DAIKIN 2-DAY TRAINING
DAY 1-PRODUCT INTRO AND APPLICATIONS & INSTALLATION

TSM PHONE QUEUE: 888-823-4357

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

NATE ACCREDITATION

Please email Richardhilke@virginiaair.com with your Nate credentials

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VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

WHY DAIKIN?

- Daikin Proprietary Compressor Design: Swing compressor, more robust, reliable and efficient
- Factory Backed Warranty Labor Plans: Labor plans competively priced (Single Zone System)
- Quaternity Models: Heat. Cool. Dehumidify. Clean Air—Ideal solution for challenging, hot, humid, or poorly ventilated environments such as basement, garage, or attic conversion
- Daikin D-Checker Service Monitoring Tool: Gives visibility to all system data in an easy to use display platform (Bluetooth & Hardwired options available)
- Emura Models: Stylish indoor units available in Multi & Single port applications
- Aurora Models: Enhanced heating and cooling capacity, with 100% heating capacity down to 5 degrees and 100% cooling capacity up to 104 degrees
- Vista Ceiling Cassette: True 2' x 2' installation giving flexibility in acoustic ceilings
- FDMQ: Ducted concealed unit capable of up to 0.6 ESP
- DZK: Zoning for a one to one unit, allows flexibility without installing a multiport system
- Multi-Zone Systems: No branch port box required until you get to the 8 zone multi-zone

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DAIKIN INVERTER TECHNOLOGY

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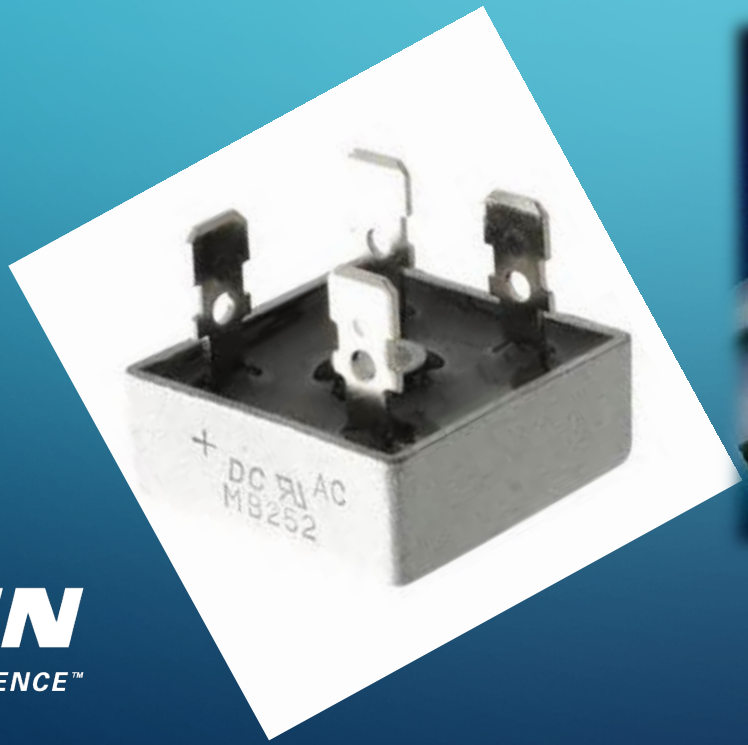
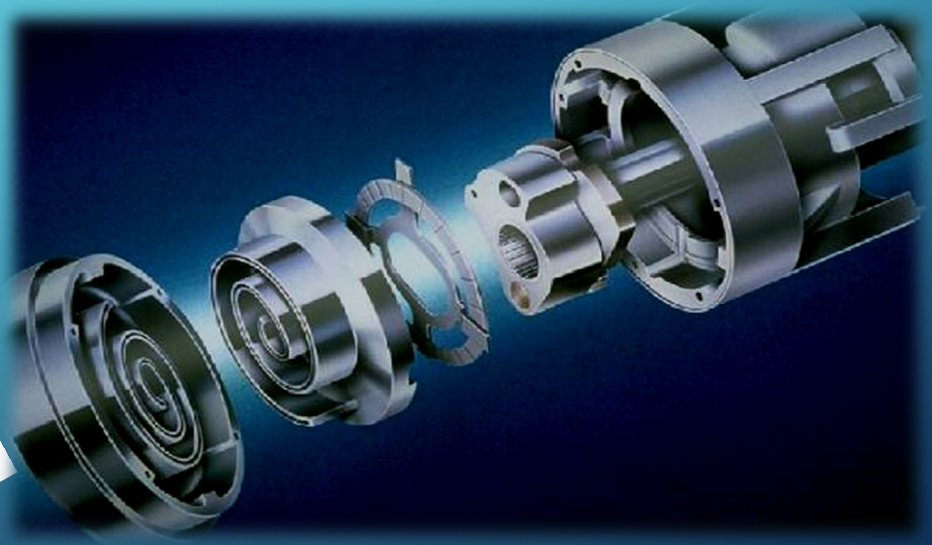
HOW DOES AN INVERTER COMPRESSOR WORK?

- Traditional systems are 1 speed – On/Off
- Inverter systems have VFD's that incorporate an adjustable electrical inverter to control the speed of the motor inside the compressor.
- The variable-frequency drive uses a rectifier to convert (AC) to (DC).
- It can be metered much easier.





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COMPRESSOR SUMMARY

- An inverter is a variable speed drive that changes the electrical frequency being fed to a motor.
- Higher heating capacities due to inverter controlled compressor - up to 7200 RPM vs. 3200-3500 RPM.
- Example of btu/h range: RXN12NMVJU **(4,400 ~ 14,000)**
- Think of the inverter drive similar to a gas pedal.

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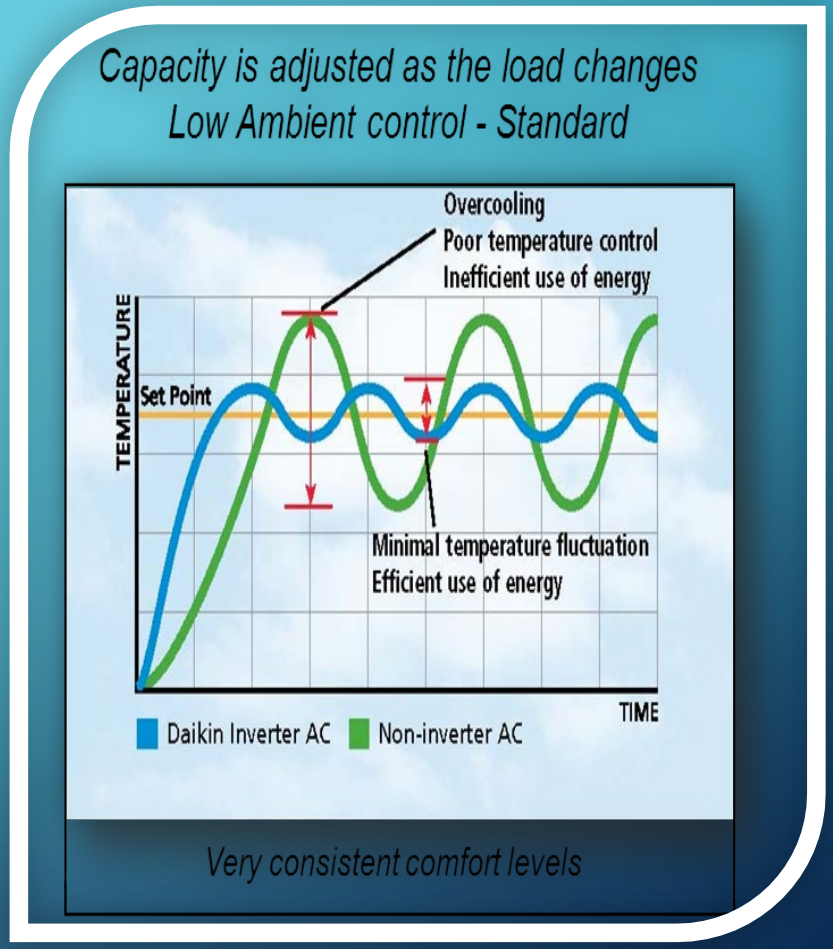
INVERTER BENEFITS

- High Efficiency in Part-Load conditions
- Very low startup amperage
- No “light flicker”
- Lubrication of bearings increases before speed increase
- System pressures increase gradually reducing noise and stress on piping
- Quiet compressor startup
- Better Dehumidification
- Fewer start/stop cycles
- As room temperature nears set point capacity is automatically “throttled down”



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DAIKIN SWING COMPRESSOR

- Friction and refrigerant leakage are suppressed
- Improved efficiency
- Increases energy savings
- Increased life time

Competitors: *Rotary*

Daikin: *Swing*

Daikin Swing Compressor Features and Benefits	
Features	**Benefits**
Smooth rotation, little friction	High operation efficiency, energy savings
Smooth piston motion	Low vibrations, low sound levels
Few parts rubbing each other	High performance, high reliability

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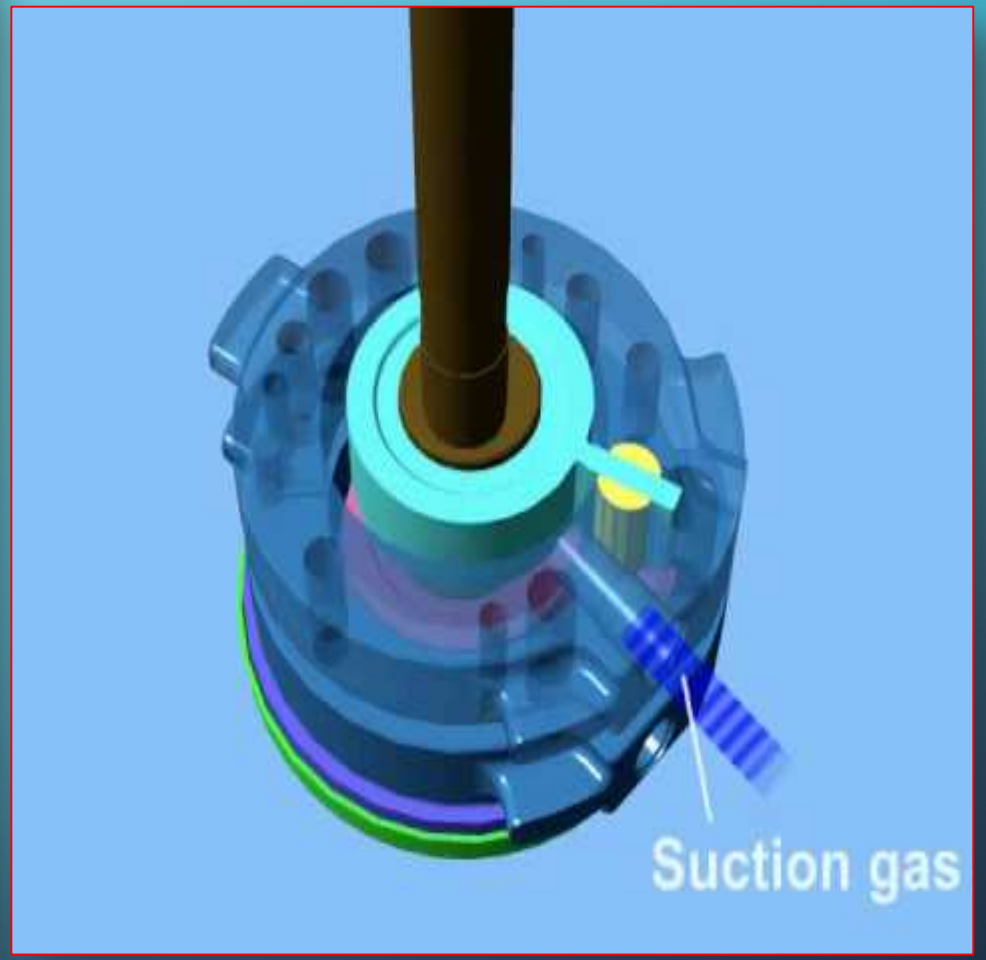
DAIKIN SWING COMPRESSOR



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Comparison

Rotary compressor
Swing compressor

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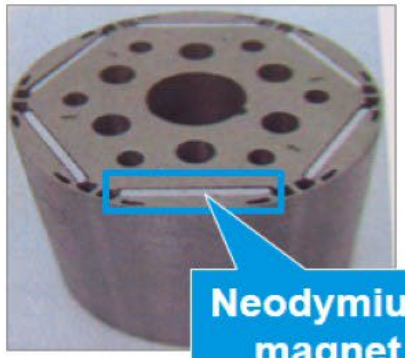
Reluctance Digitally Commutated (DC) Motor

Rotor



Neodymium magnet:
Increased to 6 pieces.

Rotation of motor is smoother for energy savings.

Rotor

Distributed Winding

Stator

Swing

Concentrated Winding

Heat transfer coil:
Distributed Winding

Concentrated winding.
The heat is reduced.

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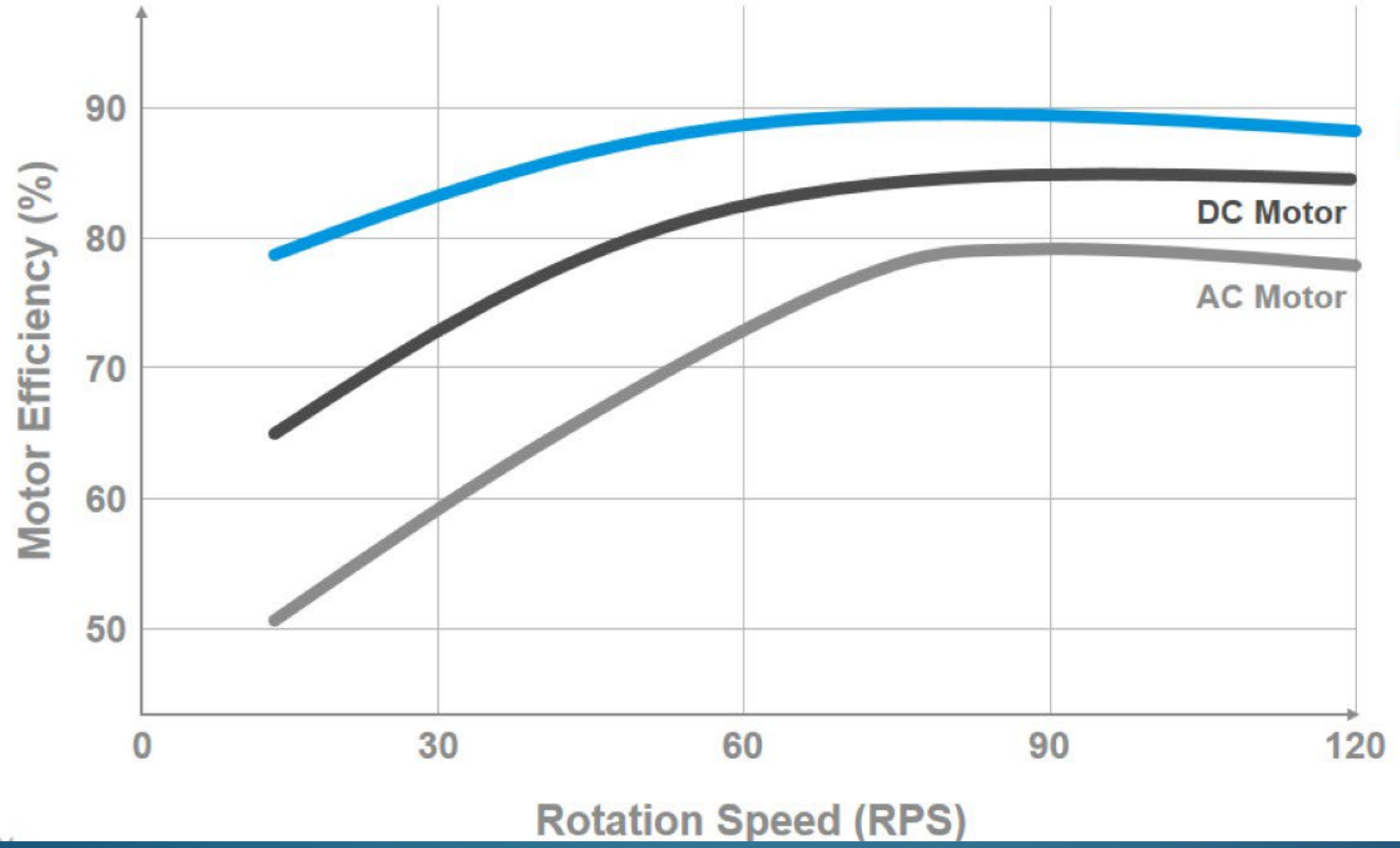
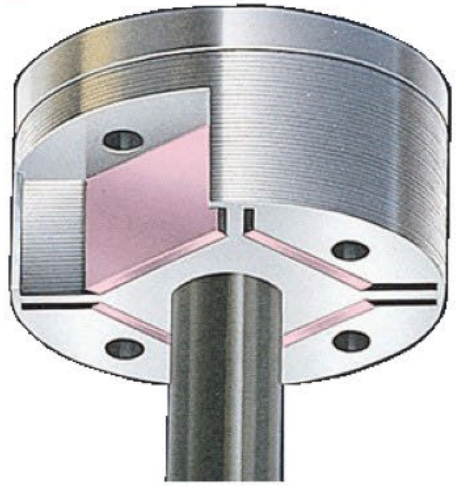
Reluctance DC Motor



