



## AE-Air HydroTech Slim 16 Water Source Heat Pump

The *Smallest* Footprint  
in the Industry



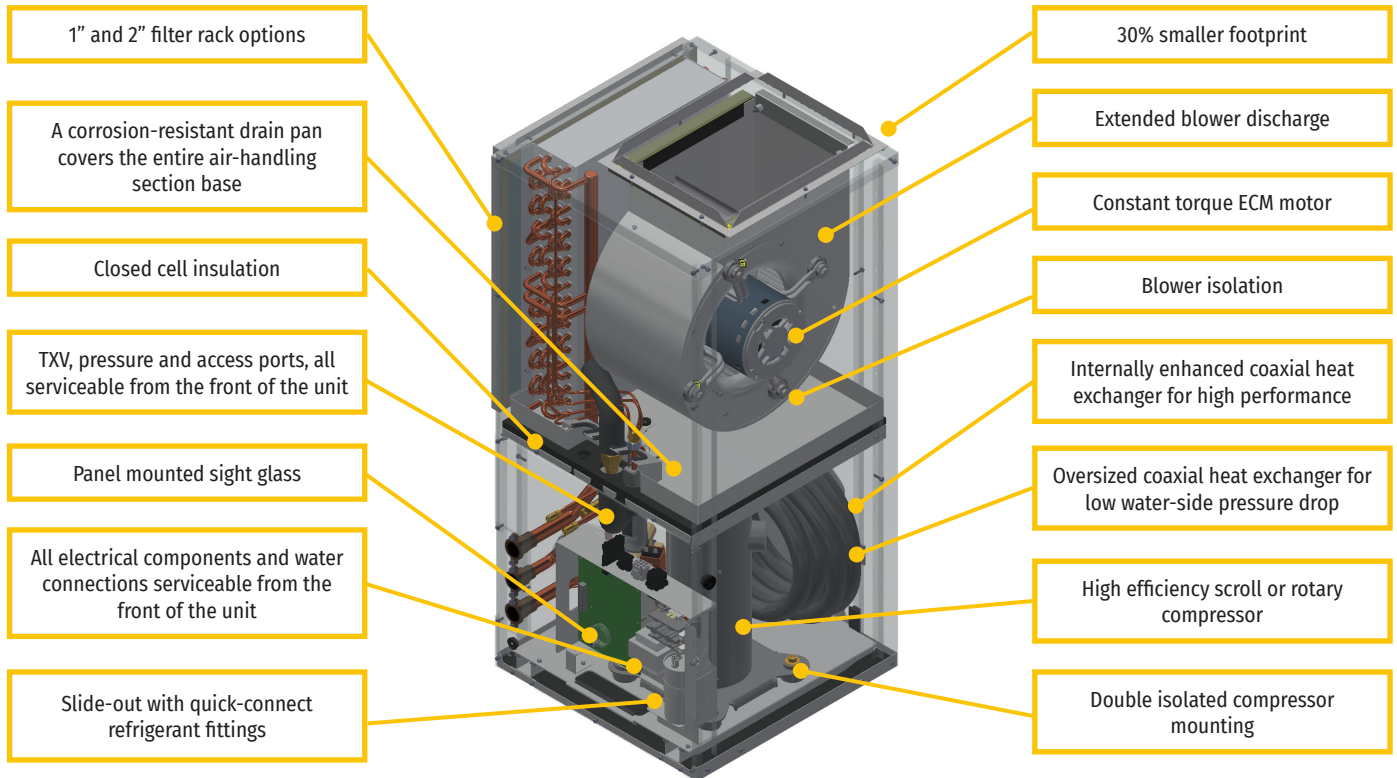
AE- Air is proud to announce the release of the HydroTech Slim 16, an ultra-compact vertical water source heat pump designed from the ground up to address the needs of architects, owners, and contractors.

The Slim 16 reduces unit footprint over the typical vertical water source heat pump providing the same level of modularity seen in vertical stack systems while providing class-leading performance with efficiencies up to 16.8 WATER LOOP COOLING (WLC) EER.



