



# Boston Green Tourism

**Upgrading Hotel PTAC units – When & Why**  
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# TYPES OF HEATING AND AIR CONDITIONING IN HOTELS AND MOTELS

- **WATERSOURCE HEAT PUMPS**
- **BOILERS**
- **MINI SPLITS/VRF – New Construction**
- **FAN COIL UNITS**
- **AND PTAC UNITS**

# What is a PTAC unit and What is it used for



A PTAC unit is a packaged terminal air conditioning unit. These units are available as air conditioning or as heat pumps. In this area, the Heat Pump is generally used by most hotels and motels. It is a self contained, individually controlled, unit. These units have back up electric heat and are available horizontal or vertical.

Standard PTAC's measure 16" x 42" x 13 3/4" This makes replacement easy. Cooling capacity ranges from 7,000 to 15,000 BTUH. Heating capacities range from 6,200 to 13,500 BTUH

The evaporator coil faces the space to be cooled or heated and the condenser coil is mounted to face the outside

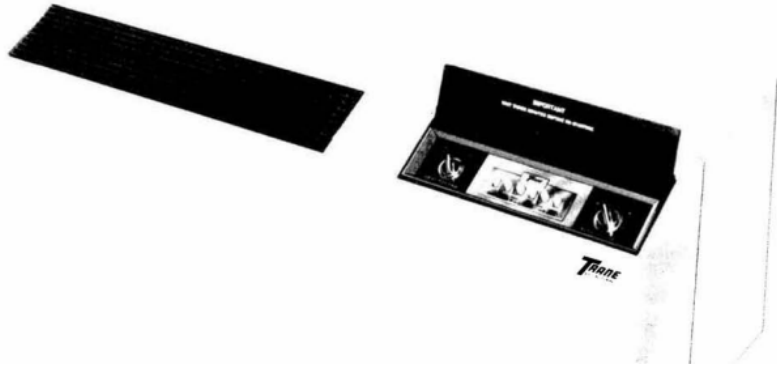
The basic unit consists of the chassis, wall sleeve and outside grill



# Through the years



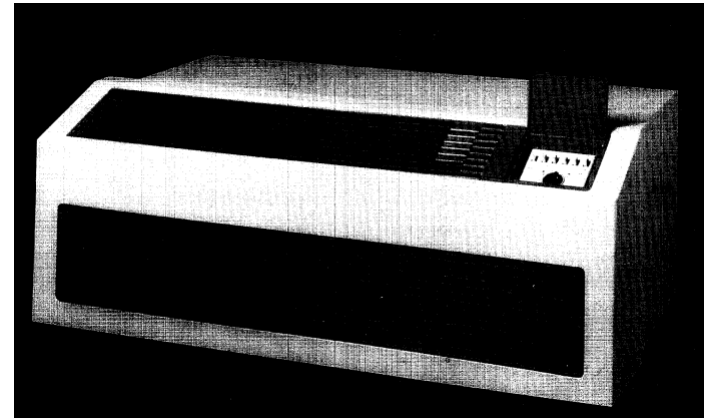
HEAT PUMPS – AIR CONDITIONERS



1982 – 7.3 EER – 15,000 BTU

PACKAGED TERMINAL UNITS

**Packaged  
Terminal  
Air Conditioners  
and Heat Pumps**



1993 – 8.7 EER – 15,000 BTU



# Through the years.....



## Packaged Terminal Air Conditioners & Heat Pumps



2002 – 9.6 EER – 15,000 BTU

## Zoneline® Packaged Terminal Air Conditioners



4100 and 6100 Series Control Panel



2014 – 10.8 EER – 15,000 BTU



Through the years.....



**What are some of the things  
you noticed?**

**Style**

**Buttons or Knobs to turn on and  
off - now use touch pads**

**EER ratings under 8.0**



# When to Replace



***Most hoteliers upgrade their equipment on an as needed basis***

Most PTAC units that are 10 years or older had EER ratings of 5.0 or 6.0. As the units get older, the actual operating efficiency levels drop down to 3.0 or 4.0

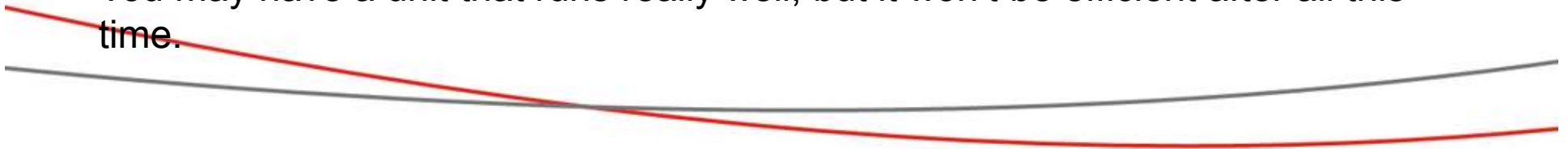
Newer Units can have EER ratings of 10.0

Appearance is worn and tired

Units are made with high efficiency motors and compressors and can save 150 watts per hour

PTAC's standard life cycle is 10 years with proper care and maintenance

Anytime is a good time to update your equipment, especially in old buildings. You may have a unit that runs really well, but it won't be efficient after all this time.



