



Spring Service Update

Mingledorff's Technical Services / SE

03/19/2025

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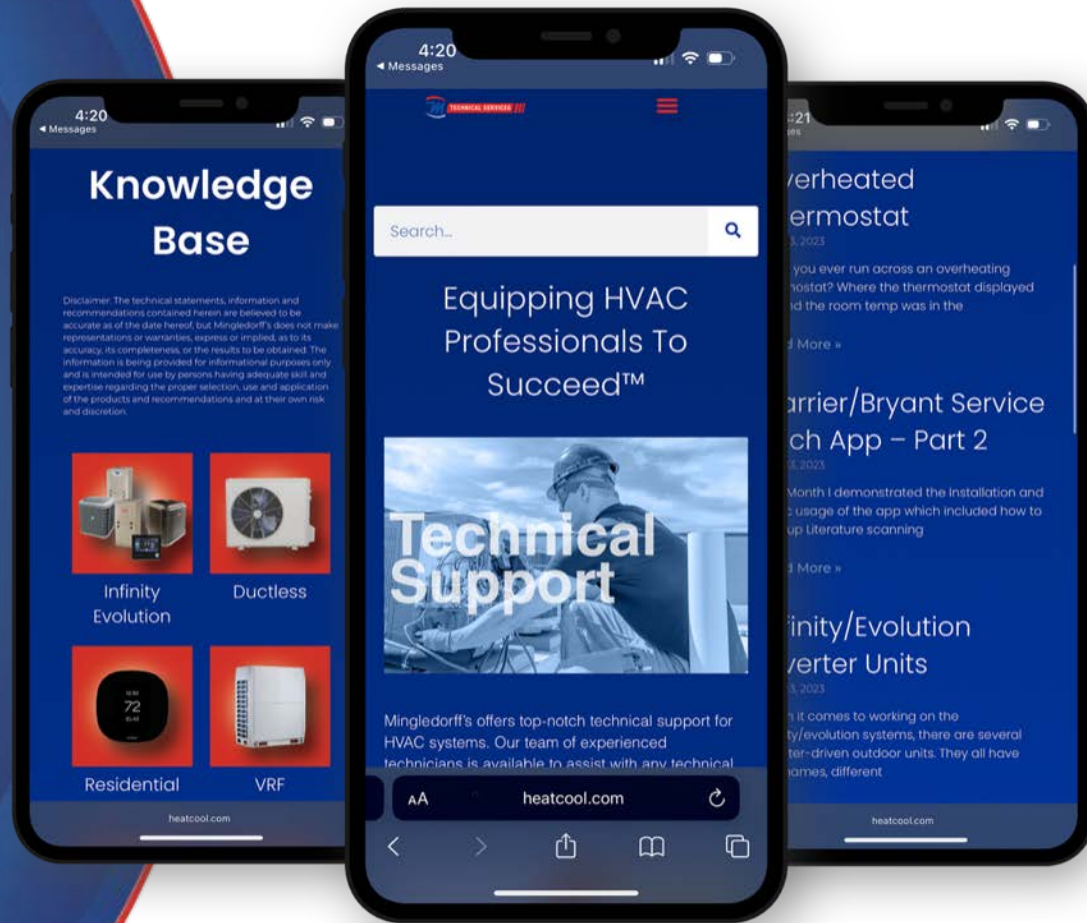
Attendees should note that sessions are audio-recorded and may be published in various media, including print, audio and video formats without further notice.



What information do we need?

1. Equipment model/serial
2. Detailed description of the problem or question
3. Email or Telephone number (including area code)
4. Your Name
5. Your Company Name
email
(quickest response)

AN IMPROVED DIGITAL EXPERIENCE FOR THOSE IN THE FIELD



No login required!



Introducing Mingledorff's newest technical and warranty resource! Everything technical and warranty related under a simple url – **heatcool.com**.