The design of multi-family and high-rise HVAC systems create an inherent challenge due to complex building loads, high degree of required efficiency, and the desire to minimize mechanical areas. Water-source heat pumps are proven to be the most cost effective and energy efficient method for heating, and cooling large buildings.

Traditionally, water source heat pump (WSHP) systems are placed in mechanical rooms or in a utility closet near the occupied space. In vertical installations, the system is found in utility closets located within the living space with ducted supply and accessed through a louvered closet door. WSHPs in these applications are typically packaged in a single unit with all main refrigeration components brazed together. These installations can be seen in multi-family and hospitality applications due to their flexibility.



## Challenges with Water Source Heat Pump Installations

- ✘ Extra space required to install the unit
- ✘ Difficulty in servicing units due to their smaller size and brazed components
- ✘ Limited efficiencies due to smaller heat transfer areas in small mechanical spaces
- ✘ Increased sound levels

## Solution - The HydroTech Slim 16 Compact Water Source Heat Pump

- ✔ Smaller footprint allows for more usable space
- ✔ All service access from front
- ✔ Highest efficiency for reduced operating costs
- ✔ Sound reduction

# DEVELOPERS

## SMALLER FOOTPRINT

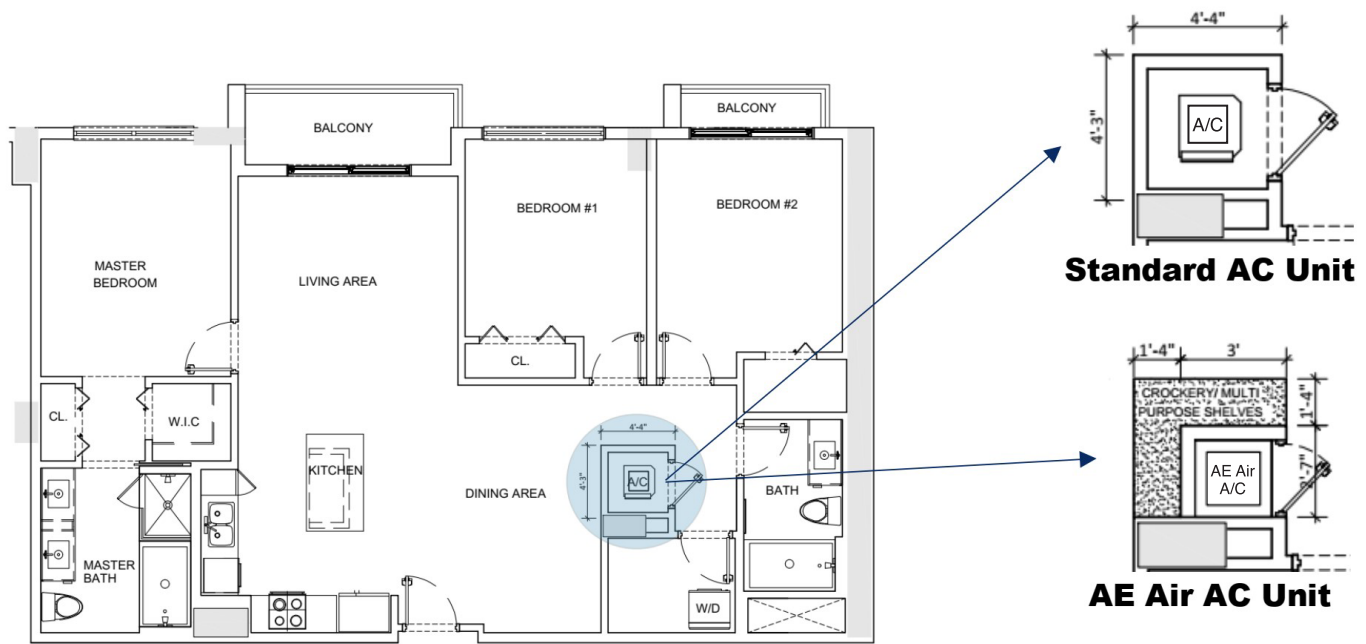
The HydroTech Slim 16 was designed specifically for architects and engineers to have a compact footprint in order to minimize the space needed for the mechanical installation. The smaller footprint allows them to minimize the mechanical closets increasing the livable space available for larger kitchens, bathrooms, or common areas.