Optimised DC Motor



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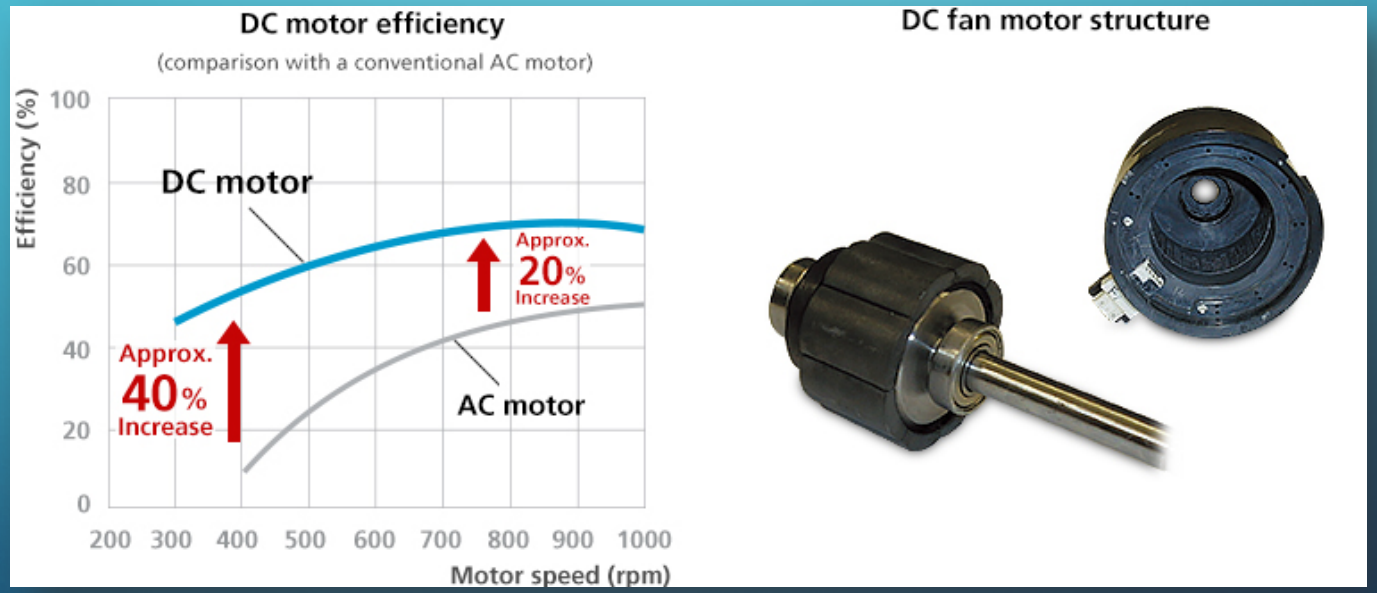
CONDENSER FAN MOTOR SUMMARY

- All Daikin systems utilize DC driven condenser fan motor
- Quiet rotation
- High efficient
- Variable speed Fan for Variable Speed Compressor



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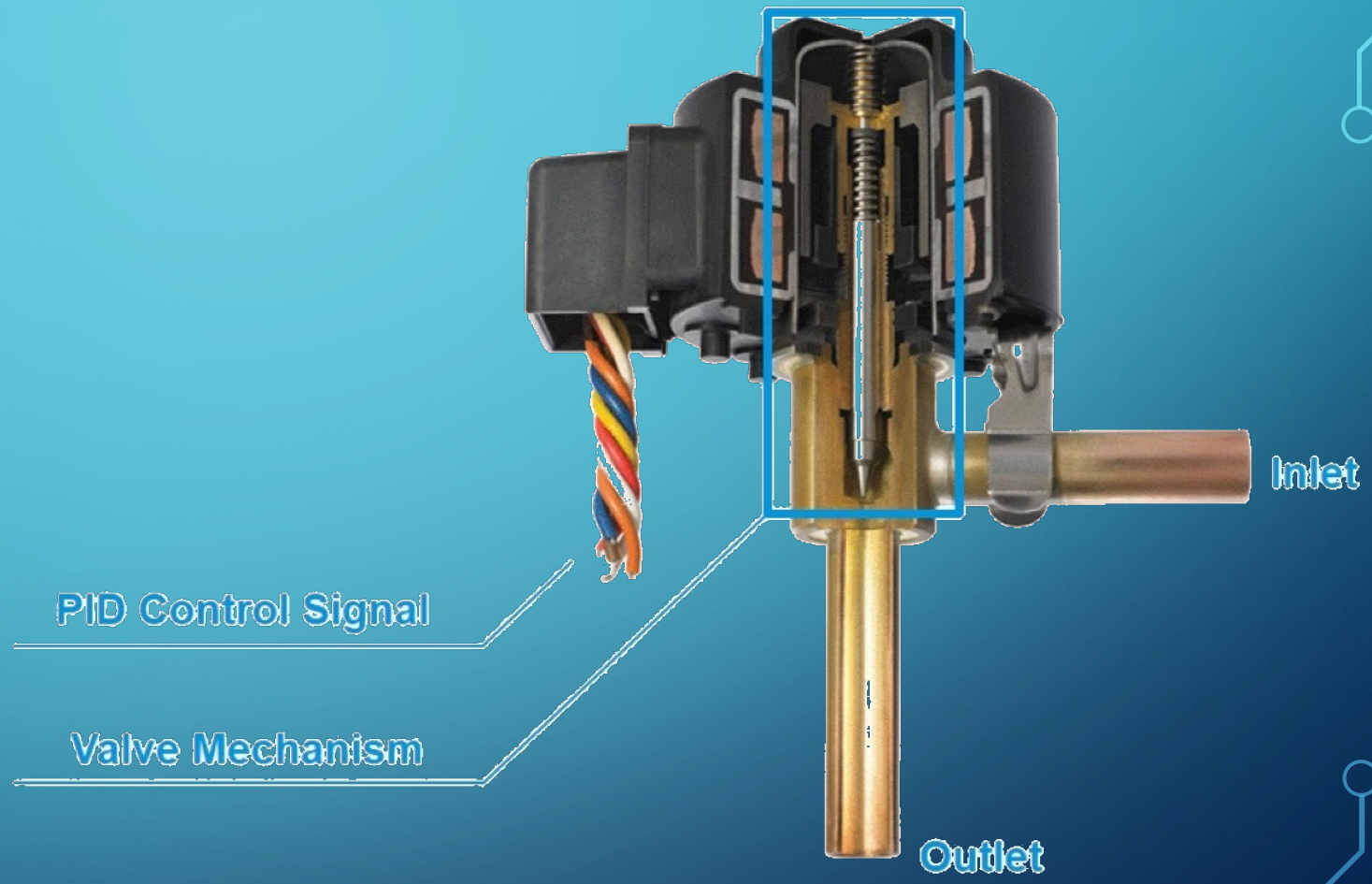
Electronic Expansion Valves - EEV

The Electronic Expansion Valve continuously adjusts the refrigerant volume in response to load variations

- Provides modulating control of up to 2,000 pulses (steps)
- Fast, accurate control response eliminates temperature swings
- Stepper motor is replaceable without recovering refrigerant



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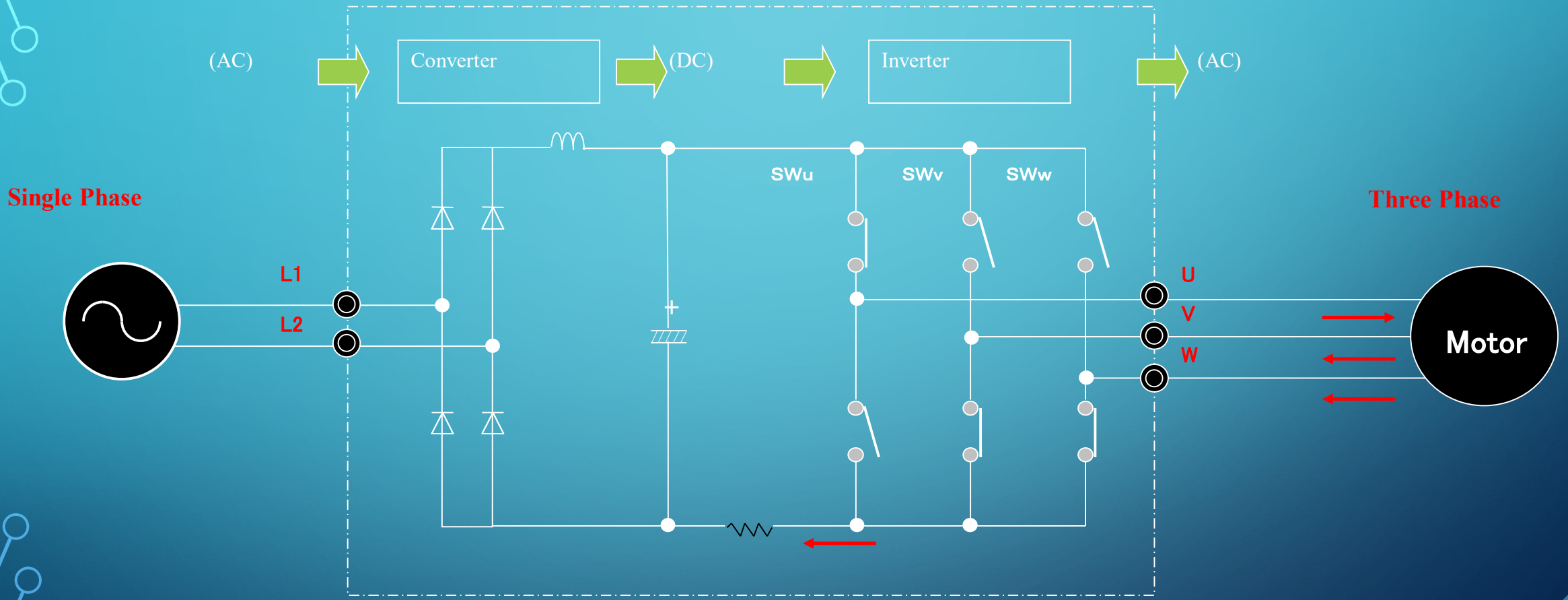

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VIRGINIA AIR
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Product Introduction & Application

1. Single Zone Ductless
2. Multi-Zone Ductless
3. Sky Air light Commercial
4. Controllers and Accessories
5. 8-Zone Mini Split Selection Tool
6. Daikin Resources

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VIRGINIA AIR
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DAIKIN APPLICATIONS

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DAIKIN APPLICATIONS

- Multiple zones
- Basements and attics

- Entire floors
- New construction

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VIRGINIA AIR
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DAIKIN KEY WORDS

- Inverter Compressor
- DC Fan Motors
- Split and Multi-Split systems
  - One – to – One
  - Up to 8 Indoor Fan Coils
  - Include Daikin Inverter Ducted
- SkyAir Systems
  - Split systems for Commercial Use
  - One-to-One only
  - Fan Coils – Wall, Slim, Cassette

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VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

Single & Multi Split, SkyAir, & Quaternity

SkyAir

Quaternity

LV Series

MXS Series

17 & 19 Series

DAIKIN AIR INTELLIGENCE™

VIRGINIA AIR DISTRIBUTORS, INC.

NOMENCLATURE OUTDOOR

Single and Multi-Zone Split Systems

How to Read Model Numbers – Outdoor Units

SINGLE-ZONE

R	X	S	09	L	VJ	U

UNIT CATEGORY
R: Air-Cooled Outdoor Unit

SYSTEM TYPE
X: R-410A Heat Pump
K: R-410A Cooling Only
G: R-410A QUATERNITY

EFFICIENCY LEVEL
N: Standard S: High
_: Mid (Blank) G: Highest
L : Low Ambient

CAPACITY

09: 9,000 BTU/h	18: 18,000 BTU/h
12: 12,000 BTU/h	24: 24,000 BTU/h
15: 15,000 BTU/h	30: 30,000 BTU/h
	36: 36,000 BTU/h

MAJOR DESIGN CATEGORY

POWER SUPPLY
VJ: 1-Phase 208/230V

STANDARD COMPATIBILITY
U: United States

MULTI-ZONE

4	M	X	S	36	NM	VJ	U

SYSTEM TYPE
2: 2-Port
3: 3-Port
4 : 4-Port
R: 8-Port
5: 5-Port

UNIT CATEGORY
M: Multi-Split Outdoor Unit (Air-Cooled)

SYSTEM TYPE
X: R-410A Heat Pump

EFFICIENCY LEVEL
S: High
L : Low Ambient

CAPACITY

18: 18,000 BTU/h	36: 36,000 BTU/h
24: 24,000 BTU/h	48: 48,000 BTU/h

MAJOR DESIGN CATEGORY

POWER SUPPLY
VJ: 1-Phase 208/230V

STANDARD COMPATIBILITY
U: United States

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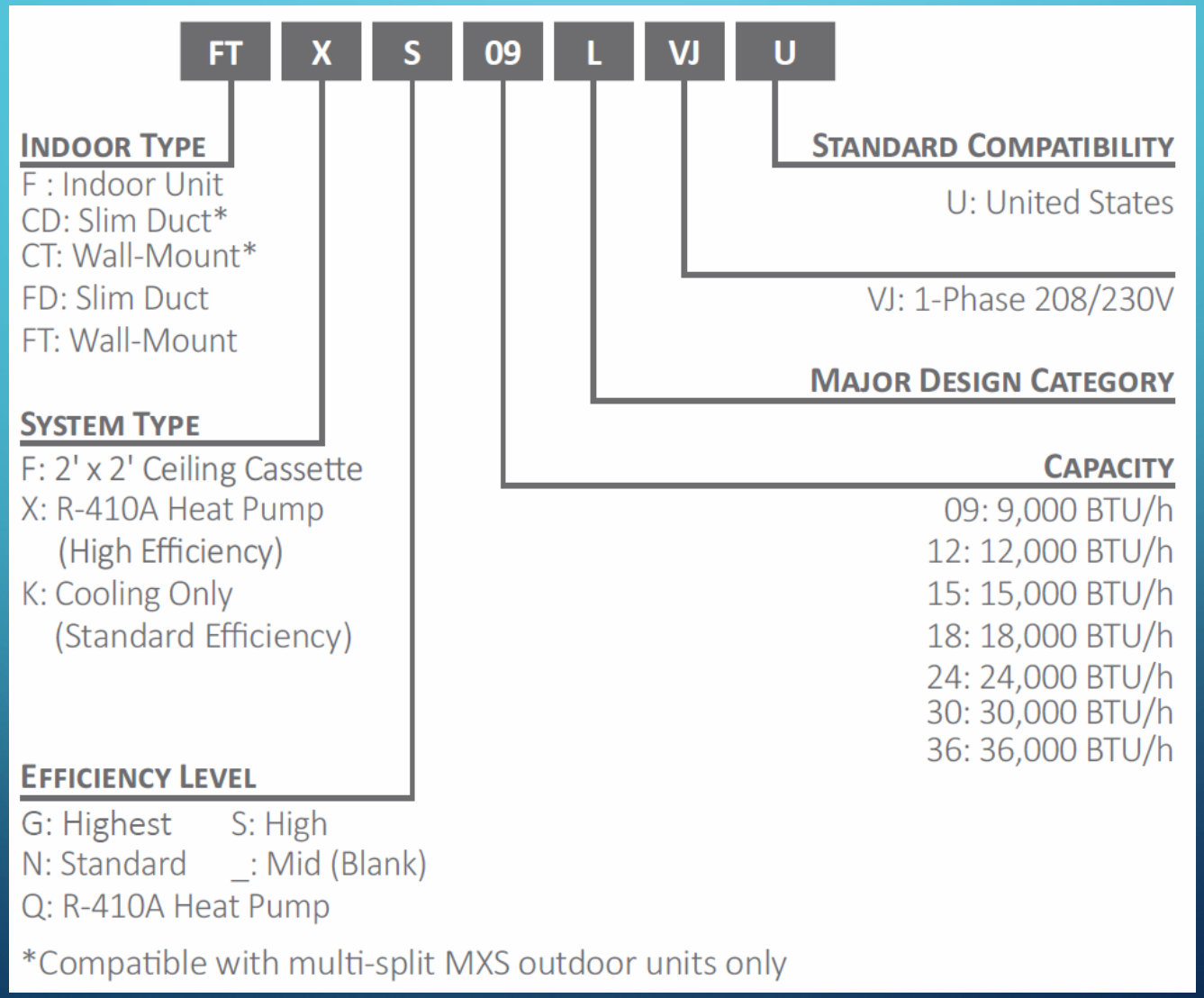
VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

