

Progress is greener
with Ingersoll Rand



Precedent 17 Plus



Precedent™ 17 Plus



- Product Details
- Technology
 - Compressor
 - Indoor Fan
- Controls
- New Options Available
- Other Information



Product Details



- Trade Name – Precedent 17 Plus™
 - Cooling Only (Optional Electric Heat)
 - Gas Heat
- R-410A Refrigerant
- 208/230VAC and 460VAC

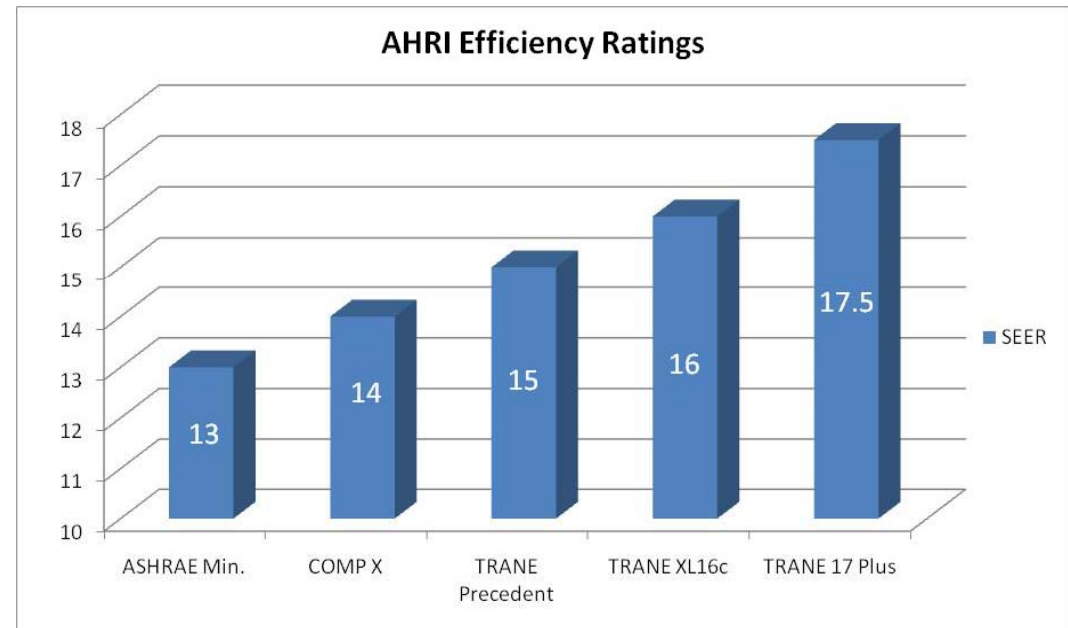
| Tonnage | Efficiency |
|---------|------------|
| 3 Ton | 17.5 SEER |
| 4 Ton | 17.5 SEER |
| 5 Ton | 17.2 SEER |



Product Performance



- Highest AHRI rated efficiency in the Industry
- Energy Star rated
 - Worth 2 CHPS credits
- Exceeds Federal Min. by 35%

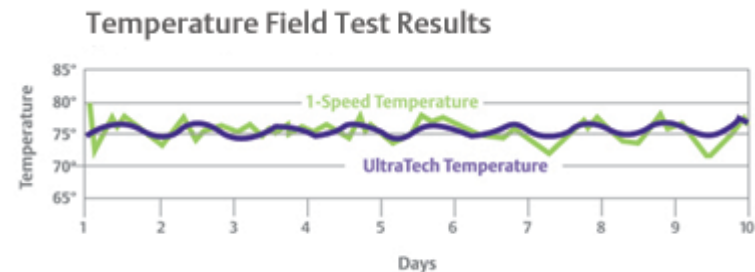


Precedent – 17 Plus

Technology - Compressor



- Variable-Stage Compressor
 - Stage 1 = 67% Capacity
 - Stage 2 = 100% Capacity
- System operates in low stage in part load conditions
- Enhanced temperature and humidity control