- **Technical Support**
 - Product Knowledgebase
 - Access to Factory Manuals
 - Technical Services Contacts
- **Warranty Support**
 - Helpful Links & Resources
 - Online Warranty Tips
 - Warranty Experts Contacts
- **Tech Tips – Monthly News Articles**
- **Training Calendar and Online Learning**
- **Managed by Techs for Techs**

Caffeine & Coils Podcast



- Mingledorff's new podcast featuring **Jenny Brown** and **Deanna Lassiter**
- This podcast is your go-to source for valuable insights, expert interviews, and cutting-edge industry trends.



Spring Service Update Agenda



- Warranty
- Residential Controls
- Puron Advance
- Residential Split Systems
- Ductless
- Light Commercial
- Gas Furnaces
- Puron Advance (R-454B) Transition
- A2L Refrigerant Storage & Transportation



Do you receive our monthly newsletter?

Sign up at HeatCool.com (Home page)

or <https://www.mingledorffs.com/>

(Resources / Support / Sign Up For Our Newsletter)

Scary Thought!



If you don't spend money & time training your employees because they might leave, what happens to your business if they stay??




TRAINING CLASSES ONLINE / BRIDGE



- serivicetraining@Mingledorffs.com
- Sign up at HeatCool.com or use link in newsletter!

TECHNICAL SERVICES TRAINING - CUSTOMER AVAILABLE (42)

[VIEW ALL](#)



Ductless Mini Split Systems- Carrier/Bryant

A 4 part series of Introduction, Function & Control, Installation and Start-up for the Carrier/ Bryant D...

 PROGRAM / 4 STEPS



The Mystery of Triac's Seminar

A series of online videos featuring Basic and Updated Service Techniques. Each time you com...

 COURSE / 27 MINS



40MBQ Fan Setup

Tech Tips – Course Does Not Qualify for Training Hours

 COURSE / 5 MINS



VRF Certification Program-CEU, FAD and Nate Hours

Qualifies for 4 hours of CEU credits and VRF Certification

 PROGRAM / 7 STEPS



VRF 3 Part 1

What is V

 COURSE

TECHNICAL SERVICES TRAINING - EMPLOYEE AVAILABLE (62)

[VIEW ALL](#)



Ductless Mini Split Systems- Carrier/Bryant

A 4 part series of Introduction



The Mystery of Triac's Seminar

A series of online videos featuring



40MBQ Fan Setup

Tech Tips – Course Does Not



VRF Certification Program-CEU, FAD and Nate Hours

Qualifies for 4 hours of CEU



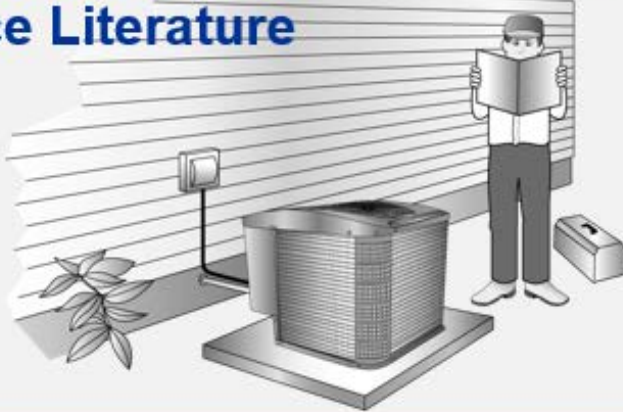
VRF 3 Part 1

What is V

Safety Review



Read and Follow Specific Instructions in Manufacturer's Service Literature



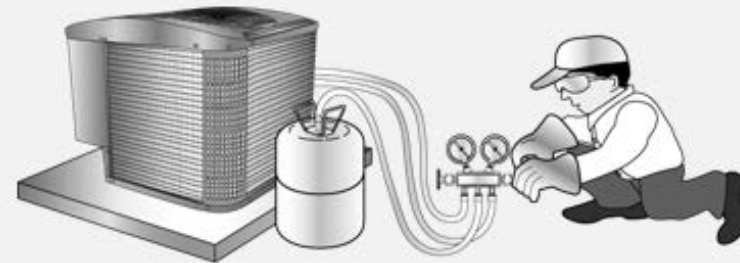
Lock Out/Tagout Equipment Disconnect Switch