NOMENCLATURE INDOOR

Single and Multi-Zone Split Systems

How to Read Model Numbers – Indoor Units



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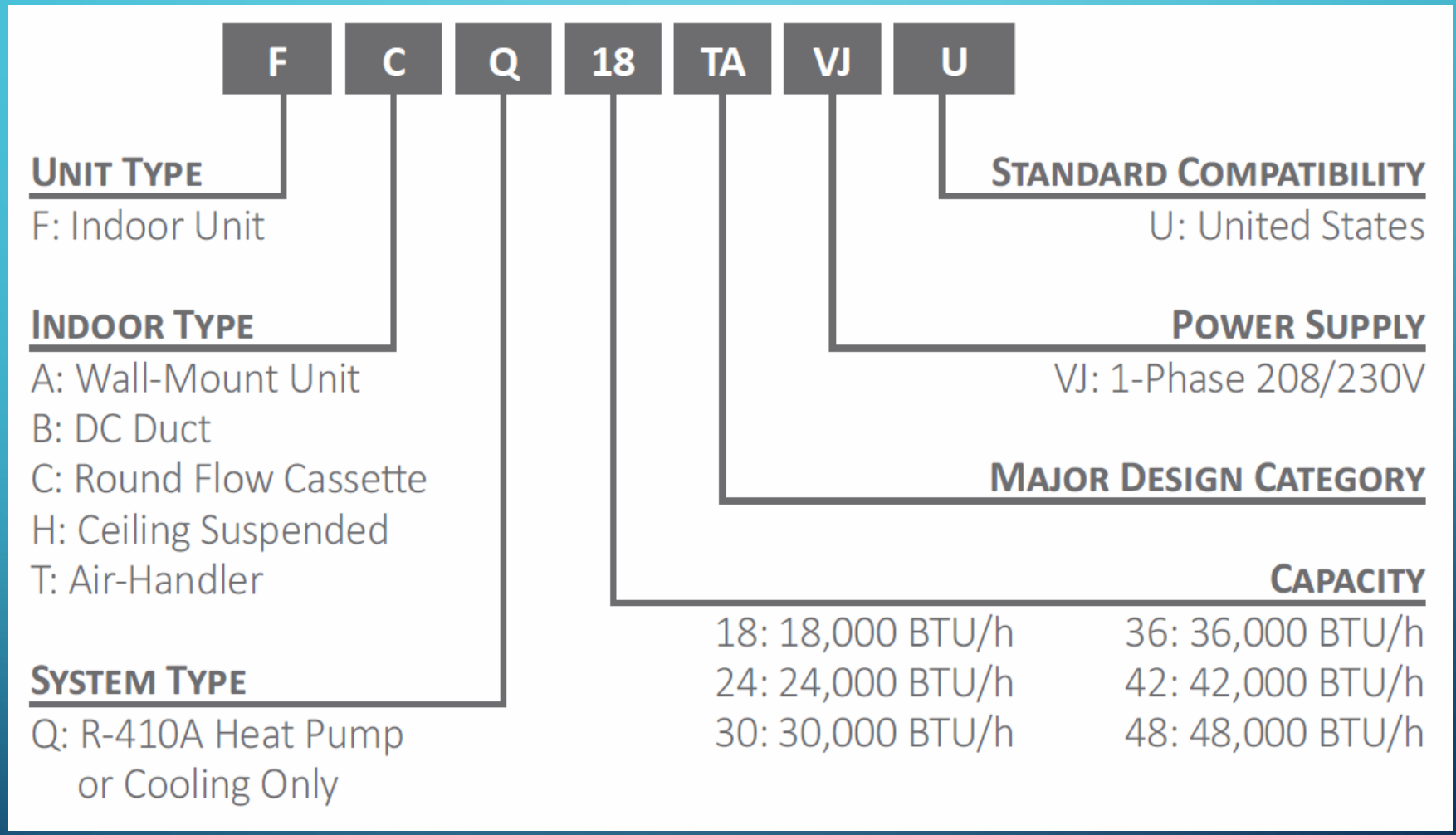
SKYAIR NOMENCLATURE



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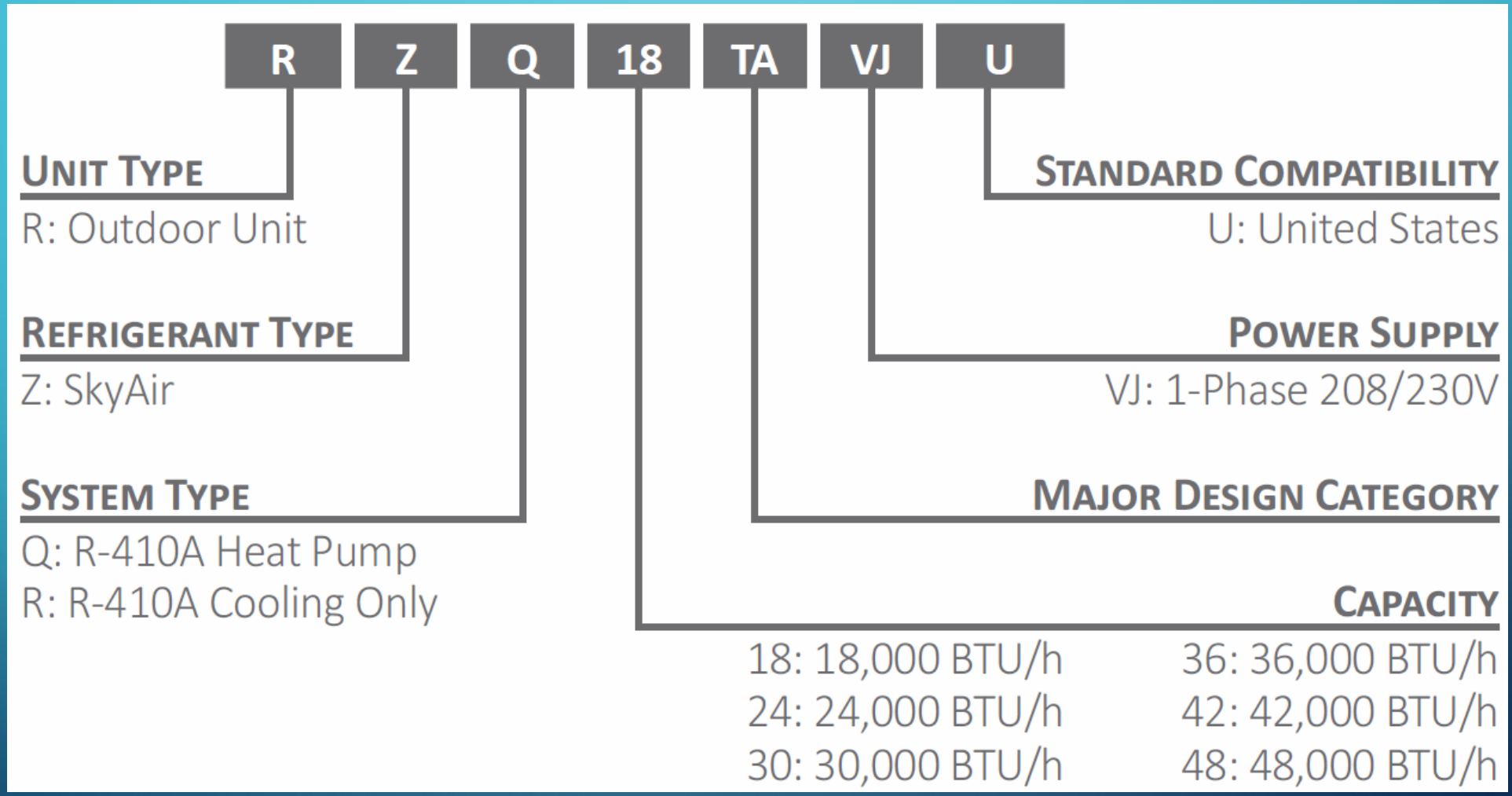
SKYAIR NOMENCLATURE



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VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

17 Series *9k – 24k* One-to-One

- 9, 12, 18, 24k Btu/h
- Heat Pump
- Low ambient down to 50 degrees
- Heat, Cool, Dry, Auto, Fan Modes
- Pre-charged for up to 25 feet of liquid line
- 66ft or 98ft of piping length

- **Handheld remote only!!!**
- **Clock on remote 24hr only**

DAIKIN AIR INTELLIGENCE™

VIRGINIA AIR DISTRIBUTORS, INC.

19 Series *9k – 24k* One-to-One

- Heat Pump or Cooling Only
- Low ambient down to ZERO degrees
- Heat, Cool, Dry, Auto, Fan Modes
- Pre-charged for up to 33 feet of liquid line
- 66 or 98ft of piping length

DAIKIN AIR INTELLIGENCE™

VIRGINIA AIR DISTRIBUTORS, INC.

DAIKIN LV SERIES – (9-24K) UP TO 24.5 SEER

- 3-D Airflow wall mount unit : 9, 12, 15, 18, 24k Btu/h
- Slim duct indoor unit: 9, 12k Btu/h
- Up to 24.5 SEER and 12.5 HSPF
- Intelligent eye occupancy sensor
- Improved indoor air quality

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VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

LV/NV SERIES 2.5 & 3 TON ONE-TO-ONE UP TO 17.5 SEER

- 30k – 36k
- Heat Pump or Cooling Only
- Extreme Low ambient down to ZERO degrees (LV only)
- Heat, Cool, Dry, Auto, Fan Modes
- Pre-charged for up to 33 feet of liquid line
- 98ft of piping length

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VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

DAIKIN Low Ambient Quick Reference Chart

	Cooling Out of Box	Heating Out of Box	Activate Low Amb Setting	Cooling After Setting	Cooling With Wind Baffle	Cooling Unit Shut Off
KE Series						
09/12K BTU	50-115°F	5-65°F	Cut Jumper J3	14-115°F	0-115°F	-4°F
15/18/24K BTU	50-115°F	5-65°F	Cut Jumper J6	14-115°F	0-115°F	-4°F
LV Series Wall Mount						
09/12K BTU	50-115°F	5-65°F	Turn on Switch B	14-115°F	0-115°F	-4°F
15/18K BTU	50-115°F	5-65°F	Turn on Switch B	14-115°F	0-115°F	-4°F
24K BTU	50-115°F	5-65°F	Turn on Switch B	14-115°F	0-115°F	-4°F
LV Series Ducted						
09/12K BTU	50-115°F	5-75°F	Turn on Switch B	14-115°F	0-115°F	-4°F
Quaternity						
09/12/15K BTU	14-109°F	-4 -75°F	N/A	N/A	N/A	-4°F
Multi-Split Wall, Ducted, Cassette						
2,3,4MXS	50-115°F	5-75°F	N/A	N/A	N/A	N/A
Sky Air LV Series						
30/36K BTU	50-115°F	5-75°F	Turn on Switch B	14-115°F	0-115°F	-4°F
Sky Air FAQ					Optional kit for Ultra Low ambient down to -40°F	
18/24K BTU	23-115°F	0-60°F	N/A	N/A	0-115°F	N/A
Sky Air FBQ						
18/24/30/36/42	23-115°F	0-60°F	N/A	N/A	0-115°F	N/A
Sky Air FCQ						
18/24/30/36/42	23-115°F	0-60°F	N/A	N/A	0-115°F	N/A
Sky Air FHQ						
18/24/30/36/42	23-115°F	0-60°F	N/A	N/A	0-115°F	N/A
Sky Air FTQ						
18/24/30/36/42	23-115°F	0-60°F	N/A	N/A	0-115°F	N/A

October 1, 2014

DAIKIN AURORA™ SERIES – SINGLE ZONE

Daikin AURORA was designed to provide high heating performance in **cold climates.**

Example **15K BTU System** (FTX15NMVJU + RXL15QMVJU)

21.3k btu's Heating @ 23°
18.3k btu's Heating @ 5°
14.8k btu's Heating @ -4°

DAIKIN
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Daikin Single & Multi-Zone Systems

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

DAIKIN AURORA™ SERIES – SINGLE ZONE

Daikin AURORA also has high performance in hot climates.