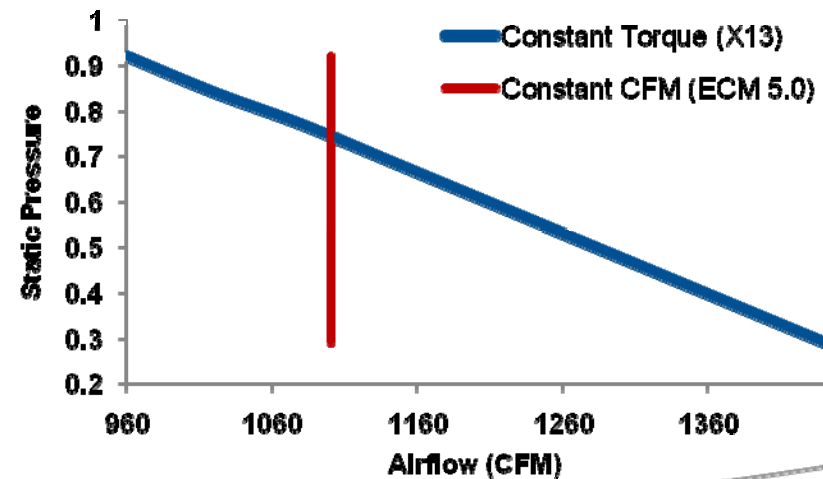


Technology – Indoor Fan



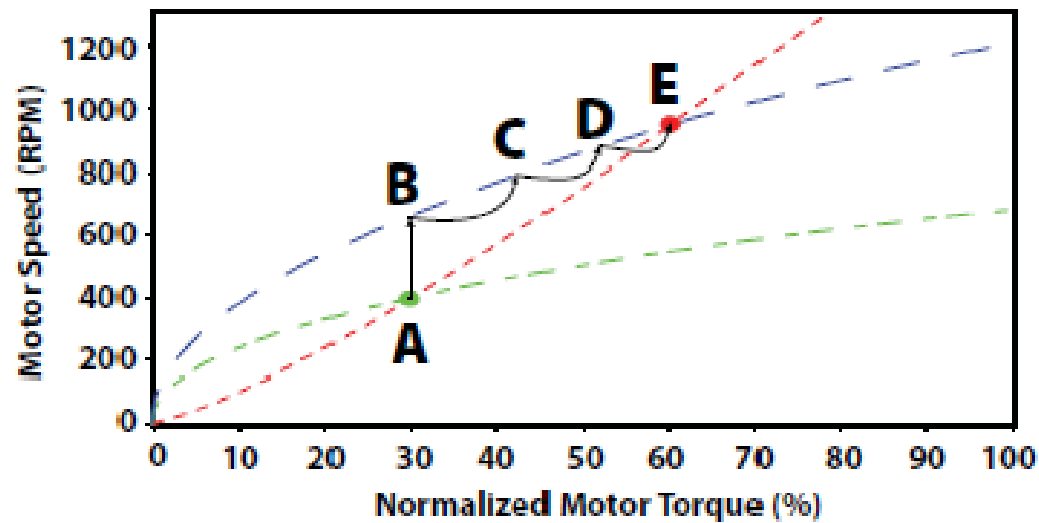
ECM Motor

- Constant CFM vs. Constant Torque
- High Efficiency Motor
 - Savings in continuous fan mode
- 320-480 cfm/ton
- Quieter operation





Constant Airflow - How does the motor know what to do?



- Purifier Logic Biosafety Cabinet Constant Air Volume Curve
- New HEPA Filter Curve (Torque & RPM needed as flow rate varies)
- Loaded HEPA Filter Curve



ECM versus PSC Motors



| Specification | ECM-Powered BSC | PSC-Powered BSC |
|------------------------|-----------------|-----------------|
| Power during operation | 290 Watts | 582 Watts |
| Heat Load | 990 BTU/hr | 1986 BTU/hr |
| Average Motor Life | >50,000 hours | 10-15,000 hours |