Remove Watches and Other Jewelry Before Servicing Equipment

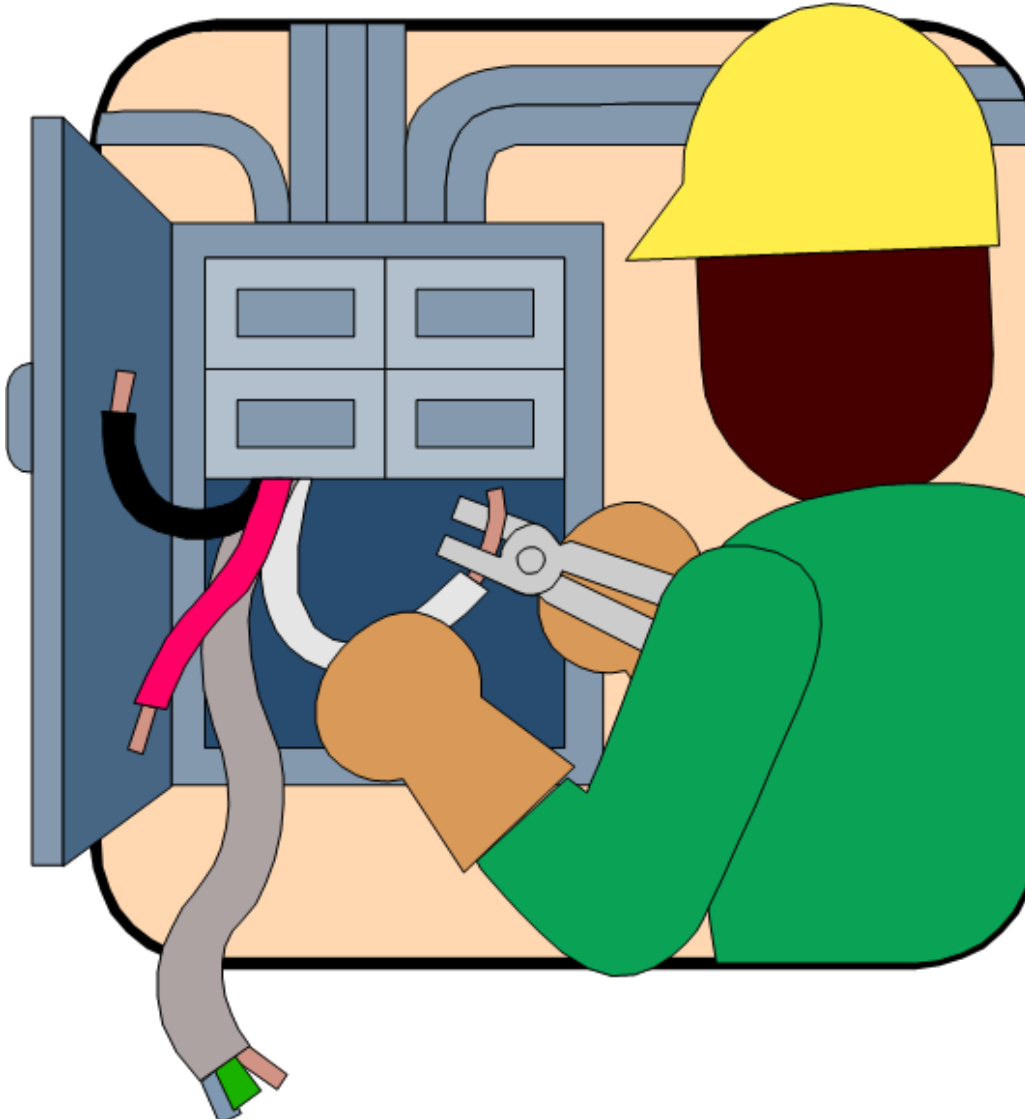


HVAC Technician Wearing Safety Glasses and Gloves





Lift and Move Correctly



- Do not wear rings or jewelry when working on electrical circuits.
- Never use screwdrivers or other conductive tools in an electrical panel when the power is on.