A typical 2 ton 13 EER vertical water source heat pump will have a footprint of 21.5" x 21.5". Closets are often oversized to allow for access to the side panels as many competitor units are not serviceable from the front effectively, wasting valuable space.



	FOOTPRINT
Competitor 1	21.5 x 21.5 x 40
Competitor 2	21.5 x 21.5 x 39.25
Competitor 3	22.5 x 22.2 x 36.2
Competitor 4	22.5 x 26.2 x 40.2
<b>AE Air WSS6024</b>	<b>18 x 18 x 40</b>

*The Slim 16 offers a compact 16"x16" and 18"x18" footprint, the smallest in the industry, allowing for reduced mechanical closets in water source heat pump installations and more effective use of the living space.*



Look at the value of the now usable space by installing HydroTech Slim 16 **-vs-** a standard size water source heat Pump

	Price per SqFt	Total SqFt Cost		\$ Value of Saved Space
		Compact Vertical 4,500 SQFT	AE Air WSS6 3,555 SQFT	
Miami	\$648	\$2,916,000	\$2,303,640	\$612,360
Boston	\$874	\$3,647,430	\$3,107,070	\$825,930
Chicago	\$914	\$4,113,000	\$3,249,270	\$863,730
San Francisco	\$1,001	\$4,504,500	\$3,558,555	\$945,945
New York	\$1,026	\$4,617,000	\$3,647,430	\$969,570