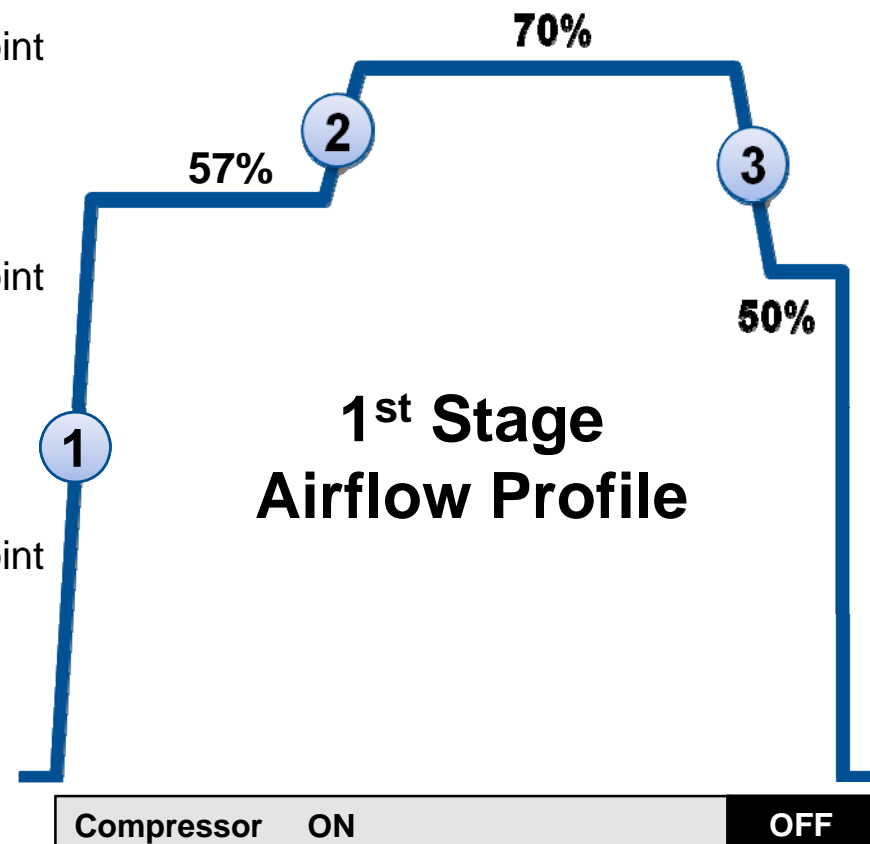




New Controls Algorithm

Fan Speed Control – 1st Stage Cooling

- Step 1
 - Fan ramps to 57% of airflow set point
 - Up to 7.5 minutes run time
 - *Enhanced Comfort*
- Step 2
 - Fan ramps to 70% of airflow set point
 - Stays until satisfied or call for 2nd stage
- Step 3
 - Compressor is off
 - Fan ramps to 50% of airflow set point
 - Stays for ~2.5 minutes
 - *Enhanced Efficiency*

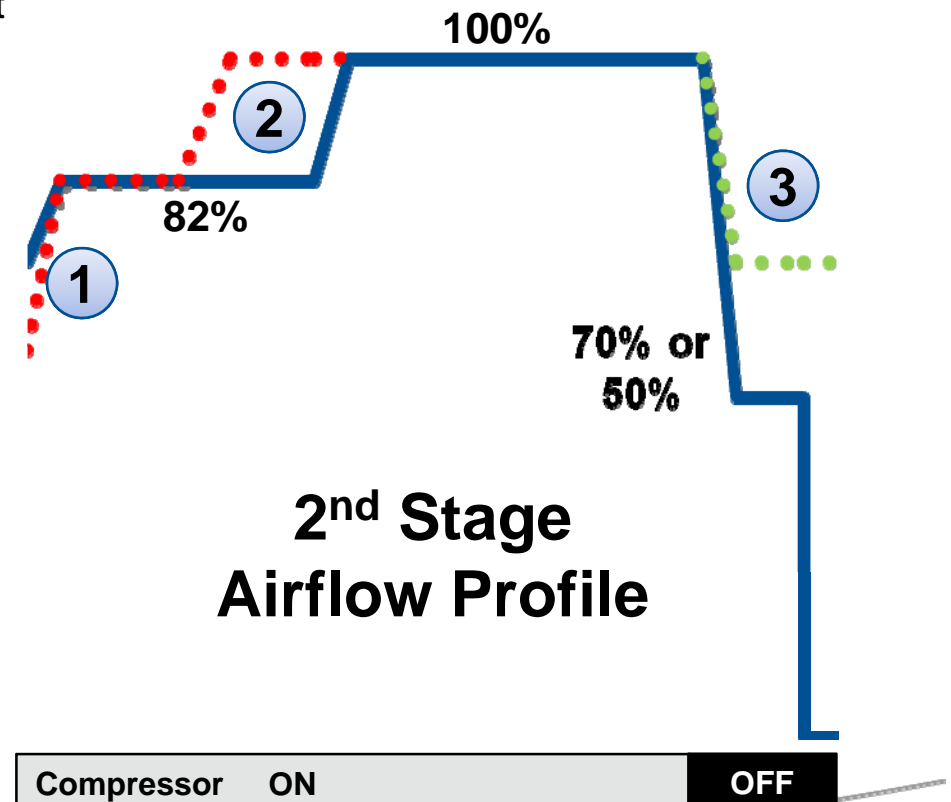




New Controls Algorithm

Fan Speed Control – 2nd Stage Cooling

- Step 1
 - Fan ramps to 82% of airflow set point
 - Could run up to 7.5 minutes depending on how quickly the transition from stage 1 to stage 2 occurred
- Step 2
 - Fan ramps to 100% of airflow set point
 - Stays until load is satisfied or transition to stage 1
- Step 3
 - Either transition to 70% airflow and stage 1 capacity
 - Or fan ramps to 50% of airflow set point and stays for ~2.5 minutes (compressor off)