Federal regulation requires anyone servicing, repairing or disposing of any equipment containing a controlled refrigerant to have in his/her possession a card certifying that he/she has obtained the proper level of certification for the work he/she is performing.

THIS MEANS YOU CANNOT WORK UNDER ANOTHER PERSON'S CERTIFICATION.

EPA regulations require that hoses be equipped with low-loss fittings.



Building codes pertaining to the installation of air distribution systems vary widely.

- Council of American Building Officials (CABO) one- and two-family dwellings codes.
- Uniform mechanical code (UMC)
- International Building code (IBC)
- Local building codes
- Refer to all safety codes and information
- SMACNA

Ladder Inspections



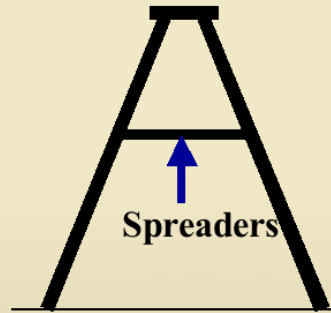
Ladder Inspections

Inspect Ladder Before Use



Check:

- ⇒ Locks
- ⇒ Ropes
- ⇒ Side Rails
- ⇒ Rungs
- ⇒ Safety Feet
- ⇒ Spreaders
(Step Ladders Only)

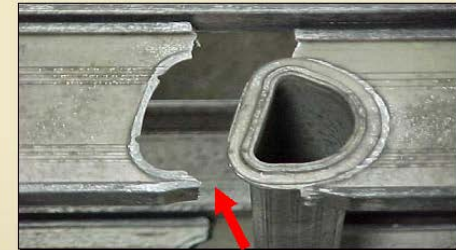


Check For:

- ⇒ Wear
- ⇒ Cracks
- ⇒ Damaged Parts
- ⇒ Missing Parts
- ⇒ Loose Component

Ladder Inspections

Ladder Wear



Caused Ladder to Break



Resulting in Serious Injury

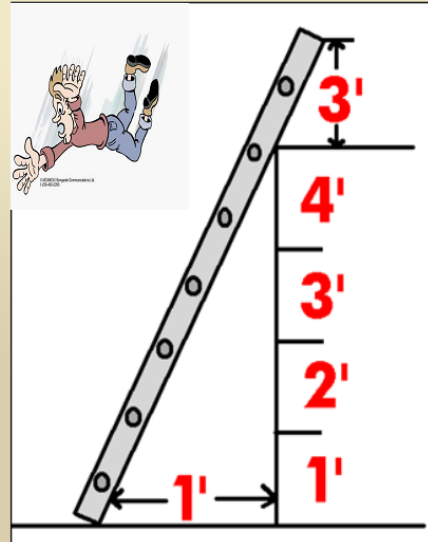
Ladder Setup



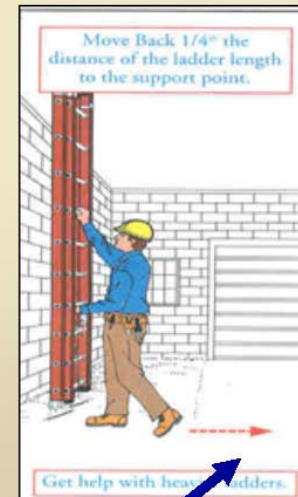
Ladder Setup

When Getting on a Roof

- Extend Ladder 3 Feet (1 Meter) Beyond Roof
- Place Ladder Away from Structure
 - One foot for every 4 feet of height ladder is extended



