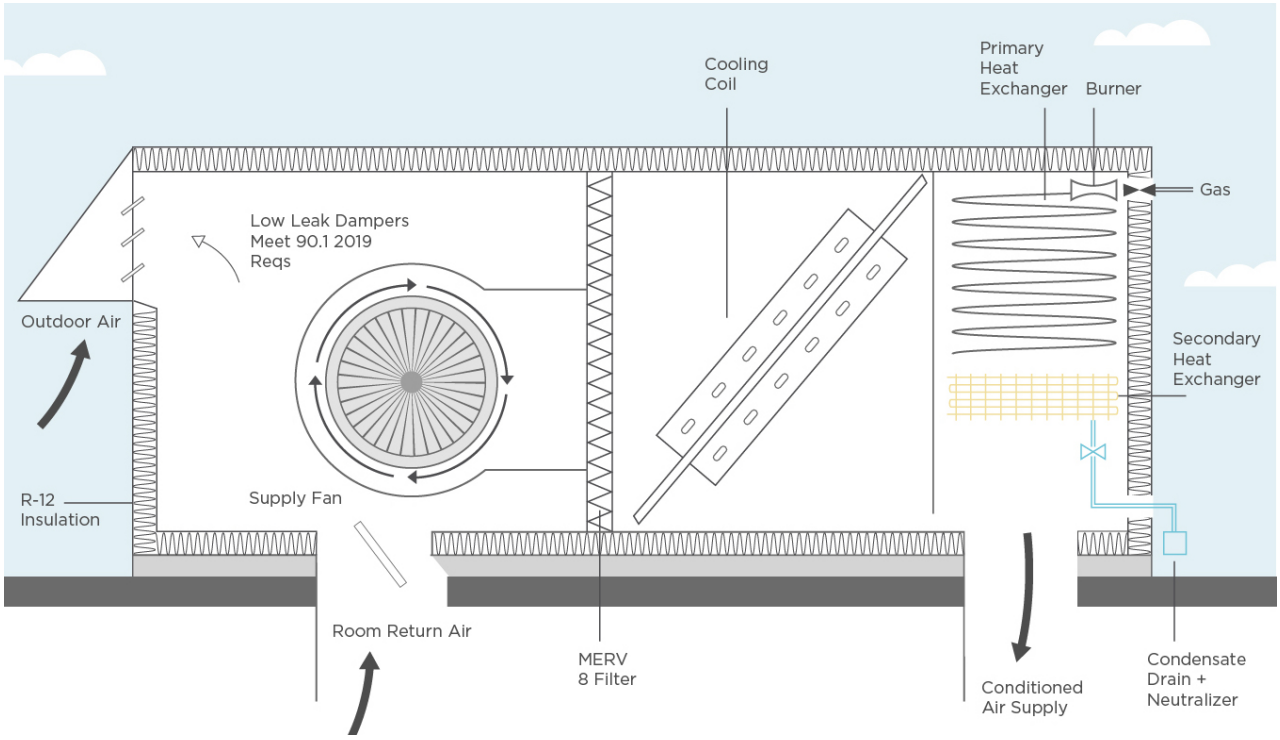
Based on field and lab testing completed by the Northwest Energy Efficiency Alliance (NEEA), efficient gas RTUs can be classified into two categories based on their energy performance:

| TIERS BASED ON PERFORMANCE | |
|---|---|
| **Tier 1 units** provide better efficiency than standard RTUs. | These units have at least 80% Thermal Efficiency (TE) and additional energy efficiency gains via increased insulation and reduced damper leakage. This makes them up to 15% more efficient than a standard RTU (depending on climate zone and building type). |
| **Tier 2 units** are the highest performing RTUs available. | These units include everything in Tier 1, and either a) the furnace is a condensing gas furnace, or b) the unit includes heat or energy recovery with an energy recovery ventilator (ERV). These upgrades can result in units that are up to 40% more efficient than a standard RTU (depending on climate zone and building type). Tier 2 units are particularly ideal for buildings with higher occupancies and/or higher than average heating needs. |

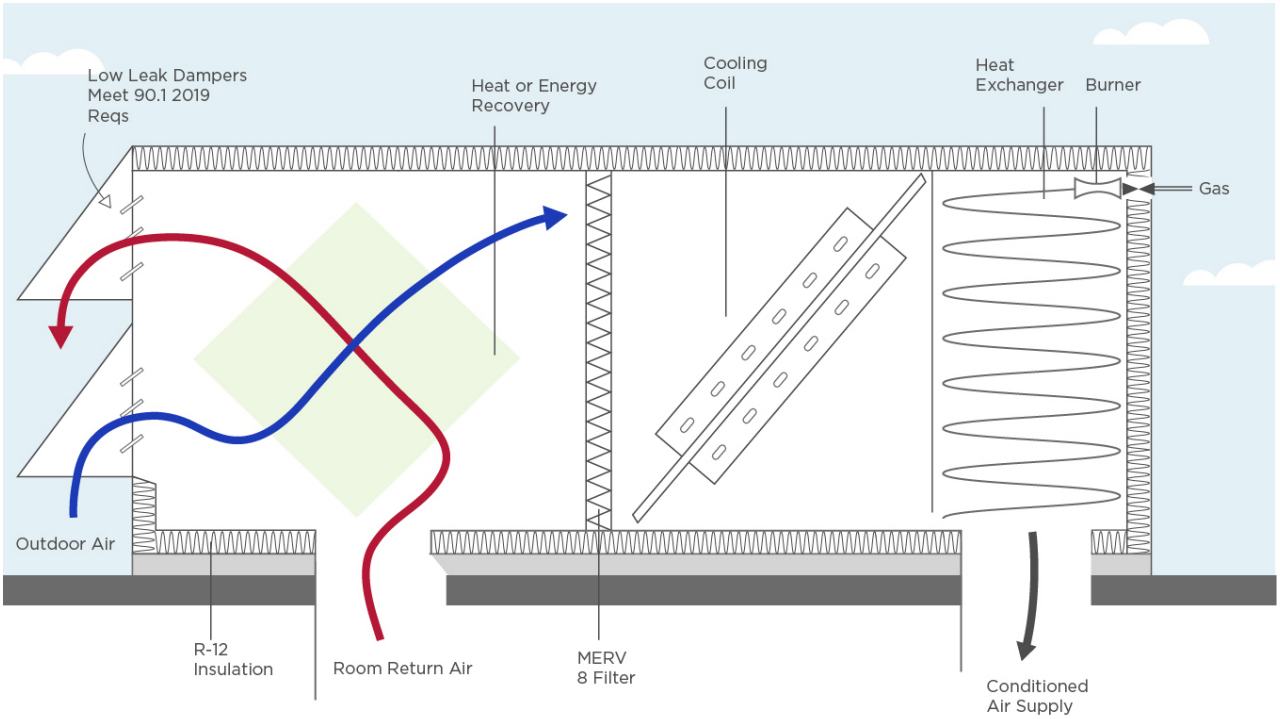
## Tier 1



## Tier 2: Condensing




## Tier 2: Heat Recovery




Note: These drawings are for illustration purposes only and do not reflect the exact system design and components of every available model. Contact your manufacturer for exact system schematics.



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