# The better and best efficiency in gas rooftop units.

Field and lab testing completed by the Northwest Energy Efficiency Alliance reveals two distinct efficiency tiers for efficient gas rooftop units.

An efficient gas roof top unit (RTU) provides all the accessible convenience of a neatly packaged standard RTU, but without the wasted energy. Installed on a building's roof in the same way as a standard RTU, efficient gas RTUs come in a variety of forms, each of which improves HVAC efficiency while continuing to achieve the building's thermal comfort requirements. Recent field and lab testing from Northwest Energy Efficiency Alliance (NEEA) demonstrates that among the approaches to efficient gas RTUs, there are two discrete performance tiers, along with two separate pathways to achieve the most efficient RTU performance available.

## Tiers of efficiency: Efficient gas RTUs

While all efficient gas RTUs perform better than standard RTUs, there are two tiers of performance among this high-performance product category. Tier 1 represents a more efficient option compared to standard RTUs, whereas Tier 2 represents the highest performing RTUs available today.

**Tier 1**
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.

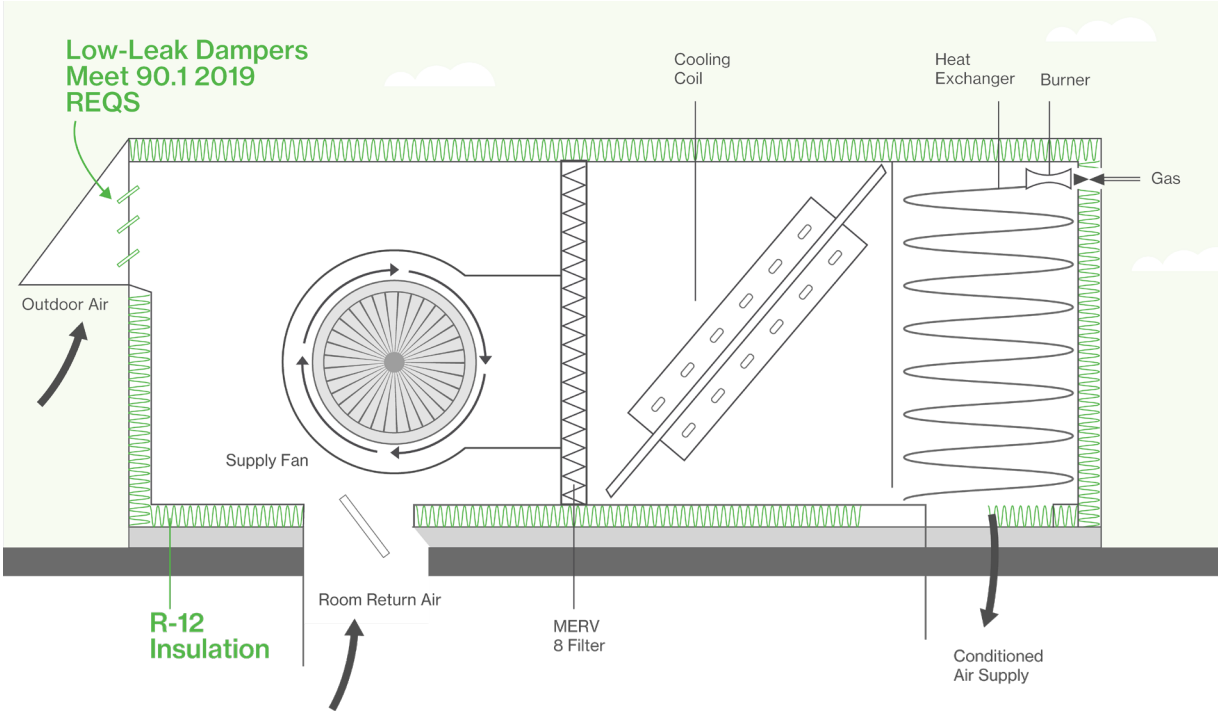
**Tier 2**
These units include everything in Tier 1, but with efficient upgrades that can result in an efficiency improvement of up to 40%. Particularly ideal for buildings with higher occupancies and/or higher than average heating needs, Tier 2 units can be achieved by taking one of two approaches:

*Tier 2a*
1. *Everything included in Tier 1*
2. *The unit includes heat or energy recovery with a heat/energy recovery ventilator*