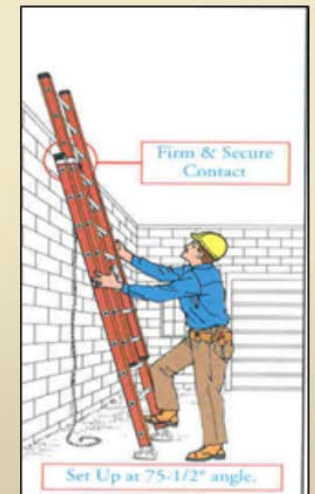
Ladder Setup



**3. Move Back
into Position**



**4. Raise Fly
Section**



**5. Place Against
Building**

Securely Engage Ladder Locks Before Climbing

Ladder Setup



Ladder Setup



Ladder Should be Tied Off at Top and/or Bottom

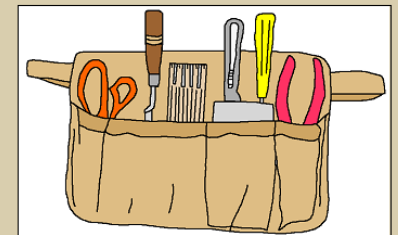
OR



Someone Should Hold it at Bottom

Ladder Use

- Face Ladder When Climbing Up or Down
- Maintain 3-Point Contact
 - 2 feet/1 hand or 2 hands/1 foot
- Don't Carry Tools or Materials Up Ladder
 - Use tool belt, line, etc.



- Have you checked your NATE Continuing Education Hours recently
- Most NATE certifications last 2 years
- To maintain NATE certification, you simply earn 16 hours of specialty-related continuing education (CEHs) within the two-year period
- When does your certification expire?
- Visit the NATE web site <https://www.natex.org/>

Field Reporting System (FRS)



- **FRS helps us identify product issues and take corrective action**
- **Goal is to have all Dealers submitting info on product issues identified in the field**
- **FRS reports are reviewed at all levels of organization and help to drive resolution to the problems**
- **Helps us create a better product**

- Complete model or product number
- Complete serial number
- Problem description
- Service performed
- Part numbers if any
- Picture or video are great



Websites-Resources



<https://singlesource.mingledorffs.com/> Mingledorff's Single Source (online training)

www.HVACpartners.com / Carrier – Bryant – Payne

carrier.com/myhome / Infinity – COR

www.bryant.com/myhome / Evolution - Connex - Housewise

<https://www.carrier.com/carrieruniversity/en/us/> / Carrier Training

<https://www.servicebench.com> / Carrier / Bryant / Payne Warranty

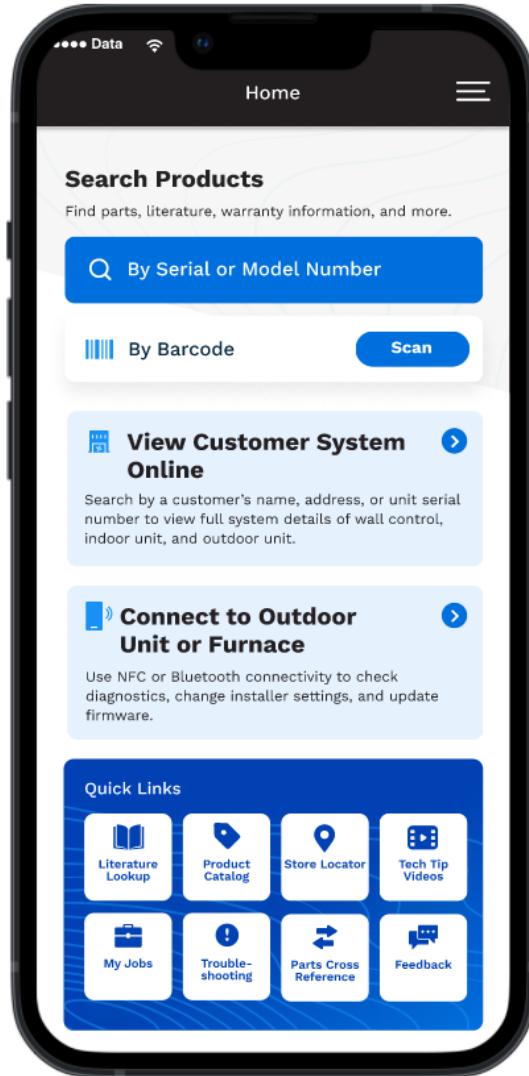
www.thedealertoolbox.com / Regal-Beloit (X-13)