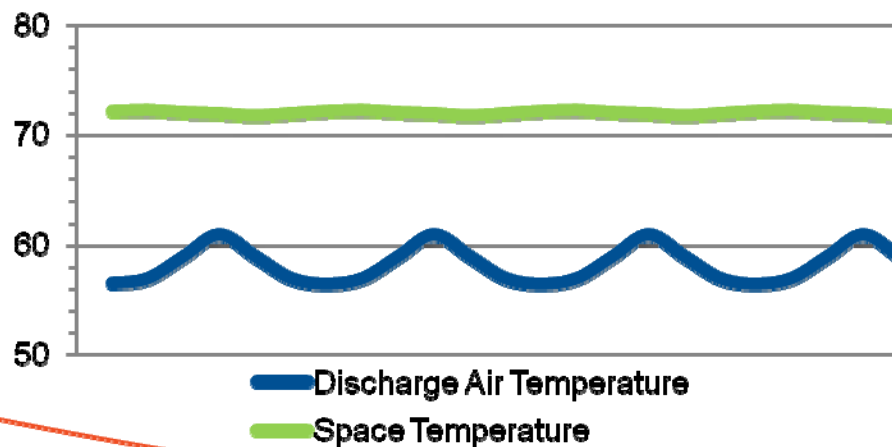




New Options

Single Zone VAV

- Further Comfort Enhancements
- Compressor is staged and indoor fan airflow is varied to maintain zone temperature
- New *Minimum Supply Air Temperature Setpoint*
- Zone Sensors Only – Will not work with thermostats



Cabinet Changes



| | 15 SEER | | 17 Plus SEER | |
|-------|---------------------|-----------------|---------------------|-----------------|
| | <i>Cabinet Size</i> | <i>Roofcurb</i> | <i>Cabinet Size</i> | <i>Roofcurb</i> |
| 3 Ton | B | BAYCURB042 | B | BAYCURB042 |
| 4 Ton | C | BAYCURB043 | C | BAYCURB043 |
| 5 Ton | C | BAYCURB043 | C | BAYCURB043 |

**No
Cabinet
Changes**

Factory Installed Offerings



| Option | Downflow | Horizontal |
|------------------------------|-------------------------------|------------|
| Hinged Access Panels | Yes | Yes |
| Hail Guards | Yes | Yes |
| Circuit Breakers | Yes | Yes |
| Disconnects | Yes | Yes |
| Phase Monitor | <i>Now Standard!!!</i> | |
| Convenience Outlet | Yes | Yes |
| Smoke Detectors | Yes | Yes |
| Hot Gas Reheat | Yes | Yes |
| Factory installed economizer | Yes | Yes |

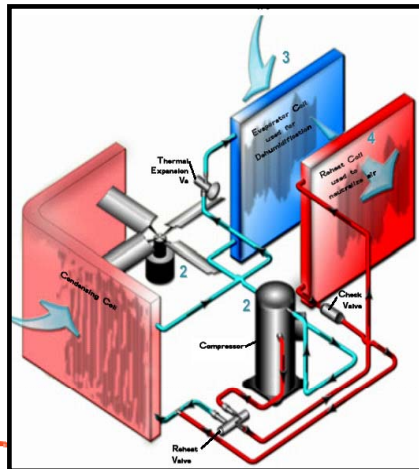


Hail Protection

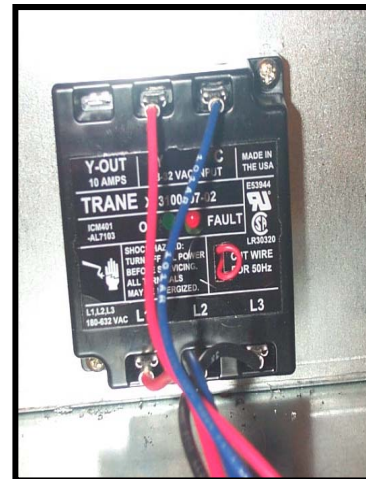
Hinged Access Doors



Dehumidification Coil



Phase Monitor



**Disconnect Switch
115VAC Outlet**





Key Dates To Remember

- End Of April
 - Catalog and other literature available
- May 6
 - TOPSS available
 - First order
- June 20th (currently)
 - First shipment





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