15k btu's Cooling @ 95°
15k btu's Cooling @ 104°
13.47k btu's Cooling @ 115°

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VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

1:1 AURORA WALL MOUNT (HIGH HEAT)

- Up to 100% Capacity Down to 5°f
- 9k, 12k, 15k BTU

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

1:1 AURORA FLOOR STANDING/LOW WALL (HIGH HEAT)

- **Up to 100% Capacity Down to 5°f**
- **9k, 12k, 15k BTU**

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VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

DAIKIN EMURA – (9,12,18K) UP TO 18 SEER

- Up to 18 SEER | Up to 10 HSPF
- Indoor Sound Pressure as low as 19 dB(A)
- Stylish silver or pure matte white finish
- 2-Area Intelligent Eye infrared sensor
- Comfort Mode
- Titanium Apatite Photocatalytic Air Purifying Filter for improved indoor air quality.
- Compatible with Daikin Comfort App (adaptor required)

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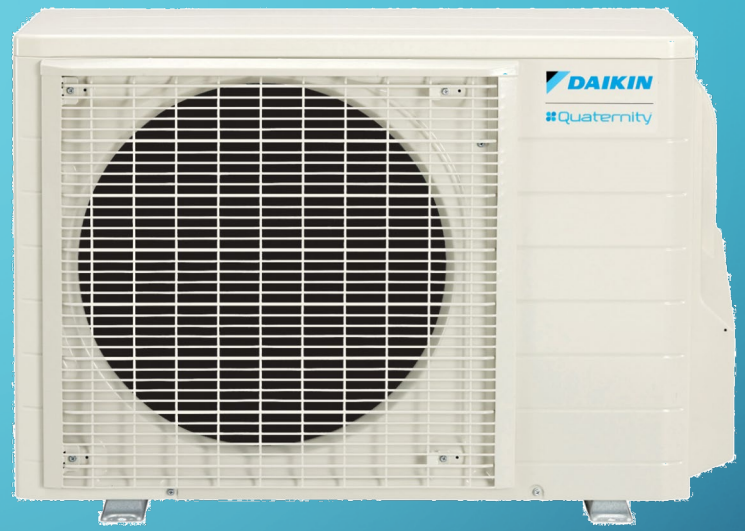
Quaternity by DAIKIN



- 9, 12, 15k Btu/h
- **Up to 26.1 SEER**
- Humidity control to a relative set point
- Advanced filtration: allergens, odors and bacteria
- Low ambient operation to -4° F

AHRI CERTIFIED www.ahridirectory.org Unitary Small HP AHRI Standard 210/240 | HEAT PUMP INVERTER R-410A | ENERGY STAR | TAX CREDIT QUALIFIED

DAIKIN AIR INTELLIGENCE™

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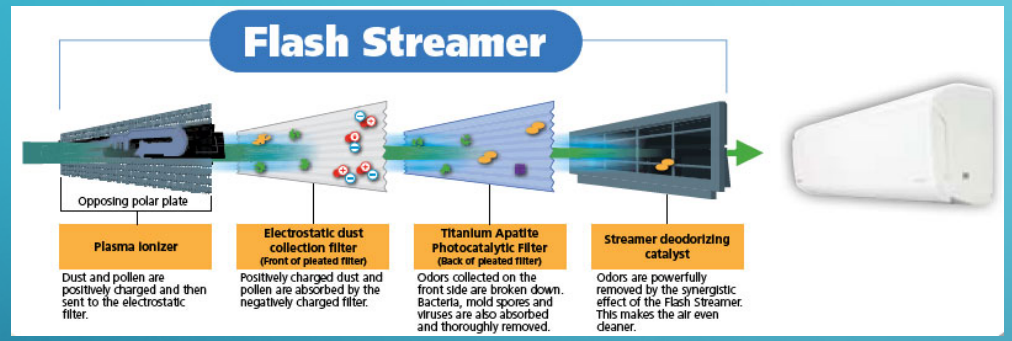
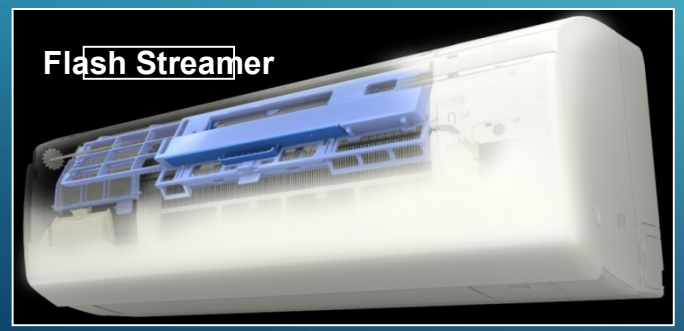
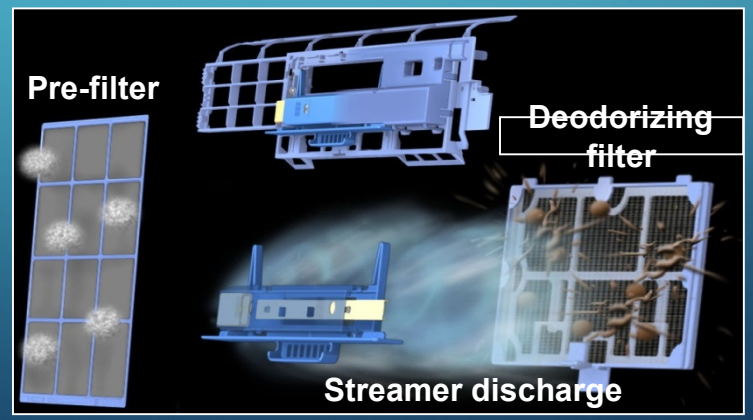
Quaternity by DAIKIN

BUILT-IN AIR PURIFICATION

FEATURES	FUNCTIONS	BENEFITS
Flash Streamer Air Purification System	Discharges electrons that analyze and remove unwanted indoor air pollutants	Cleaner and healthier indoor air







Handheld Remote Only

DAIKIN AIR INTELLIGENCE™

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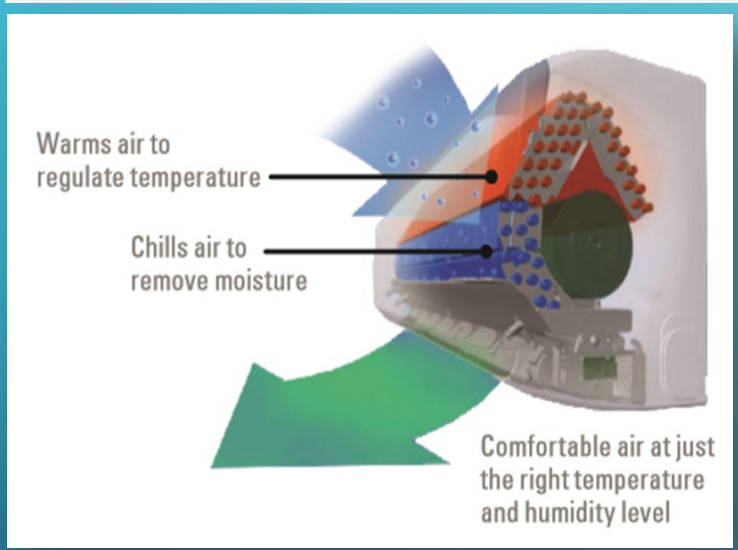
Quaternity by DAIKIN

Built-in Hot-Gas-Reheat Dehumidifier

FEATURES	FUNCTIONS	BENEFITS
Dehumidification	Dehumidifies while maintaining temperature	Year-round comfort



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VIRGINIA AIR DISTRIBUTORS, INC.

MXS Series

- Outdoor unit 18k, 24k, 36k, 48k, Btu/hr
  - Up to 19.5 SEER I 9.3 HSPF
- Inverter drive technology
- Optional wired remote controllers

Wireless Remote
ARC452

Wireless Remote
BRC7E830 (Optional)

Wired Controller
BRC944B2 (Optional)

Navigation Remote
BRC1E72 - (FFQ Only)

DaikinOne

ARC480A6- F15 SEER HP
ARC480A7- F15 SEER AC

ARC480A8- F19 SEER HP
ARC480A9- F19 SEER AC

Quaternity
Wireless Remote
ARC447A3

FTXS – Wall Mount

CTXS – Wall Mount

FDXS/CDXS
Slim Duct
FDMQ

FVXS
Floor Unit

FFQ- 2x2
Ceiling Cassette

MXS Series

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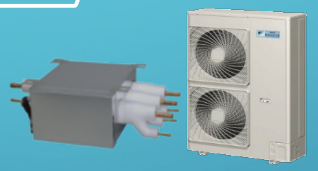
MXS – MULTI-ZONE SYSTEMS

	2 Zone	3 Zone	4 Zone	5 Zone	8 Zone
	2MXS	3MXS	4MXS	5MXS	RMXS48
Nominal Capacity	18,000	24,000	36,000	48,000	48,000
Connected Capacity	24,000	39,000	48,000	58,000	62,000



Whole Home Solutions

- Up to 18.9 SEER, 12.7 EER, 12.5 HSPF
- Multiple Styles - wall mounted, floor/low wall mount, slim duct and ceiling cassette
- Maximum Comfort and Control - up to 8 zones with individual control

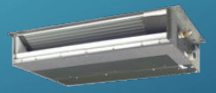
Indoor Units

CTXG
Wall Mount
09,12,18

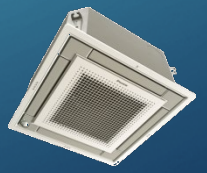
FDMQ Ducted Concealed
09,12,15,18,24

CTXS/FTXS
Wall Mount
07,09,12,15,18,24

FVXS
Floor Mount
09,12,15,18



CDXS/FDXS
Slim Duct
07,09,12,15,18,24



FFQ
2'x2' Ceiling Cassette
09,12,15,18

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VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

DAIKIN AURORA™ - MULTI-ZONE SYSTEMS

	2 Zone	3 Zone	4 Zone
	2MXL	3MXL	4MXL
Nominal Capacity	18,000	24,000	36,000
Connected Capacity	24,000	39,000	48,000

Whole Home Solutions

- Up to 18.0 SEER, 12.7 EER, 12.5 HSPF
- Up to 100% rated heating capacity @ 5°F
- Up to 100% cooling capacity @ 104°F

***Example* 1.5-Ton System** (2MXL18 & 2 FTXS09's)

36k btu's Heating @ 43°
19k btu's Heating @ 5°
11.36k btu's Heating @ -13°

24k btu's Cooling @ 95°
22.88k btu's Cooling @ 104°
19.59k btu's Cooling @ 115°

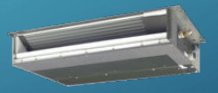
Indoor Units

CTXG
Wall Mount
09,12,18

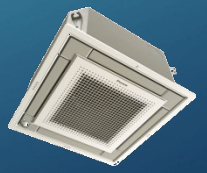
FDMQ Ducted Concealed
09,12,15,18,24

CTXS/FTXS
Wall Mount
07,09,12,15,18,24

FVXS
Floor Mount
09,12,15,18



CDXS/FDXS
Slim Duct
07,09,12,15,18,24



FFQ
2'x2' Ceiling Cassette
09,12,15,18

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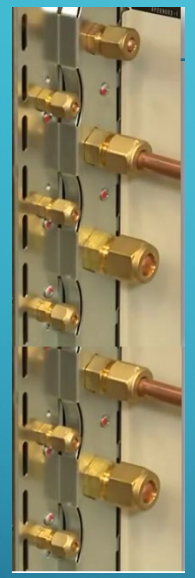
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

5MXS MULTI SPLIT CONDENSERS



5 Zone

- **5MXS48MVJU** **4 Ton**
- **Up to 58,000 BTU fan coil combination capacity**
- **No Branch boxes necessary!**

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

MULTI PORT LINESET LENGTH GUIDELINES

2 Port System

- 82ft per port -

3 Port System

- 82ft per port -

4 Port System

- 82ft per port -

5 Port System

- 98ft per port -

Cannot Exceed Total 164ft

Cannot Exceed Total 230ft

Cannot Exceed Total 230ft

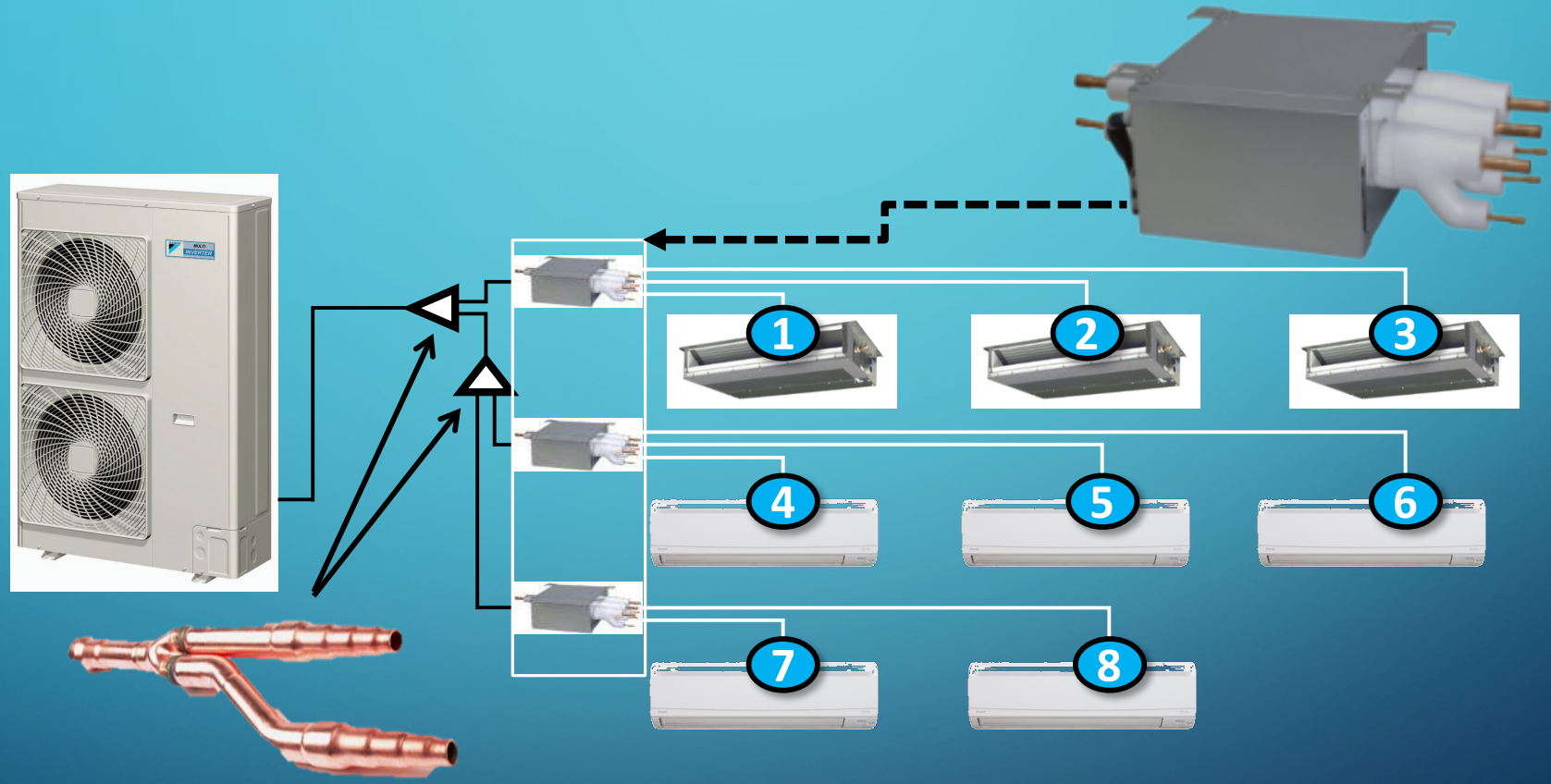
Cannot Exceed Total 262ft

AIR INTELLIGENCE™

VIRGINIA AIR DISTRIBUTORS, INC.