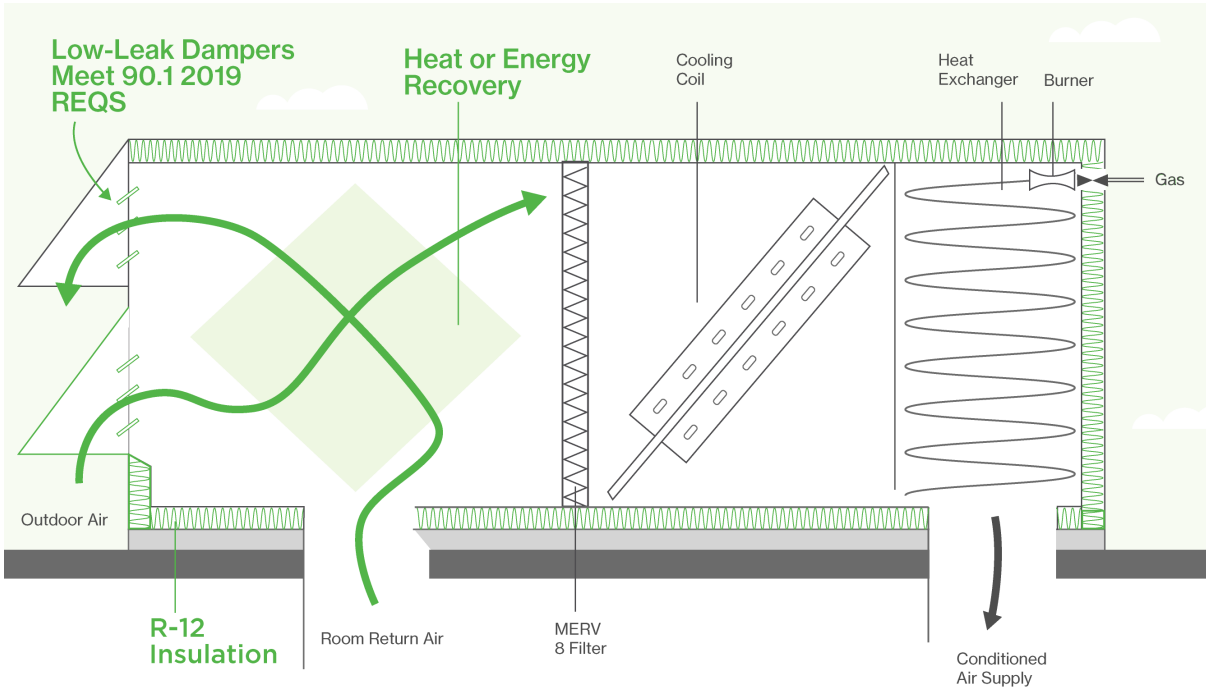
*Tier 2b*
1. *Everything included in Tier 1*
2. *A furnace with a condensing heat exchanger (90+% TE)*

While a Tier 1 efficient gas RTU is always preferable to a standard RTU, Tier 2 offers multiple pathways to achieve the highest standard in RTU efficiency. And for those who prefer the flexibility of a performance path without prescriptive measures, the NEEA-developed Total Heating Season Coefficient of Performance ($TCOP_{HS}$) calculator determines a product's $TCOP_{HS}$ value using existing test results and unit characteristics.

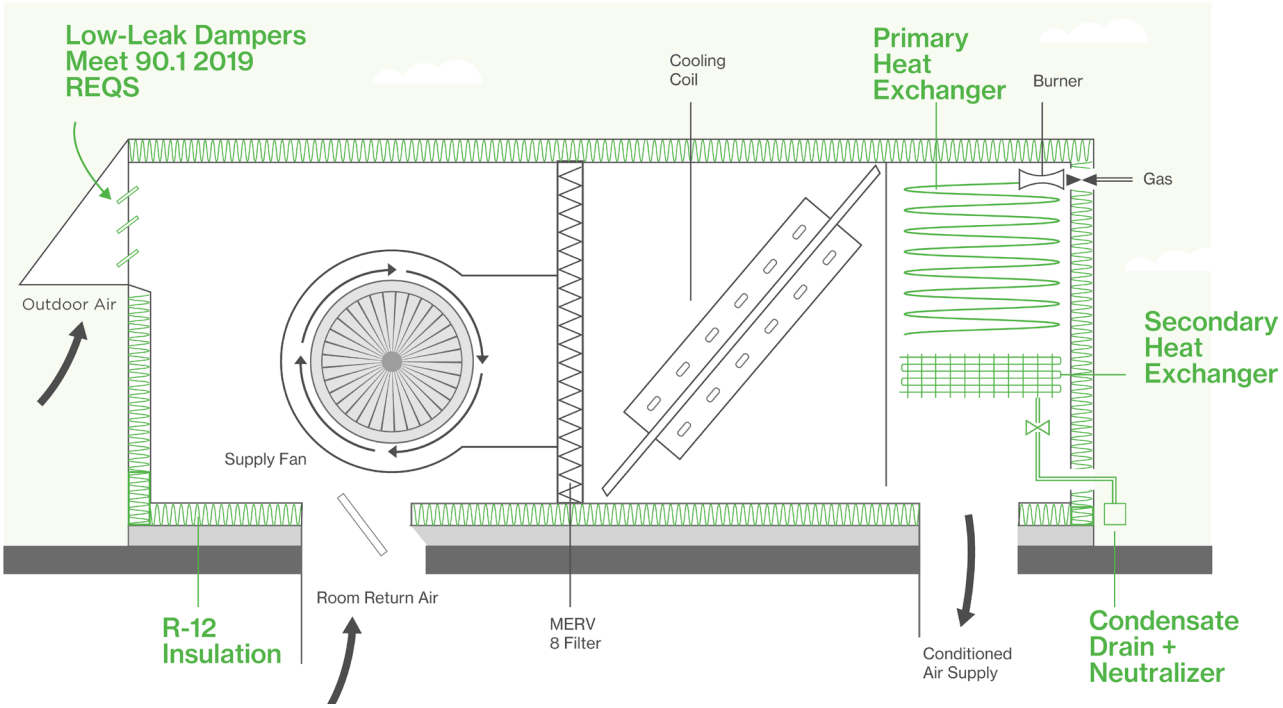
## Tier 1: Efficient RTU




## Tier 2a: Efficient RTU – Energy Recovery Ventilation



### Tier 2b: Efficient RTU – Condensing




## The best applications for the highest efficiency RTUs

Both tiers of efficient gas RTUs are ideal for a variety of commercial building applications, including:

- Small-to-medium commercial buildings
- Retail, small office, grocery and schools
- Existing buildings with a standard RTU already in place