<https://mlctraining.com/> Carrier / Bryant - Online Training

Mobile App's

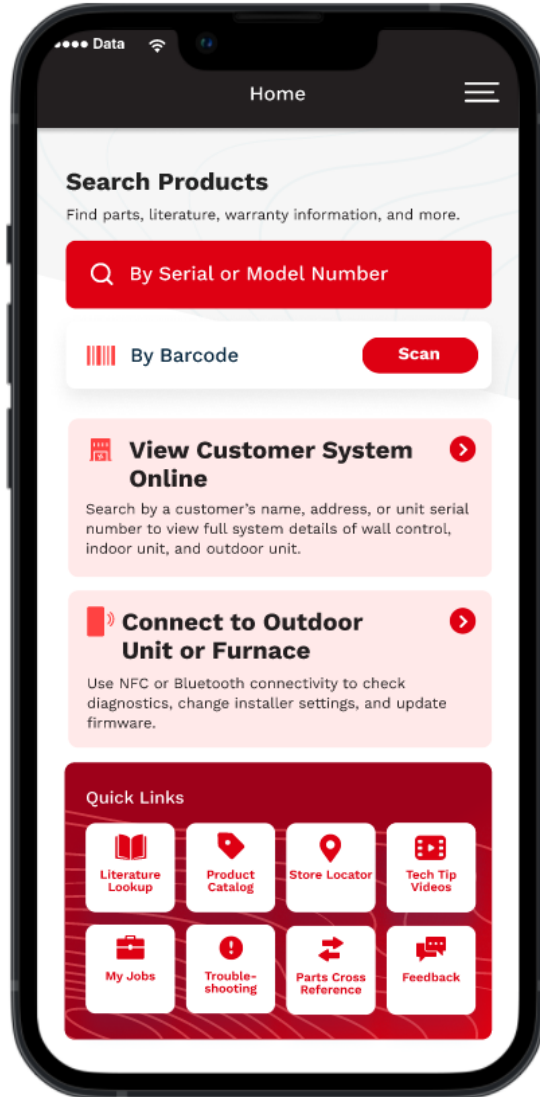


Carrier Service Tech App



- **NEW!** User Interface & Quick Links
- **NEW!** Customer System Online search customer's equipment profiles
- **NEW!** Near Field Communication (NFC) with select furnaces
- **NEW!** IntelliSense Mid-Tier Equipment
- **NEW!** Remote Diagnostics (Test Equipment) – (Mid-Tier IntelliSense)
- **Barcode scanning** of unit's serial or model number
- **Warranty** entitlement & service history
- **Literature** list for models and ability to search all available literature
- **Product Catalog** model lookup
- **Bill of Material** parts list including part supersession
- **Bluetooth Connectivity** to pair to select outdoor equipment
- **Aftermarket components** cross reference tool
- **Tech Tips videos** for installation guides, interactive troubleshooting help

Bryant Service Tech App



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HVAC Partners Apps



Carrier Rooftops →

Mobile app to assist customers with the selection of light commercial rooftop equipment.



Carrier Chillers →

Mobile app developed to assist customers with the selection of packaged chiller equipment.



Commercial Literature Search →

Allows users to search by Model Number or document title for any available piece of commercial product literature.



Carrier Sales Mobile App →

One-stop-shop for Carrier products information and sales tools.