RMXS SERIES (8-ZONE) 48K – 62K

- Up to 19.5 SEER, 12.6 EER, 9.2 HSPF



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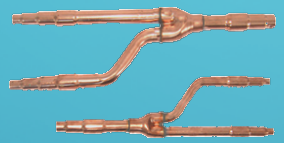
VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

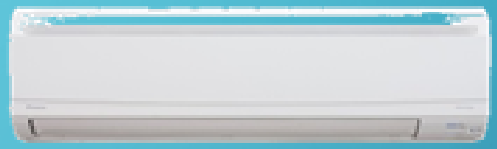
SUPER MULTI PLUS - 8 ZONE SYSTEM

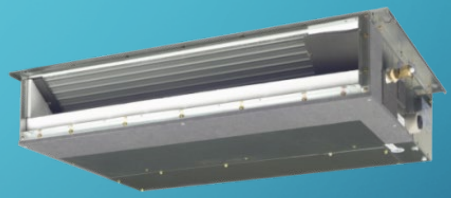
Components in Super Multi Plus

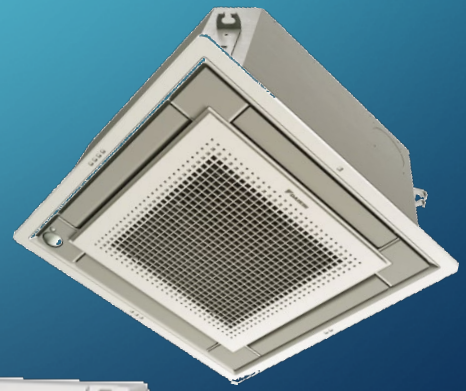


REFNET
"Y" Joint

Branch Port Box







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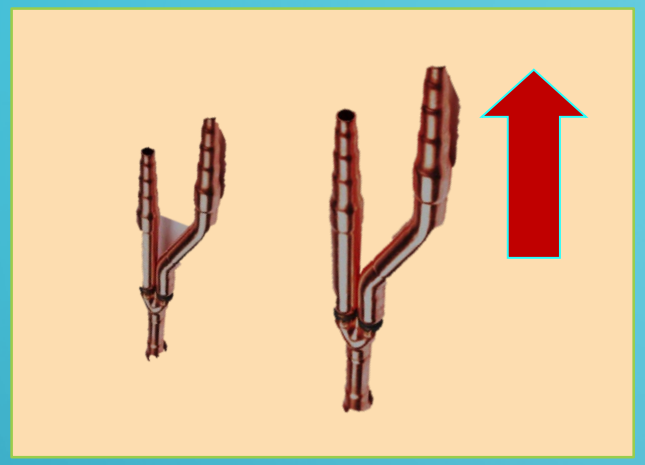
VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

REFNET "Y" JOINT INSTALLATION



- REFNET Y Joints to be installed: straight up - straight down – level (+/- 30°)
- Refnets must be insulated (supplied in box)
- **All REFNETS are braze connection**
- Each REFNET included in the branch kit is labeled to identify circuit:
  - Liquid – Gas

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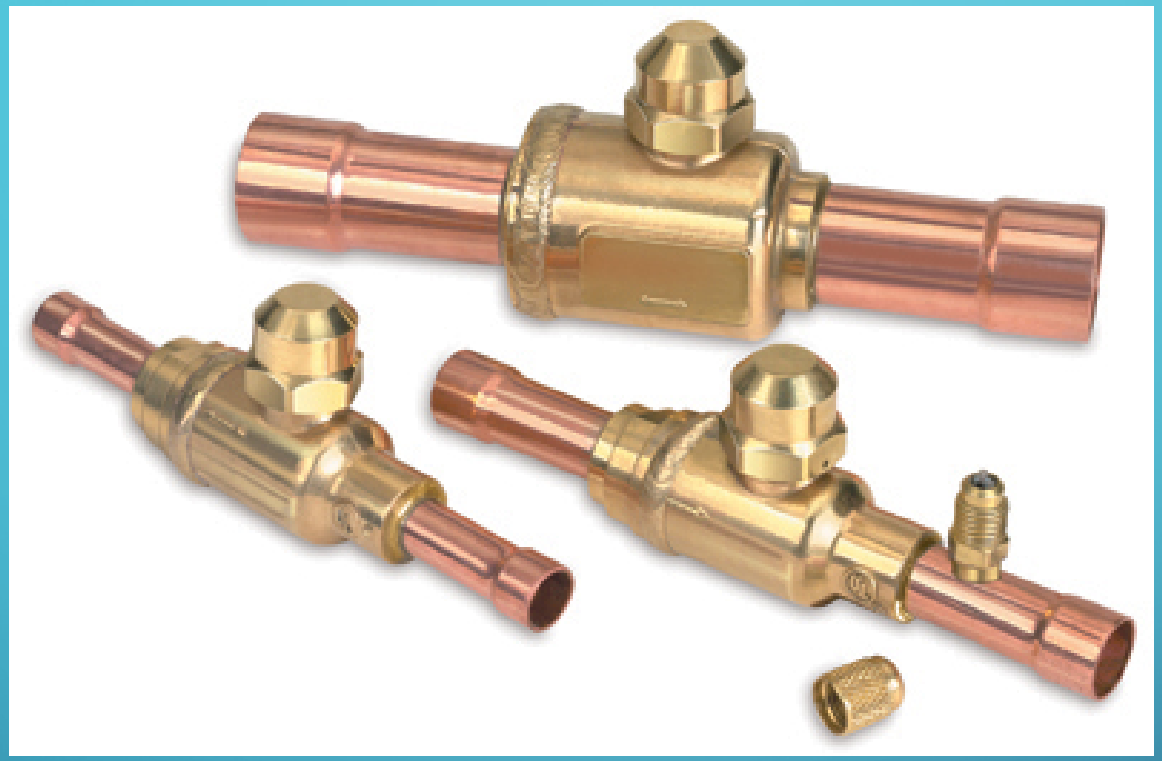
VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

REFRIGERATION BALL VALVES FOR SUPER MULTI PLUS



- Contractor discretion to use upon install
- Must be: Full port, Schrader core, compatible with PVE oil & R-410A, withstand 550psi.
- Helps to isolate leaks instead of pumping down entire system.

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

RMXS FEATURES

- Max Cooling Capacity – 48,000 Btu/h (Heating 54,000 Btu/h)
- **Up to 62,000 BTU fan coil combination capacity**
- Up to 18.8 SEER (HSPF 11.3)
- 130% Connection Ratio
- 440 feet total pipe length
- Operating Range
  - Cooling 23° to 115° F
  - Heating 5 ° to 75° F

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

VERIFY YOUR COMBINATIONS – SEE REF. GUIDE

Port	2MX*18*	3MX*24*	4MX*36*	5MXS48
A	07, 09, 12	07, 09, 12	07, 09, 12	07, 09, 12
B	# # # 07 09 12 15	# # # 07 09 12 15 18	# # # 07 09 12 15 18	# # # 07 09 12 15 18
C	———	# # # 07 09 12 15 18	# # # 07 09 12 15 18	# # # 07 09 12 15 18
D	———	———	▲ ▲ ▲ ■ ■ 07 09 12 15 18 24	▲ ▲ ▲ ■ ■ 07 09 12 15 18 24
E				▲ ▲ ▲ ■ ■ 07 09 12 15 18 24

●	Use a reducer to connect pipes.
#	Use No. 2 and 4 reducers
▲	Use No. 5 and 6 reducers
■	Use No. 1 and 3 reducers

Two 24k indoor with 4MX*36 requires kit 4015875

DAIKIN AIR INTELLIGENCE™

VIRGINIA AIR DISTRIBUTORS, INC.

Daikin Multi-Zone Combinations

Max: 24k BTU/h	Max: 39k BTU/h		Max: 48k BTU/h					Max: 48k BTU/h								
2MXI18 / 2MXS18	3MXI24 / 3MXS24		4MXL36 / 4MXS36					5MXS48								
2 Zone	2 Zone	3 Zone	2 Zone	3 Zone		4 Zone		2 Zone	3 Zone		4 Zone			5 Zone		
07+07	07+07	07+07+07	07+07	07+07+07	09+09+15	07+07+07+07	07+09+09+18	07+07	07+07+07	09+09+24	07+07+07+07	07+09+12+12	09+09+12+12	07+07+07+07+07	07+07+09+12+18	09+09+09+09+18
07+09	07+09	07+07+09	07+09	07+07+09	09+09+18	07+07+07+09	07+09+12+12	07+09	07+07+09	09+12+12	07+07+07+09	07+09+12+15	09+09+12+15	07+07+07+07+09	07+07+09+15+15	09+09+09+12+12
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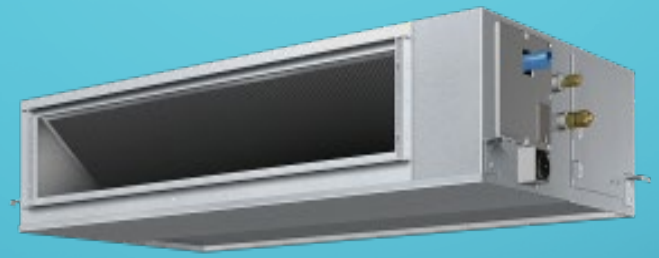
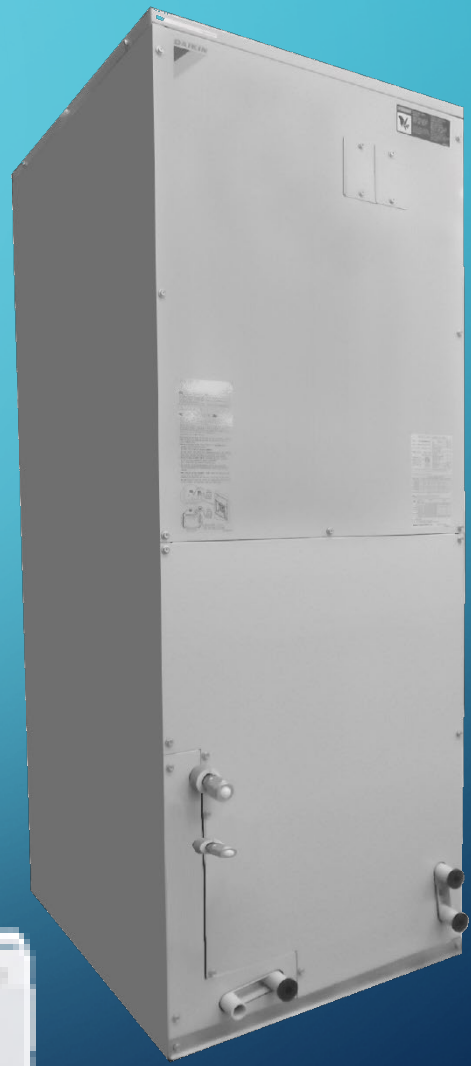
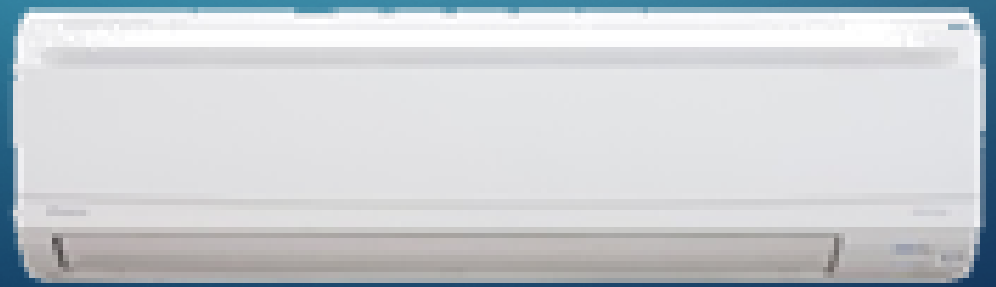
									09+09+15	15+18+24	07+09+09+18	09+09+09+18		07+07+09+12+12	09+09+09+09+12	
									09+09+18	18+18+18	07+09+09+24	09+09+09+24		07+07+09+12+15	09+09+09+09+15	

SkyAir







DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

Key Points of Sky Air

- Single phase
- 18,000 to 48,000 Btu/h
- Up to 20 SEER
- Restaurants, shops, small offices, data/server rooms and more light commercial applications
- Large residential bonus rooms, new additions, etc…
- Long lineset lengths from 164ft to 230 FEET
- Largest one-to-one application with capacity up to 48,000 Btu/h.
- Low ambient capabilities right out of the box

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

LINESET LENGTH GUIDELINES

1.5 – 2.5 TON

SkyAir

-164ft-

3 – 4 TON

SkyAir

- 230ft -

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

SKY AIR CASSETTE

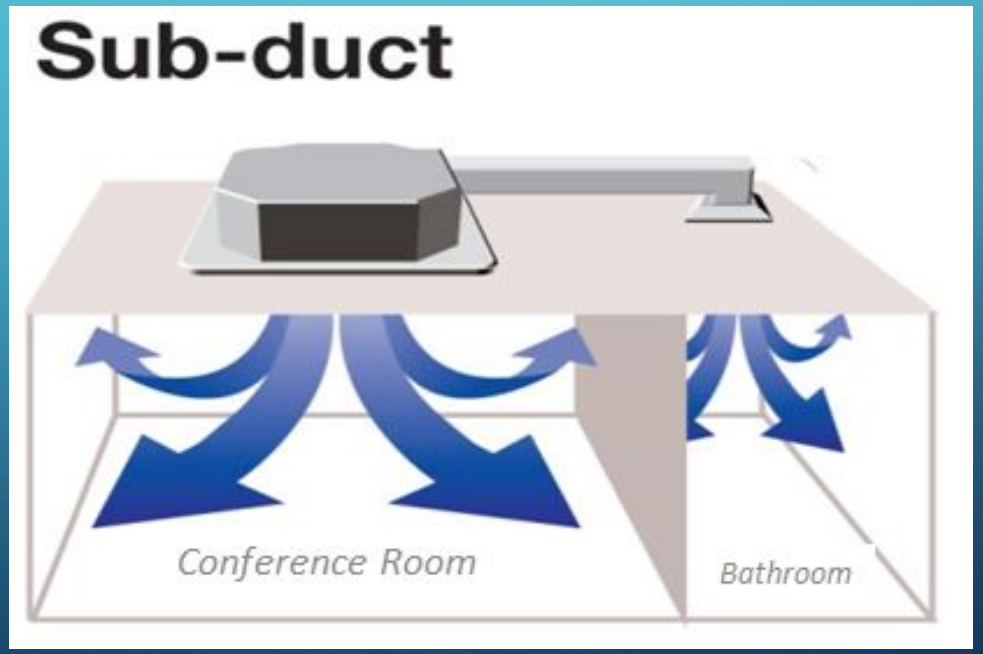
- Variable Speed Compressor
- Roundflow Cassette AHU
- 3 x 3 AHU Dimension
- Optional 4” Duct from Cassette Shell
- Built-in Condensate Pump
- 1.5 – 4 Ton

FCQ Model

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

SKY AIR CASSETTE – DISCHARGE/FRESH AIR OPTIONS



DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

ROUND FLOW SENSING CASSETTE (FCQ)

Normal operation → **Daily automatic filter cleaning** → **Dust box is full** → **Empty dust box**

Detect dust system (based on full box or certain number of hours)

GREEN	GREEN BLINKING	RED BLINKING	
			

DAIKIN AIR INTELLIGENCE™

VIRGINIA AIR DISTRIBUTORS, INC.

SKY AIR SLIM DUCT

SkyAir

FBQ Model

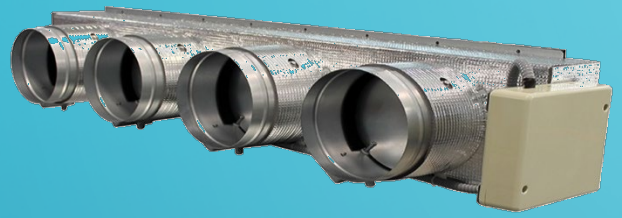
- Variable Speed Compressor
- High Velocity Air Handler
- AHU Up to 0.8” Static Discharge
- 1.5 – 4 Ton
- Built-in Condensate Pump/Float Switch

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

Daikin Zoning Kit — DZK

"Enables multiple individually-controlled zones to be served by one Daikin indoor unit fan coil"



Zoning Box

FBQ Air Handler

Main Thermostat

Wireless Thermostats

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

SKY AIR WALL MOUNT

- Variable Speed Compressor
- AHU Wide Angle Louvers
- Auto Swing Function
- 18K, 24K btu

FAQ Model

DAIKIN
AIR INTELLIGENCE™

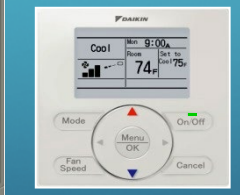
VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

SKY AIR CEILING SUSPENDED

SkyAir

FHQ Model

- Variable Speed Compressor
- AHU "Air-Throw" 25 – 30 Feet
- Auto-swing - 100° airflow pattern
- 1.5 – 3.5 Ton



DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

SKY AIR CONVENTIONAL AIR HANDLER

SkyAir

FTQ Model

- Variable Speed Compressor
- Variable Speed Air Handler
- Heating down to ZERO degrees with no back up heat
- Four Way Convertible
- 1.5 – 4 Ton
- Competitively Priced

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

Controls

Daikin One

Wired Controller
BRC944B2
(Optional)

Navigation Remote
BRC1E73 - (FFQ Only)

Wireless Remote
ARC452

Wireless Remote
BRC7E830
(Optional)

ARC480A6-F15 SEER HP
ARC480A7-F15 SEER AC
ARC480A8-F19 SEER HP
ARC480A9-F19 SEER AC

Quaternity
Wireless
Remote
ARC447A3

DAIKIN
AIR INTELLIGENCE™

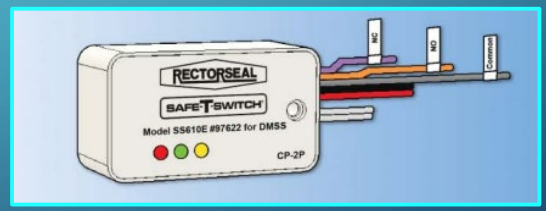
VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