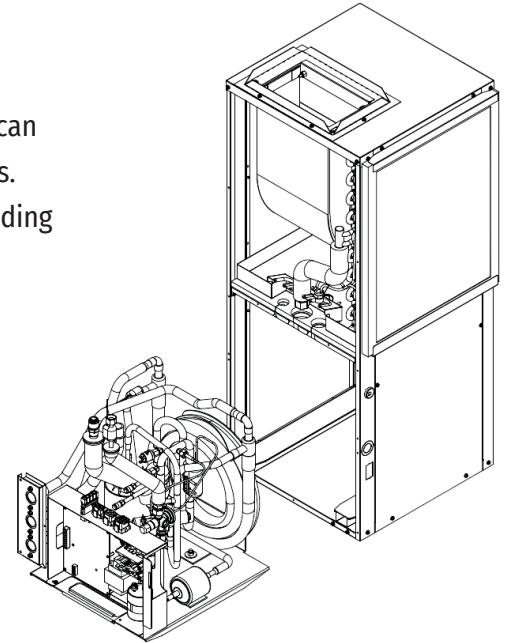
# BUILDING OWNERS & CONTRACTORS

## EASE OF SERVICEABILITY

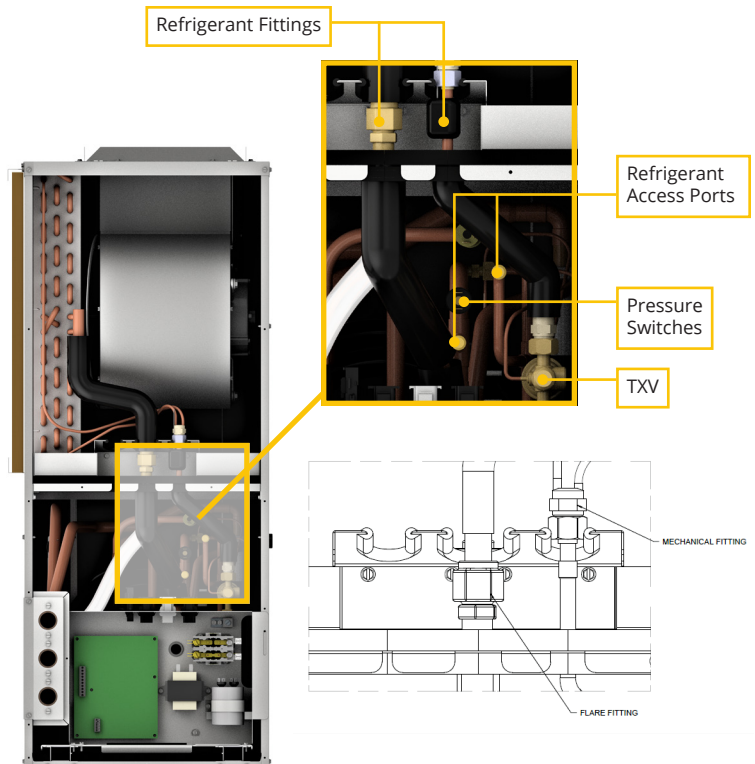
AE-Air understands that service involving access to the refrigerant circuit can be difficult if not impossible in some water source heat pump applications. Mechanical closets often do not provide adequate service access and building owners may not want to allow brazing inside of the dwelling space. If the entire unit needs to be removed from the closet, it might lead to higher costs, longer down time, and a more frustrated homeowner.

## ALL SERVICE ACCESS FROM THE FRONT

- Slide-out chassis
- Panel Mounted Sight Glass for operation codes
- Water connections – No back up wrench required
- Filter Access
- Access to electrical and all major components



*Commonly accessed items such as the TXV, refrigerant access ports and pressure switches are also accessible from the front of the unit without needing to remove the electrical box. For fast diagnostics, the unit also has a see through sight glass that allows the technician to read the control board status codes without removing the front panel.*



# CONSUMERS

## 1 INCREASED EFFICIENCY

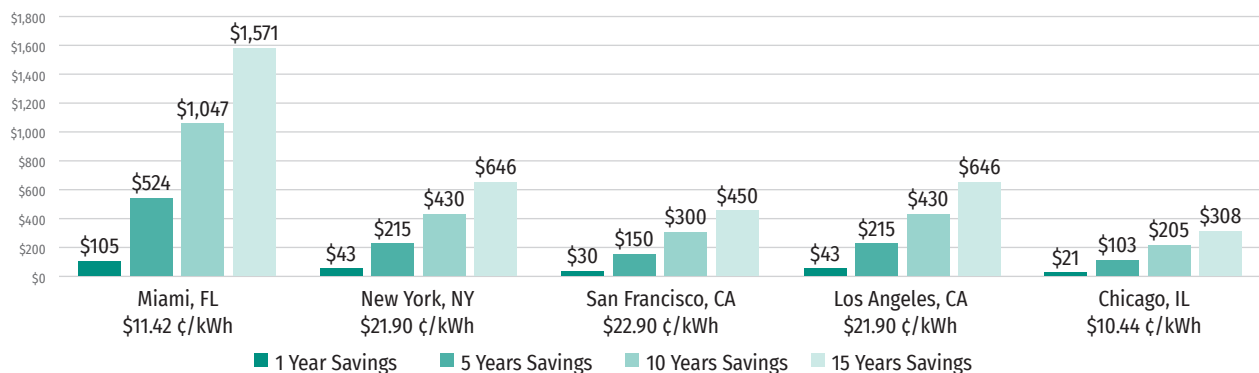
The HydroTech Slim 16 delivers best in class efficiencies in an ultra-small footprint by including standard high efficiency compressors, ECM motors and state of the art heat transfer surfaces. Competitor products must have footprints up to 43%\* larger in order to match the efficiency of the Slim 16. This allows the units not only to be a great fit for new construction but also a great fit for the replacement market.