Carrier Service Technician Mobile App →

Easy to use, powerful app that is designed to help the technician standing in front of a unit.



Bryant Service Technician Mobile App →

Easy to use, powerful app that is designed to help the technician standing in front of a unit. It was recently update...



Bryant Pro Sales →

New & Improved Bryant® Pro Sales App Now Available!



Replacement Components Mobile App →

Search for equipment BOM, Cross Referencing Tool, Marketing Links, History, and Store Locator.

HVAC Partners Marketing Software



Marketing Software



Competitive Comparison Tool



Access model and brand specific information, in a concise format, for recruitment and sales reference.



Geothermal Competitive Comparison Tool



Access model and brand specific information, in a concise format, for recruitment and sales reference.



Geothermal Nomenclature Tool



Easily create the unit model number based on the feature set desired.



Online OpCost Calculator



Present up to four separate systems to a homeowner, and discuss the advantages of each system as it relates to ongoing...

Puron Advance™ R-454B



- Carrier has identified R-454B (Puron Advance™) as its primary Lower Global Warming Potential (GWP) solution to replace R-410A.
- To be used in ducted residential & light commercial products in North America.
- With a GWP of 466 (one-fifth that of R-410A {2088}) this was the best solution to minimize environmental impact and energy use, while improving performance, safety, and longevity, based on the Kigali Agreement phase down plan for HFC's.
- Composition & Weight By %: R-32 (68.9%) / R-1234yf (31.1%)
 - R-32 GWP – 675 (A2L)
- **Not a R-410A drop in**

Puron Advance™ R-454B / Classification



Higher Flammability	A3 R290 (Propane) R50 (Methane) R600 (Butane)	B3 R1140
	A2 R142B R152A	B2 R30 R40 R717 (Ammonia)
Lower Flammability	A2L R32 <u>R454B</u> HFO1234yf	
No Flame propagation	A1 R410A R22 R134A	B1 R10 R21 R123
Lower toxicity		Higher Toxicity

NEW Recovery Service Cylinders:

- Valve Threading – Left Hand GHS (Globally Harmonized System) Labeling.



- **Sensor to detect leak with high concentration, within 10 sec**
 - Refrigerant detectors shall be tested during installation to verify the set point and response time
 - Refrigerant detectors shall be tested to verify the set point and response time annually or at an interval not exceeding the manufacturer's installation instructions, whichever is less
 - Leak detection response
 - Dilute refrigerant (turn on blower for 5 min)
- **Fan coil, fan failure switch/status**

- **Flammable refrigerant systems must be leak tested using a method that is safe and sensitive:**
 - Leak detection spray
 - A suitable electronic, flammable rated, gas detector
- **Operating Subcooling & Suction Gas Superheat**
 - Same process to determine subcooling & superheat
 - Subcooling & superheat temperature ranges remain the same (refer to nameplate information)
- **Refrigerant Lines**
 - At this time all line set sizes & distance will remain the same. Follow the PDD, Installation Instructions, and any Long Line Application guideline.

Operating Pressure vs. Saturated Temperatures:

Puron – R410A	Puron Advance – R454B
Saturated Suction Temperature = 40°F	Saturated Suction Temperature = 40°F
Pressure = 118.8 psig	Pressure = 113.3 psig
Saturated Condensing Temperature = 110°F	Saturated Condensing Temperature = 110°F
Pressure = 366.4 psig	Pressure = 349 psig

Puron Advance™ R-454B Take Away



- Safety is the biggest concern
- Technicians will have to update their recovery cylinders & leak detectors
- Updating systems could be a challenge
 - matrix for sales & service
- Puron Advance (R454B) can't be mixed with Puron (R410A)
- Follow the manufacturers guidelines
- Updated refrigerant certifications
- All manufactures not likely to use the same refrigerants
 - Refrigerants differ by product category



New HP model numbers- R454b



Puron™ Lineup

Model Family	Stages
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25VNA4 VS