OPTIONAL FLOAT SWITCH SS610E

- **FTXS/CTXS/FTXN/FTXG/FTXB Wallmount Units**
  - Condensate overflow protection for all Daikin wallmount fan coil units
    - Microelectronic control
    - No moving parts
  - Simple two component installation
    - Drain Pan Water Sensor
    - Electronic Control Switch

Drain Pan Water Sensor

DACA- CFS1

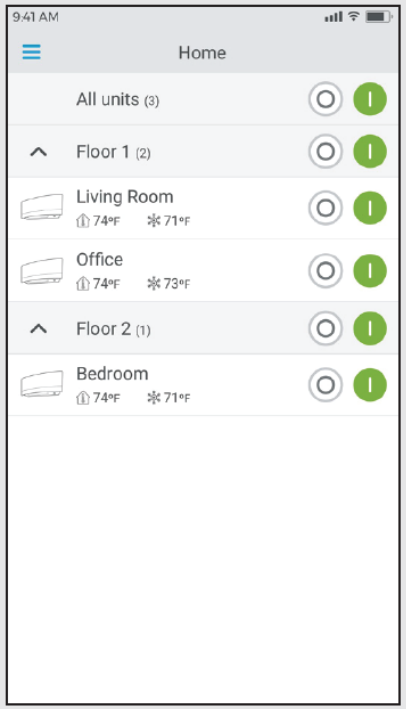


Electronic Control Switch
Line Voltage Powered

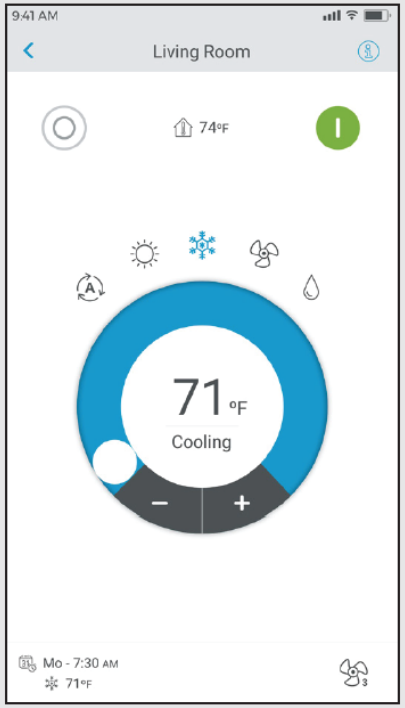
DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

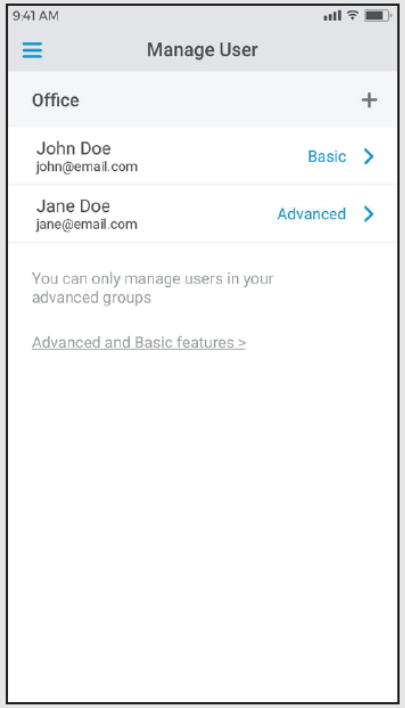
SKYAIR WIRELESS ADAPTER



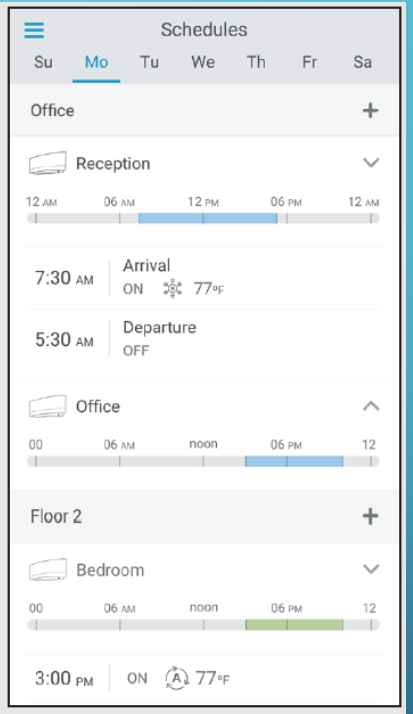
Indoor unit control and monitoring. Unlimited indoor units can be added to one account. Control indoor units as a group.



Control and monitor indoor unit's ON/OFF, mode, setpoint, fan speed, room temperature, and error status.



Leveled user authority options: Basic/Advanced



7 Days Schedule

AZAI6WSCDKA

FDMQ/FFQ/SkyAir only!!!
Connecting to P1 & P2

DAIKIN
AIR INTELLIGENCE™

VIRGINIA AIR
VIRGINIA AIR DISTRIBUTORS, INC.

WIRELESS INTERFACE ADAPATER AND COMFORT CONTROL APP

Walk through basic installation

- Wireless interface adapter
  - Installation manual
  - Installation pictures
- Connecting the adapter to a network
  - WPS
  - Manual Connection

Wireless Interface Adapter (BRP072A43)

App Navigation and Control

- Basic mode control
- Setting a schedule
- Overview groups and group control

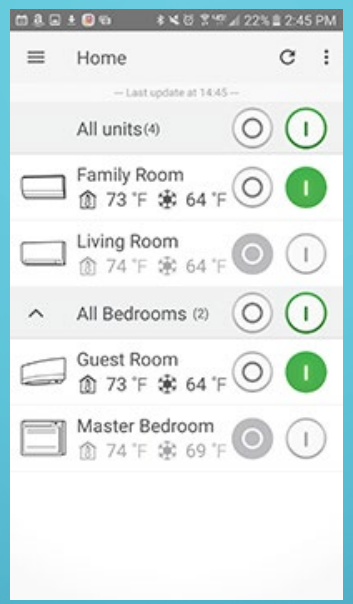
Daikin Control Comfort App

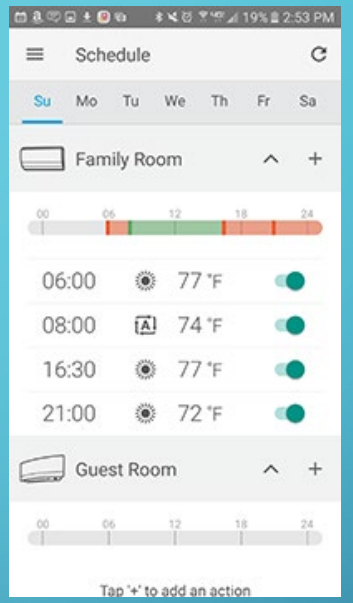
DAIKIN AIR INTELLIGENCE™

VIRGINIA AIR DISTRIBUTORS, INC.

NEW WIFI CONTROL MODULE

- **New WiFi Controller**
- **Excellent price point**
- **One per handler**





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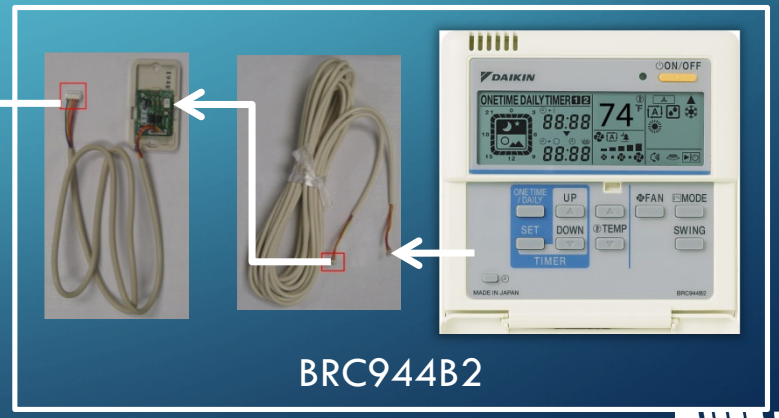
KRP980B2 INTERFACE ADAPTER KIT

Use with select single zone indoor models when using optional wall controllers.
19 Series

KRP980B1

To S21 connector



BRC944B2

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DAIKIN RESOURCES

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DAIKIN EQUIP APP

- Search “Daikin eQuip” in the Apple App Store or Android Market

- Awesome Features:
  - Technical Data
  - Product Manuals
  - Marketing Flyers
  - Submittal Sheets
  - Parts
  - 3D Dealer Locator

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THE INSTALLATION MANUAL

DAIKIN

DAIKIN ROOM AIR CONDITIONER

INSTALLATION MANUAL

R410A Split Series

INVERTER

English

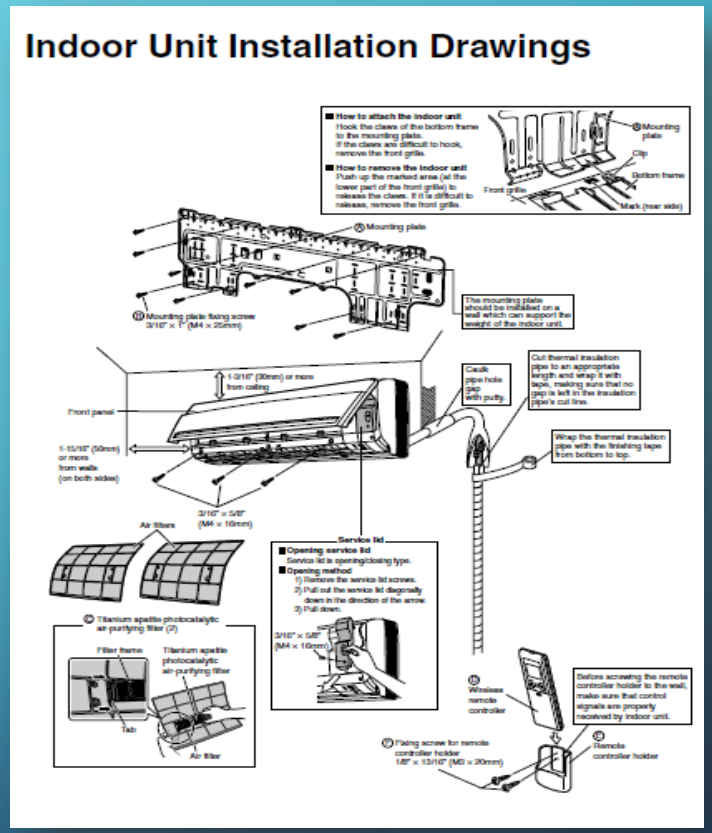
Français

Español

Installation manual

Manuel d'installation

Manual de instalación



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THE ENGINEERING DATA MANUAL

- Installation, Operation, Engineering Data All-In-One

DAIKIN

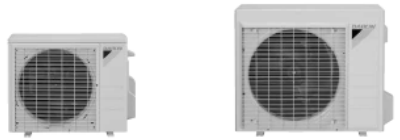
EDUS041502

R-410A

Engineering Data

Split Type Air Conditioners
- Cooling Only / Heat Pump -
SEER 18 Models

FTK(X)-N Series



INVERTER

FTX18NMVJU + RX18NMVJU

60 Hz, 208 V
Cooling

AFR	20.2
BF	0.27

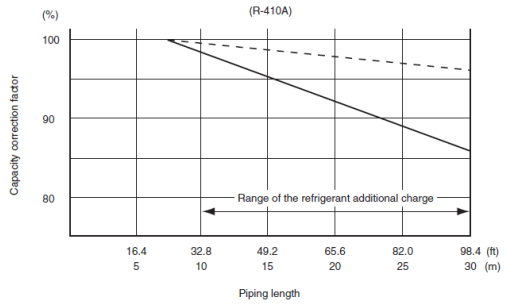
Temp: Celsius
TC, SHC, PI: kW

INDOOR		OUTDOOR TEMPERATURE (°CDB)																	
EWB	EDB	20			25			30			32			35			40		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20.0	5.41	4.15	1.11	5.16	4.03	1.21	4.92	3.91	1.32	4.82	3.86	1.36	4.67	3.79	1.43	4.43	3.67	1.53
16.0	22.0	5.65	4.08	1.11	5.41	3.96	1.22	5.16	3.85	1.32	5.06	3.81	1.37	4.92	3.74	1.43	4.67	3.63	1.54
18.0	25.0	5.90	4.29	1.12	5.65	4.19	1.22	5.40	4.08	1.33	5.31	4.04	1.37	5.16	3.98	1.44	4.91	3.88	1.54
19.4	26.7	6.02	4.54	1.12	5.77	4.44	1.23	5.53	4.34	1.33	5.43	4.30	1.38	5.28	4.24	1.44	5.03	4.15	1.55
22.0	30.0	6.38	4.39	1.13	6.14	4.30	1.24	5.89	4.21	1.34	5.79	4.18	1.39	5.64	4.12	1.45	5.40	4.04	1.56
24.0	32.0	6.63	4.28	1.14	6.38	4.20	1.24	6.13	4.12	1.35	6.04	4.09	1.39	5.89	4.04	1.46	5.64	3.96	1.56

Temp: Fahrenheit
TC, SHC: kBtu/h
PI: kW

INDOOR		OUTDOOR TEMPERATURE (°FDB)																	
EWB	EDB	68			77			86			90			95			104		
°F	°F	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
57.2	68.0	18.46	14.15	1.11	17.62	13.74	1.21	16.78	13.34	1.32	16.44	13.17	1.36	15.94	12.93	1.43	15.10	12.54	1.53
60.8	71.6	19.29	13.91	1.11	18.45	13.52	1.22	17.61	13.14	1.32	17.27	12.99	1.37	16.77	12.77	1.43	15.93	12.40	1.54
64.4	77.0	20.12	14.64	1.12	19.28	14.28	1.22	18.44	13.93	1.33	18.10	13.79	1.37	17.60	13.58	1.44	16.76	13.23	1.54
67.0	80.0	20.53	15.50	1.12	19.69	15.16	1.23	18.85	14.82	1.33	18.52	14.68	1.38	18.00	14.48	1.44	17.18	14.15	1.55
71.6	86.0	21.78	14.97	1.13	20.94	14.67	1.24	20.10	14.37	1.34	19.76	14.25	1.39	19.26	14.07	1.45	18.42	13.78	1.56
75.2	89.6	22.61	14.60	1.14	21.77	14.32	1.24	20.93	14.05	1.35	20.59	13.94	1.39	20.09	13.78	1.46	19.25	13.51	1.56

7.3.3 24 Class



Note: The graphs show the factor when additional refrigerant of the proper quantity is charged.