# Replacing your old Units



Standard PTAC units, just slide out and slide back in

Note: some units have plugs that go in the walls, some have sub bases and are hard wired in

Existing Model number will have the size, voltage, any extras such as corrosion resistant or condensate pumps

New Units are quieter than older units.

Adding New Units:

Sizing up a new unit:

Never oversize any air conditioning unit. Under sizing your unit will allow it to run longer and dehumidify more

Order a wall sleeve and outside grille

Voltage – amperage

Plugging into a wall or hard wired into a subbase





# New Units - Features



- Electronic Microcomputer control
- Fan cycle switch
- 3 fan speeds
- Rigid slide out filter
- Reversible Louver
- Concealed outdoor vent control
- Microcomputer Tactile touch pad with LED display
- Central Desk Control Compatibility
- Heat Pump defrost control
- Self diagnostics
- "Sleep Mode"
- Pays for itself in 2 years

Parts Warranty	Limited 1 year entire system Limited 5 year sealed refrigerating system
Labor Warranty	Limited 1 year entire system Limited 5 year sealed refrigerating system



# US Department of Energy Efficiency Standards



Table 1. Energy Conservation Standards for Commercial Package Air Conditioners			
Equipment Class			Energy Conservation Standards
Equipment	Category	Cooling Capacity (British thermal units per hour [Btu/h])	
PTAC	Standard Size	<7,000	EER = 11.7
		7,000 – 15,000	EER = 13.8 – (0.300 × Cap <sup>*</sup> )
		>15,000	EER = 9.3
	Non-Standard Size	<7,000	EER = 9.4
		7,000 – 15,000	EER = 10.9 – (0.213 × Cap <sup>*</sup> )
		>15,000	EER = 7.7
PTHP	Standard Size	<7,000	EER = 11.9 COP = 3.3
		7,000 – 15,000	EER = 14.0 – (0.300 × Cap <sup>*</sup> ) COP = 3.7 – (0.052 × Cap <sup>*</sup> )
		>15,000	EER = 9.5 COP = 2.9
	Non-Standard Size	<7,000	EER = 9.3 COP = 2.7
		7,000 – 15,000	EER = 10.8 – (0.213 × Cap <sup>*</sup> ) COP = 2.9 – (0.026 × Cap <sup>*</sup> )
		>15,000	EER = 7.6 COP = 2.5

\* "Cap" means cooling capacity in thousand Btu/h at 95 °F outdoor dry-bulb temperature.

[http://www1.eere.energy.gov/buildings/appliance\\_standards/product.aspx/productid/45](http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/45)

# Sheraton Commander



Back in 2004, Al Vaughn, Director of Engineering at the Sheraton Commander contacted Trane Supply, to get information on upgrading the PTAC units in his hotel. At the time, Trane provided PTAC units manufactured by Trane. Al had been replacing units in the hotel trying many different manufacturers to see what the best fit was. The hotel had many units that were Hydronic steam PTAC units. We were able to fit him with some replacement coils, but the industry was doing away with them. The hydronic water and steam coils that attached to the PTAC's were not efficient and became obsolete. Al had tried brands like LG, Frigidaire, Ocean Aire, Amana and Trane (which are no longer made). While working with Al, I came across some GE units, new, quiet and seemed like a good fit. In August of 2012, Al purchased 3 of these GE units to try. During one of my visits, I got the chance to observe the unit. That was very exciting for me. It was great to see what I sell, see it working and to hear how quiet the unit was.

Due to space constraints, I was able to help Al by getting him special pricing for the entire job and only having to take 20-30 at a time. This gave him time to remove the existing units and install the new ones. As of today, Al has purchased 223 units for a total of \$186,160. This total does not include extra items that were needed in some rooms as new wall sleeves and architectural grills.



# Rebates



Rebates are available by contacting Kevin Lubinger at NSTAR.

Contact Kevin and let's talk savings!



# Thank You!



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*If you would like more information on PTAC units, please contact me.*