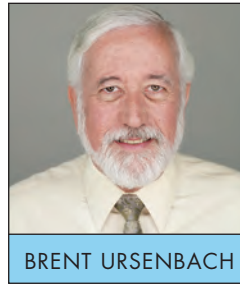


# MECHANICAL CODE DISCUSSION

## Condenser & Heat Pump Clearances – Impact on Cooling Capacity, Efficiency and Equipment Durability



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THE OUTDOOR SECTION FOR a central air conditioning unit and heat pump relies heavily on proper air circulation. The AC condenser fan pulls in ambient air, typically through one or more of the sides of the unit, through the condenser coil, absorbing the heat picked up at the evaporator coil inside, expelling the heat through the top or one of the sides of the unit. Heat pumps of

handlers/furnaces, coils, filters, and duct systems, unfortunately airflow through outdoor units is often ignored.

Several years ago, as I attended a ten-day code development hearing in Kansas, my trip included a stay at a Residence Inn extended stay hotel. The units were like small condos with a small furnace and AC for each unit. On the side of each multiple unit building

it's obvious the original units were not installed in accordance with clearances required by the manufacture's installation instructions. The initial installation was too close to the wall with insufficient space between units. With each successive failure, the units were replaced with physically large condensers, each doomed for poor performance, inefficient operation, and premature failure. Further compounding the problem, the property owners had added a vinyl fence, probably to hide this unsightly mess. Please note the electrical service access location for the original Trane unit as indicated by the red arrow.

The diagram on the next page is found in the installation instructions for Carrier BDP products. Other manufacturers have similar requirements, with several differences noted in the summary comments below. When is the last time you reviewed these clearances?

### Summary

- The single most common issue observed is multiple units are installed too close together. All but one manufacturer requires 12" for each unit with a total of 24" between two units. Goodman requires 20" between units but does not allow 6" on one side,

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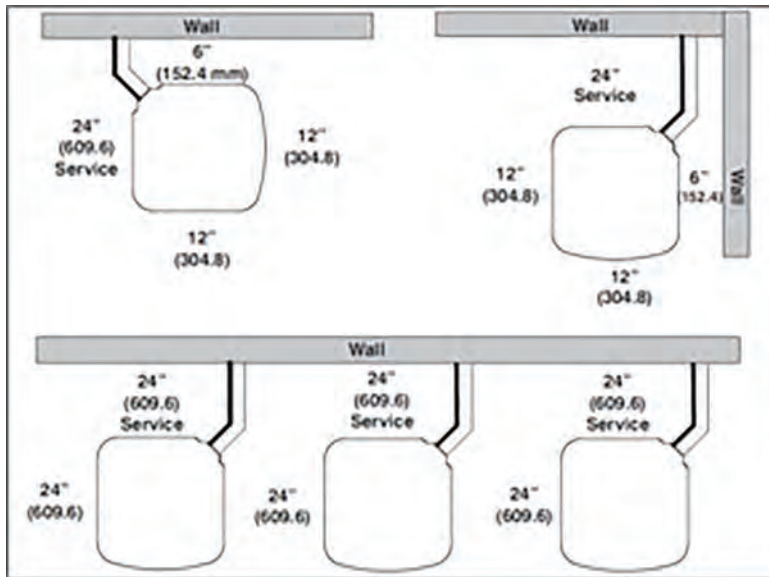
course reverse the cycle in the winter, pull heat from the outdoor air, discharge that heat to the inside of the building. While we regularly discuss the airflow inside the building, through the air

was a group of condensers....

It's apparent the small cube Trane unit is one of 6 original units for this building. By observation and previous experience installing these Trane units,

rather requires 10".  
Trane does not allow 6" on any side.

- Some require 30" or 36" service clearance, while others allow as small as 18" for service access.
- Lennox requires 30" service clearance one side, one of the other three sides must have 3' clearance, with 12" on one of the remaining sides, and 6" allowed on the last side.
- Plants, fences, and other obstructions must be considered.
- A minimum clearance to obstructions above units in most cases is 5' or more. Please be



mindful of placing a unit under large, confined decks where the air will recirculate, creating a condition where the entering air temperature continually increases over time. Considering using common sense and your knowledge of the refrigeration cycle.

- York specifically identifies a minimum 5' from a dryer vent or condensing gas appliance vent.
- Poor airflow at the condenser coil will result in high head pressures and temperatures, reducing cooling capacity, increasing operating cost, and drastically shortening the life of the compressor.

■ Please refer to the manufacturer's installation instructions and leave them on site as required by the code and the manufacturer.

*Please contact with comments or questions. Email is best.  
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*Happy New Year — Brent ■*

## 45 Lessons Life Taught Me, in Celebration of Growing Older – Part 1

BY REGINA BRETT WITH THE CLEVELAND PLAIN DEALER



1. Life isn't fair, but it's still good.
2. When in doubt, just take the next small step.
3. Life is too short – enjoy it!
4. Your job won't take care of you when you are sick. Your friends and family will.
5. Pay off your credit cards every month.
6. You don't have to win every argument. Stay true to yourself.
7. Cry with someone. It's more healing than crying alone.
8. It's OK to get angry with God. He can take it.
9. Save for retirement starting with your first paycheck.
10. When it comes to chocolate, resistance is futile.
11. Make peace with your past so it won't screw up the present.
12. It's OK to let your children see you cry.
13. Don't compare your life to others. You have no idea what their journey is all about.
14. If a relationship has to be a secret, you shouldn't be in it.
15. Everything can change in the blink of an eye, but don't worry, God never blinks.
16. Take a deep breath. It calms the mind.
17. Get rid of anything that isn't useful. Clutter weighs you down in many ways.
18. Whatever doesn't kill you really does make you stronger.
19. It's never too late to be happy. But it's all up to you and no one else.
20. When it comes to going after what you love in life, don't take no for an answer.
21. Burn the candles, use the nice sheets, wear the fancy lingerie. Don't save it for a special occasion. Today is special! ■