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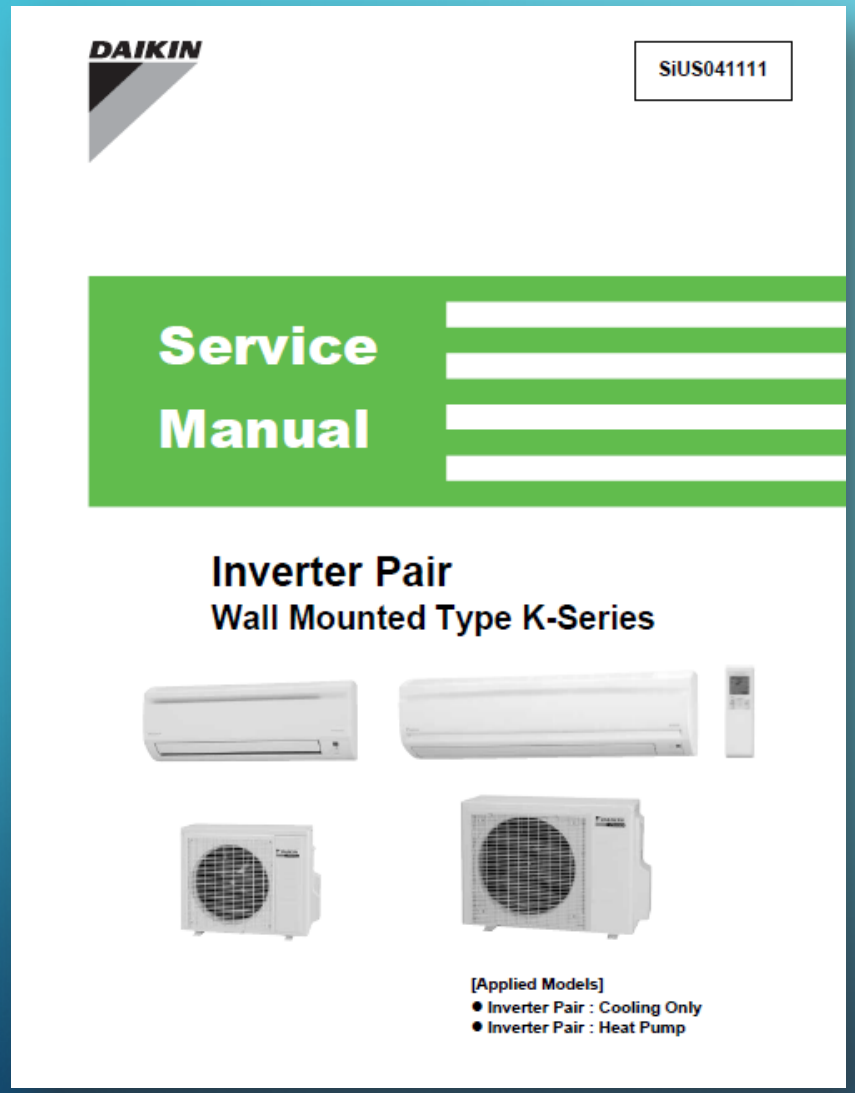
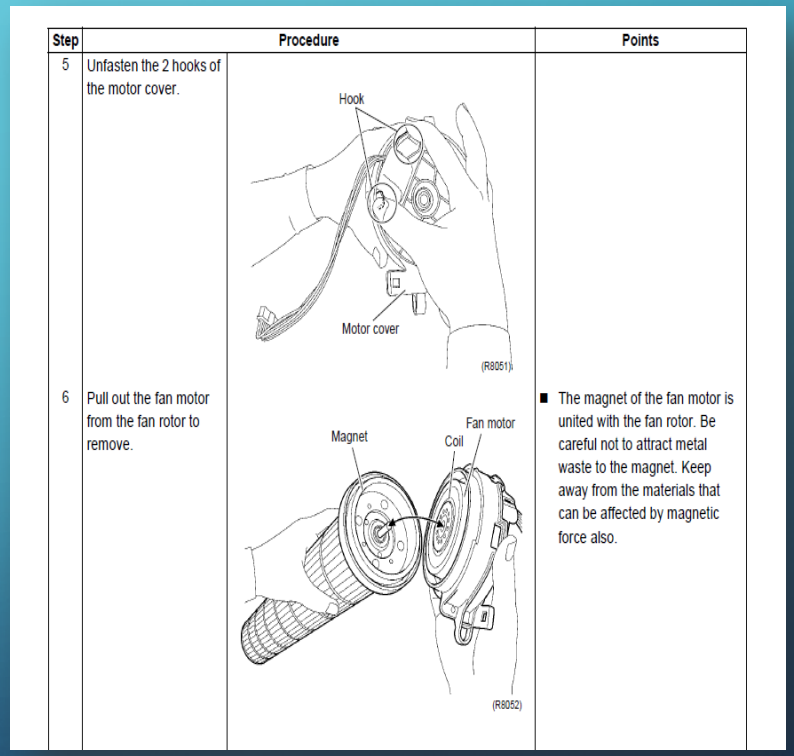
THE SERVICE MANUAL



- Great tool for servicing units
- Contains removal procedures for all main parts of indoor and outdoor sections



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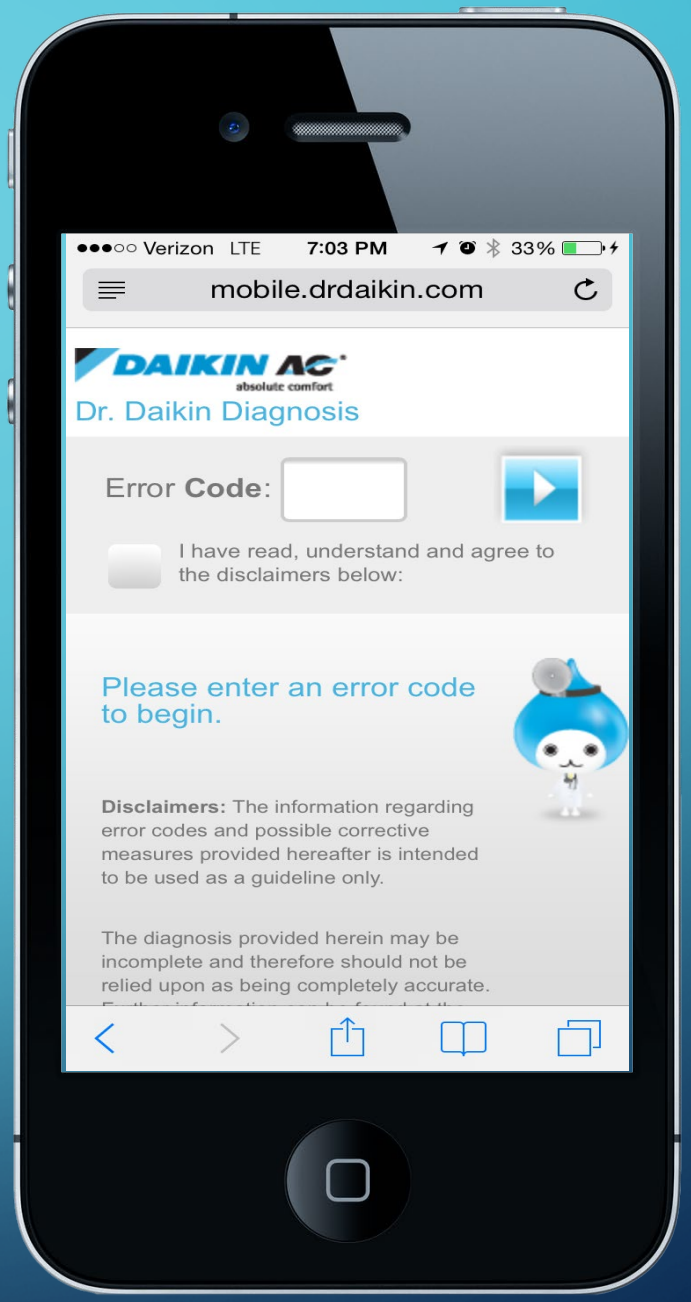
DR. DAIKIN

Your Virtual Help Desk

- http://mobile.drdaikin.com
- 1.866.4.DAIKIN



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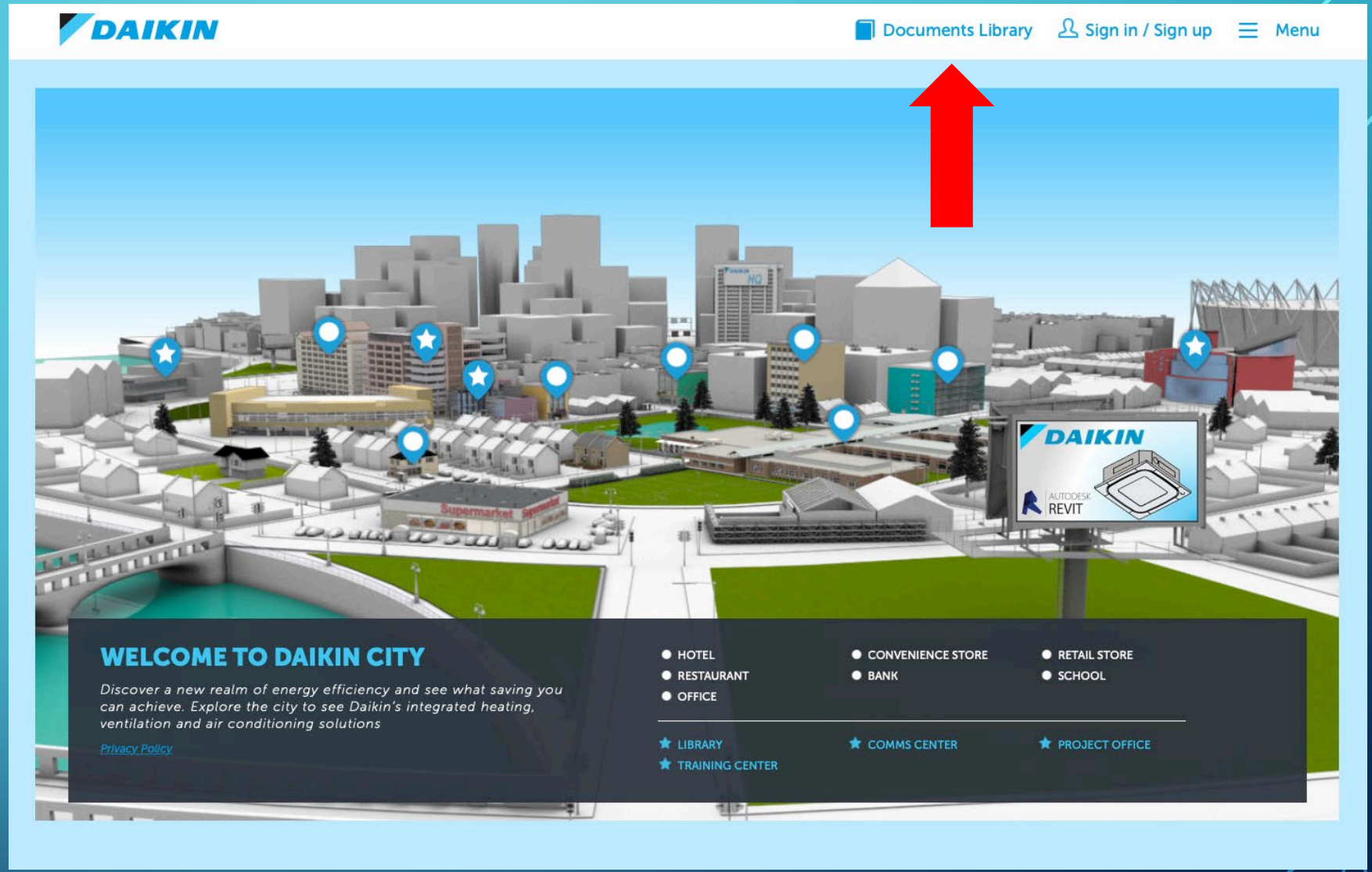
DAIKIN CITY

- www.daikincity.com
  - Submittals
  - Installation Manuals
  - Engineering Guides
  - RMXS System Builder
  - Product Information
  - Marketing Materials
  - Logos/Images
  - Daikin University Training Center for sign-up through Daikin City



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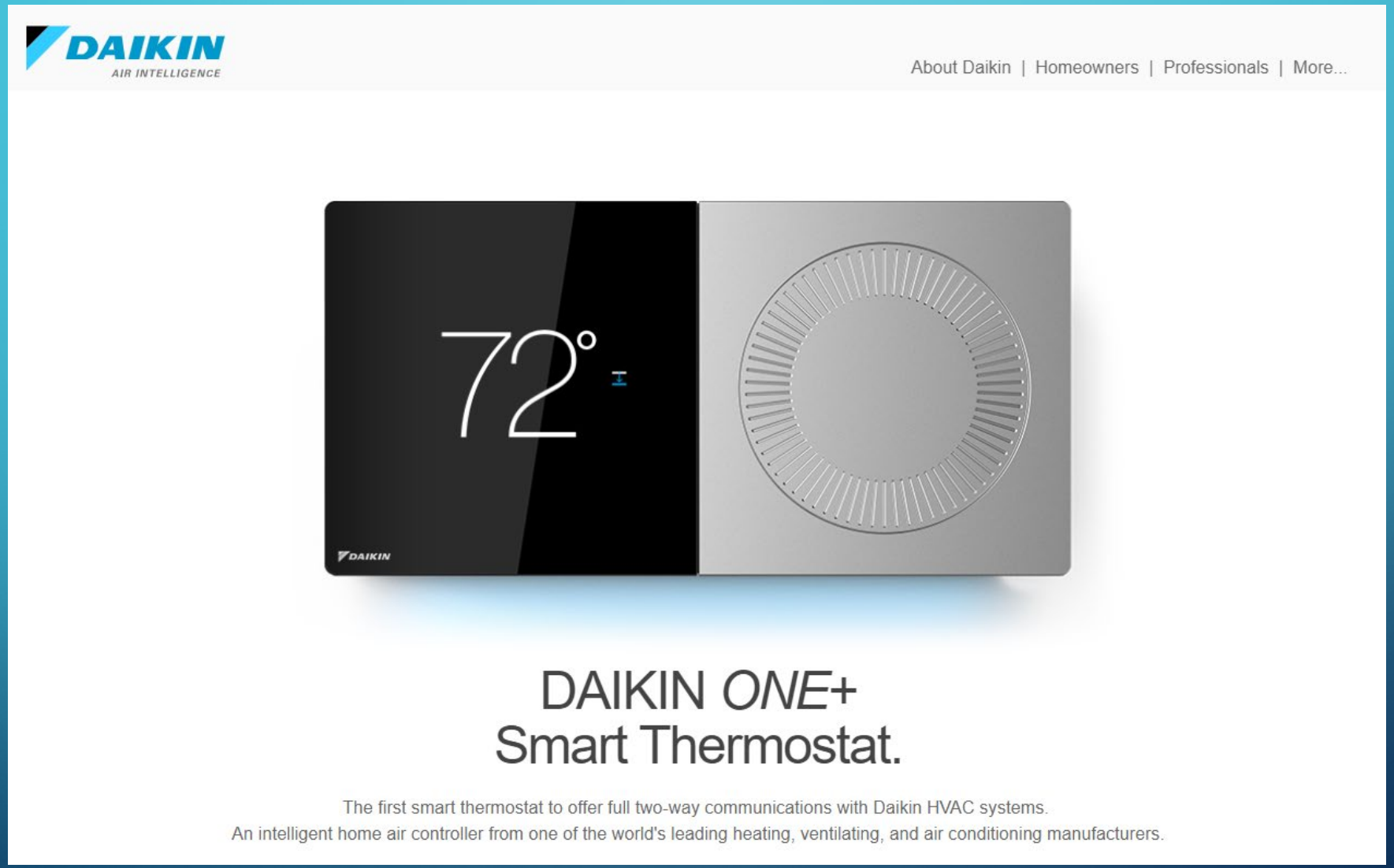