*\*Versus leading competitor*

WATER LOOP COOLING (WLC)	EER
Competitor 1	14.3
Competitor 2	14.5
Competitor 3	13.6
Competitor 4	15.1
<b>AE Air WSS6024</b>	<b>16.7</b>

## 2 ENERGY COSTS IN CENTS PER KWH

The graph below shows the yearly electricity costs savings of the HydroTech Slim 16 2 ton vs a competitor 2 ton 13.6 EER product. Energy cost is shown in cents per kWh (¢/kWh).



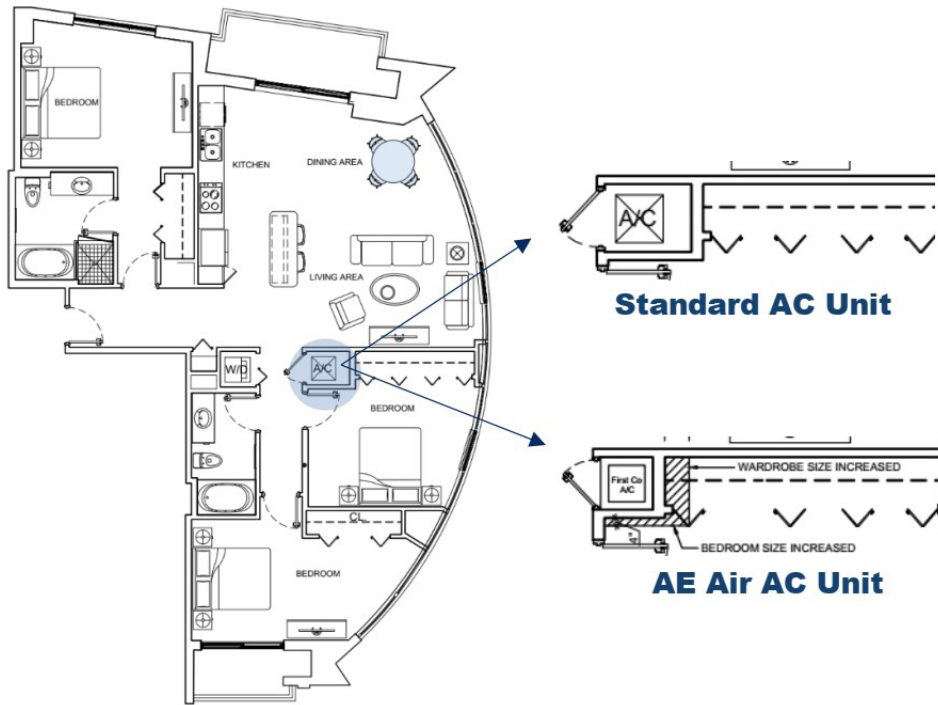
Disclaimer: Energy prices are approximated values of 2020 average energy costs per kwh

## 3 SOUND REDUCTION

End users concerned about sound levels can be confident because the slim line comes standard with closed cell cabinet insulation, double isolated compressor and an extended blower discharge for smooth quiet airflow.

# 4 POTENTIAL SAVINGS

For a 500-unit high-rise condominium, the HydroTech Slim 16 decreases the needed closet square footage from 4,500 sq ft. to 3,555 sq ft. When reducing the closet size needed from 36 x 36 to 32 x 32, the space saved by specifying and installing Slim 16 creates \$755,000 of usable space, without otherwise changing floorplans.



	COMPACT VERTICAL	AE AIR WSS6
Footprint	21.5 x 21.5	18 x 18
Closet Size	36 x 36	32 x 32
# Units	500	500
Price SQFT	\$800	\$800
Total Closet SQFT	4,500	3,555
Total SQFT Cost	\$3,600,000	\$2,844,444

Value of Saved Space vs Competition  
**\$755,556**

\*Based on average building costs for commercial high-rise construction across the United States



The AE-Air HydroTech Slim 16 model water to air heat pumps provide the best combination of *performance*, *efficiency*, and *reliability* in a compact package.

**HydroTech**<sup>™</sup>  
Slim 16

**AE-Air**<sup>™</sup>  
*Applied Environmental Air*