25VNA8 5

25TP(A/B)7	2
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25SPA5 1

25SCA5	1
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GH7TAN4 2

GH5SAN4 1

Puron Advance™ Lineup

Model Family	Region	Stages	*25C North	25C South
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27VNA3 All VS ● ●

27VNA0 North VS ● ●

27TPA7	All	2	●	●
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27SPA6 All 1 ● ●

27SCA5	All	1	●	●
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GH7TAN5 All 2 ● ●

GH5SAN5 All 1 ● ●

INFINITY SYSTEM

Performance SERIES

Comfort SERIES

Builder

New hp model numbers- R454b



EVOLUTION[™]
SYSTEM

PREFERRED[™]
SERIES

LEGACY[™]
LINE

Builder

Puron[™] Lineup

Model Family	Stages
284ANV	VS
288BNV	5
227T(A/B)	2
225S	1
215S	1
GH7TAN4	2
GH5SAN4	1



Puron Advance[™] Lineup

Model Family	Region	Stages	*25C North	25C South
292VAN	All	VS	●	●
290VAN	North	VS	●	●
247TAN	All	2	●	●
246SAN	All	1	●	●
235SAN	All	1	●	●
GH7TAN5	All	2	●	●
GH5SAN5	All	1	●	●

New fan coil model numbers- R454b



EVOLUTION[™]
SYSTEM

PREFERRED[™]
SERIES

LEGACY[™]
LINE

Builder-Series

INFINITY[™] SYSTEM

Performance[™]
SERIES

Comfort[™]
SERIES

Builder 2-stage



Puron Advance[™] Lineup

Model Family	Stages
FE5B	VS
FT5 w/ IntelliSense	2
FJ5	1
FG5	2

Ductless and Puron Advance



Puron		
Tier	Model Family	Description
Infinity	38MPRBQ	Single Zone Heat Pump
	40MPHBQ	High Wall

Puron Advance		
Tier	Model Family	Description
Infinity	37MPRAQ	Single Zone Heat Pump
	45MPHAQ	High Wall
	37MAHAQ	Single Zone Heat Pump
	37MGHAQ	Multi-Zone Heat Pump
	37MBHAQ	Light Commercial Heat Pump

Performance	38MARBQ	Single Zone Heat Pump
	38MGHBQ	Multi-Zone Heat Pump
	38MGRBQ	Multi-Zone Heat Pump
	38MBRCQ	Light Commercial Heat Pump
	40MAHBQ	High Wall
	40MCCAQ	1-Way Cassette
	40MBCQ	4-Way Cassette
	40MBCAQ	4-Way Cassette
	40MBFAQ	Floor Console
	40MBFQ	Console - Ceiling/Floor
	40MBDQ	Slim Duct
	40MBDAQ	Slim Duct - High Static
	40MBABQ	Air Handler

Performance		
	37MGRAQ	Multi-Zone Heat Pump
	37MBRAQ	Light Commercial Heat Pump
	37MARAQ	Single Zone Heat Pump
	45MAHAQ	High Wall
	45MCCAQ	1-Way Cassette
	45MBCAQ	4-Way Cassette
	45MBFAQ	Floor Console
	45MCFAQ	Console - Ceiling/Floor
	45MBDAQ	Slim Duct Standard and High Static
	45MBAAQ	Air Handler

Comfort	38MHRCQ	Single Zone Heat Pump
	40MHHAQ	High Wall
	38MHRDC	Single Zone - Cooling Only
	40MHHAC	High Wall - Cooling Only

Comfort	37MHRAQ	Single Zone Heat Pump
	45MHHAQ	High Wall
	37MHRAC	Single Zone - Cooling Only HP
	45MHHAC	High Wall - Cooling Only

- Carrier Corporation is not supporting any one individual supplier of mechanical fittings.
- Any mechanical fitting that has been approved by UL 207 is approved for use with our systems.



UL 207

Refrigerant-Containing Components and Accessories, Nonelectrical