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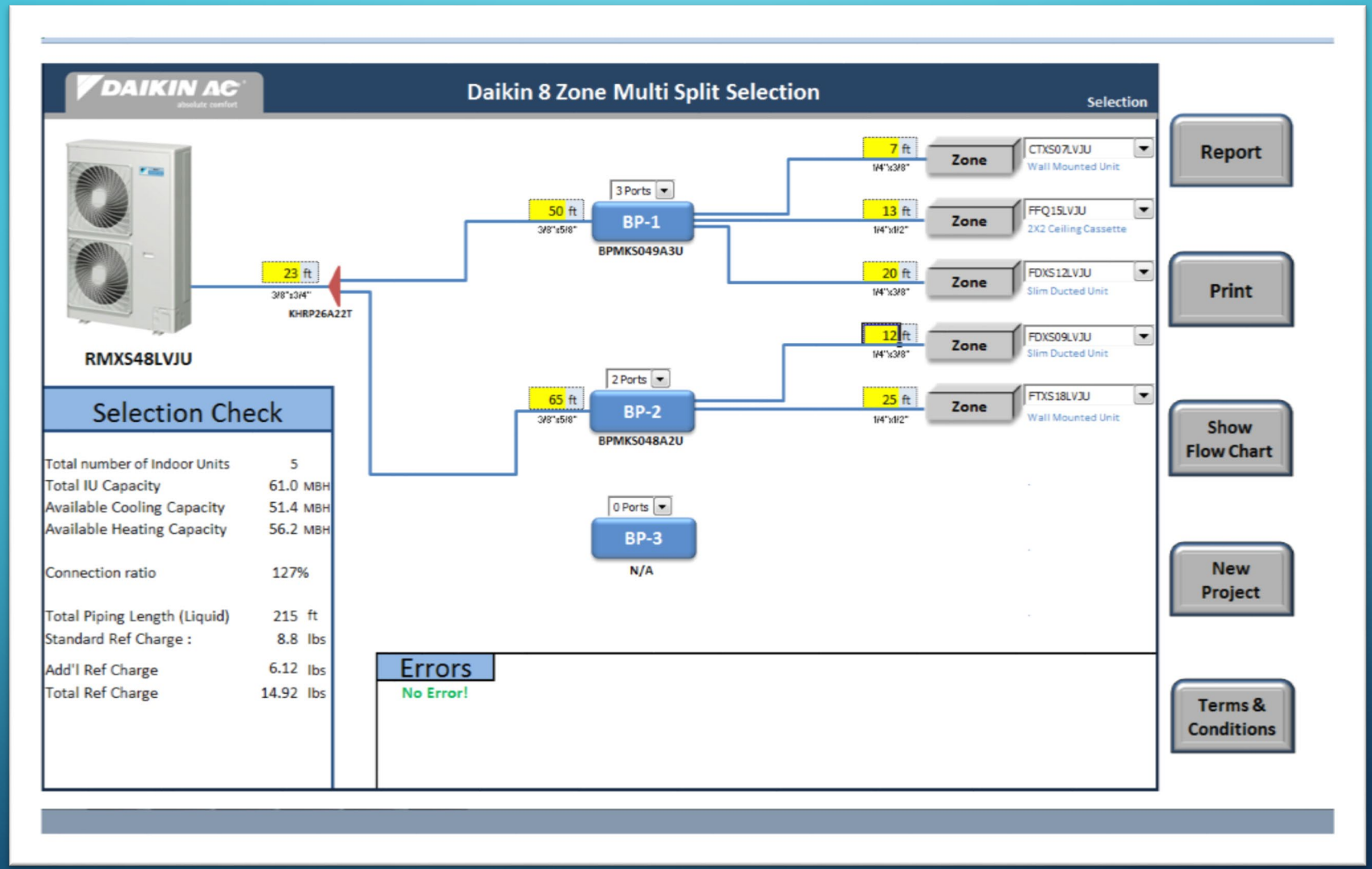
RMXS SYSTEM BUILDING TOOL



8-Zone Multi Plus System Example From Selection Tool

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TECHNICAL SUPPORT

1) TRAINED TECHNICIANS SHOULD BE THE FIRST LINE OF DEFENSE

2) VIRGINIA AIR DISTRIBUTORS TECHNICAL SUPPORT MANAGERS

CALL OUR TSM QUEUE – 1-888-823-4357

3) DAIKIN TECHNICAL SUPPORT – THIRD AND LAST RESORT

1-855-DAIKIN1 (1-855-324-5461)

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PRODUCT INSTALLATION
OUTDOOR UNITS

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COMMON INSTALLATION PITFALLS

- INCORRECT WIRING
- REFRIGERANT PIPING NOT INSULATED PROPERLY
- LEAKS DUE TO IMPROPER FLARES
- IMPROPER CONDENSATE DRAINAGE
- IMPROPER LINESET SELECTION/INSTALLATION
- NITROGEN NOT USED WHILE BRAZING
- OUTDOOR UNIT NOT SECURED/ELEVATED DEPENDING ON APPLICATION

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SIX STEP INSTALL PROCESS

- Select Indoor unit Location(s)
- Install Indoor Unit
- Install Outdoor unit
- Interconnect System / Power Wiring
- Leak Test and Evacuate
- Charge and Test Run

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Outdoor Unit Installation Drawings

		RX09/12* RK09/12*	RXN09/12* RKN09/12*	RX18*, RXN18* RK18*, RKN18*	RX24*, RXN24* RK24*, RKN24*
	Max. allowable piping length	65-5/8ft (20m)	49-1/4ft (15m)	98-1/2ft (30m)	
**	Min. allowable piping length	10ft (3m)			
	Max. allowable piping height	49-1/4ft (15m)	39-3/8ft (12m)	65-5/8ft (20m)	
*	Additional refrigerant required for refrigerant pipe exceeding 32.8ft (10m) in length.	0.21oz/ft (20g/m)			
	Gas pipe	O.D. 3/8 inch (9.5mm)		O.D. 1/2 inch (12.7mm)	O.D. 5/8 inch (15.9mm)
	Liquid pipe	O.D. 1/4 inch (6.4mm)			

*Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced performance.

**The suggested shortest pipe length is 10ft (3m), in order to avoid noise from the outdoor unit and vibration. (Mechanical noise and vibration may occur depending on how the unit is installed and the environment in which it is used.)

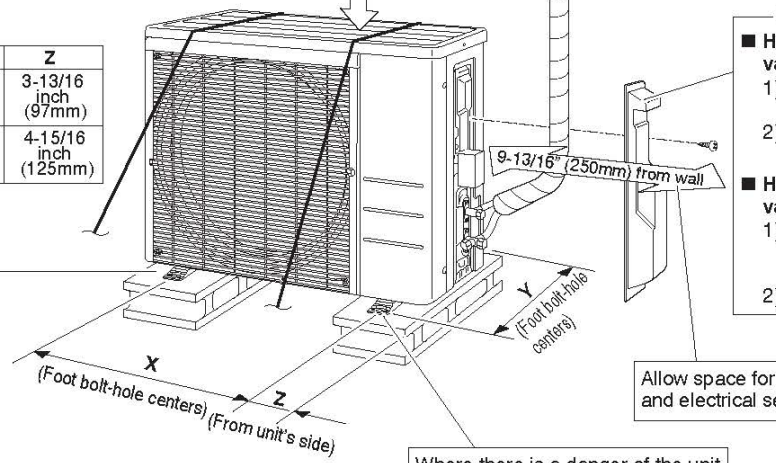
Wrap the insulation pipe with finishing tape from bottom to top.

CAUTION

Keep the piping length between 10ft (3m) and 65-5/8ft (20m) (for RX09/12, RK09/12), 10ft (3m) and 49-1/4ft (15m) (for RXN09/12, RKN09/12), 10ft (3m) and 98-1/2ft (30m) (for 18/24 class).

Allow 11-13/16" (300mm) of work space below the ceiling surface.

	X	Y	Z
09/12 class	18-1/2 inch (470mm)	12-1/8 inch (308mm)	3-13/16 inch (97mm)
18/24 class	23-5/8 inch (600mm)	13-5/8 inch (346mm)	4-15/16 inch (125mm)



Stop valve cover

- **How to remove the stop valve cover**
  1) Remove the screw on the stop valve cover.
  2) Slide the stop valve cover downward to remove it.
- **How to attach the stop valve cover**
  1) Insert the upper part of the stop valve cover into the outdoor unit.
  2) Tighten the screw.

In sites with poor drainage, use block bases for the outdoor unit.
Adjust foot height until the unit is level. Otherwise, water leakage or pooling of water may occur.

Allow space for piping and electrical servicing.

Where there is a danger of the unit falling, use foot bolts, or wires.

Appearance of outdoor units may differ from some models.

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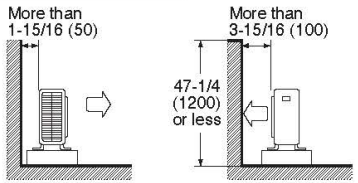
Installation Guidelines

- Where a wall or other obstacle is in the path of the outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- For any of the below installation patterns, the wall height on the outlet side should be 47-1/4 inch (1200mm) or less.

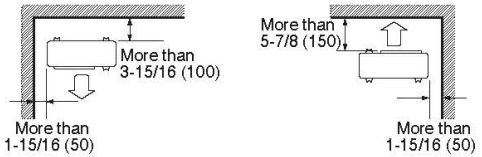
09/12 class

Wall facing one side



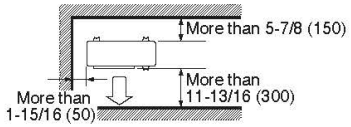
Side view

Walls facing two sides



Top view

Walls facing three sides

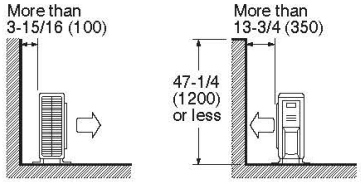


Top view

unit: inch (mm)

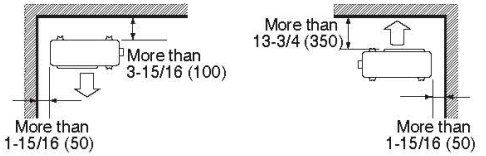
18/24 class

Wall facing one side



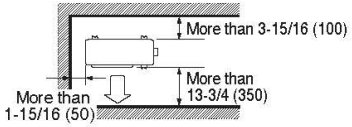
Side view

Walls facing two sides



Top view

Walls facing three sides



Top view

unit: inch (mm)

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DON'T THROW AWAY THE ADAPTERS

- Located in packaging in condenser / outdoor unit box.

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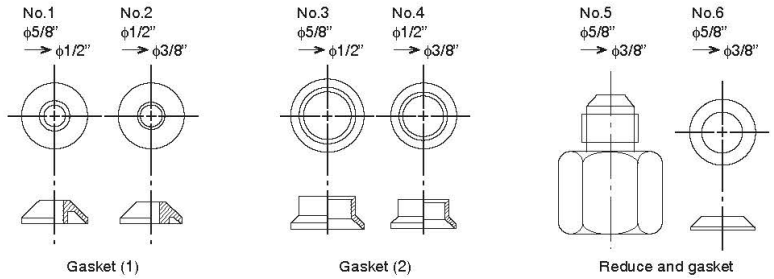
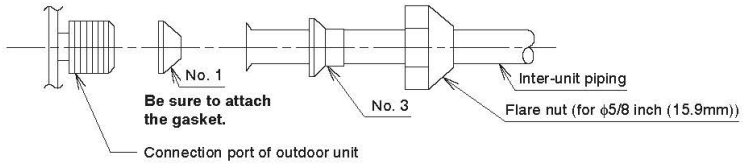
How to Use Reducers

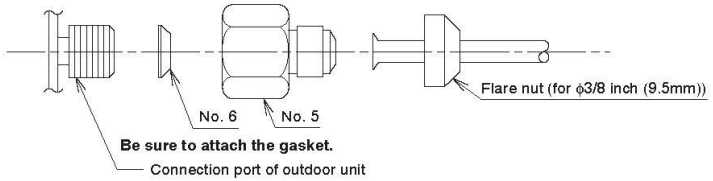


• Use the reducers supplied with the unit as described below.

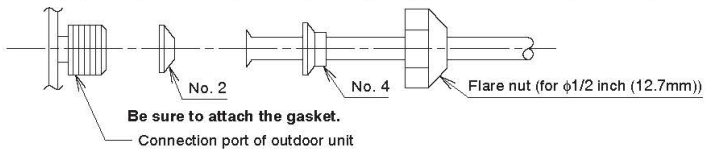
(1) Connecting a pipe of ϕ1/2 inch (12.7mm) to a gas pipe connection port for ϕ5/8 inch (15.9mm) :



(2) Connecting a pipe of ϕ3/8 inch (9.5mm) to a gas pipe connection port for ϕ5/8 inch (15.9mm) :



(3) Connecting a pipe of ϕ3/8 inch (9.5mm) to a gas pipe connection port for ϕ1/2 inch (12.7mm) :



- When using the reducer packing shown above, be careful not to overtighten the nut, or the smaller pipe may become damaged. (Apply about 2/3 to 3/3 the normal torque.)
- Apply a coat of refrigeration oil to the threaded connection port of the outdoor unit where the flare nut comes in.
- Use an appropriate wrench to avoid damaging the connection thread by overtightening the flare nut.

Piping size	Flare nut tightening torque
O.D. ϕ3/8 inch (9.5mm)	24-1/8 – 29-1/2ft • lbf (32.7-39.9N • m)
O.D. ϕ1/2 inch (12.7mm)	36-1/2 – 44-1/2ft • lbf (49.5-60.3N • m)
O.D. ϕ5/8 inch (15.9mm)	45-5/8 – 55-5/8ft • lbf (61.8-75.4N • m)

Refer to installation instructions

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ALL FLARE CONNECTIONS

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MUST HAVE TOOLS FOR START UP

AD87 Brass Charge Adapter Fitting

Deburring Tool

Refrigerant Scales

45 Degree Flaring Tool

Torque Wrench Set

Flare Size Gauge

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DAIKIN DUCTLESS TOOL KIT DACA-99STK-1 (27 PCS)

- 1 - TLBAG2D Daikin Bag
- 1 - BFT850FN w/case
- 1 - TLTWSAE (Complete w/case)
- 6 - Metric Crows Feet
- 1 - MT2HP (Heat Pump Manifold
- 1 - BTC300 Tubing Cutter
- 2 - AD87 straight adapter
- 2 - AD87S 45 degree adapter
- 1 - BTLDB3
- 1 – TLSWH Alan Wrench Set
- 1 – TLSWHM Alan Wrench Set
- 1 - AVC410 Caps
- 1 - TLVCS410A
- 1 - DACA-FSG-1 Flare Gauge

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WHICH FLARE NUT TO USE? UNIT OR LINESET?

Use only Daikin supplied flare nuts (shown on left side above)

It is <u>imperative</u> to remove flare nuts from lineset and use flare nuts on units.

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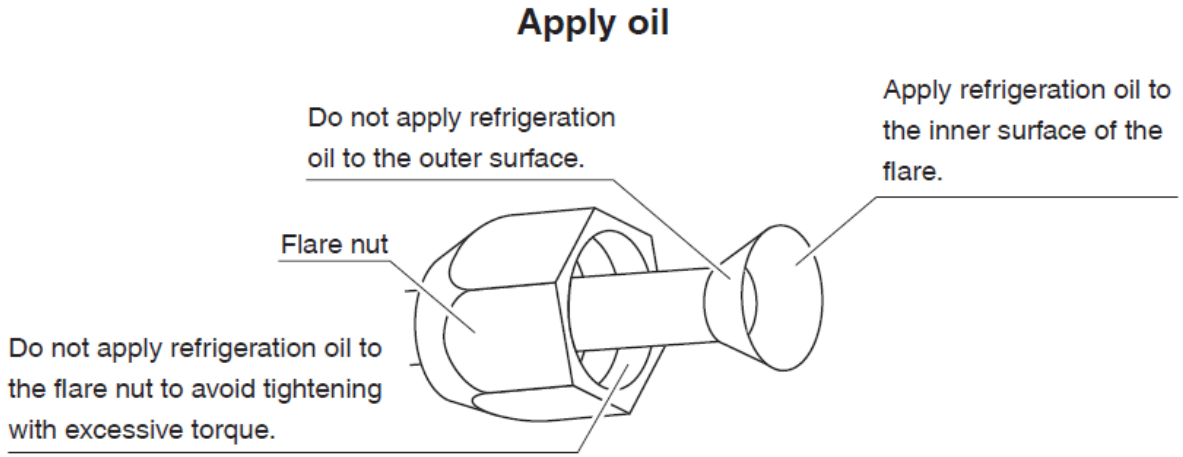
TORQUE SETTINGS & OIL APPLICATION

Flare nut tightening torque			
Gas side			Liquid side
3/8 inch (9.5mm)	1/2 inch(12.7mm)	5/8 inch(15.9mm)	1/4 inch (6.4mm)
24-1/8–29-1/2ft • lbf (32.7-39.9N • m)	36-1/2–44-1/2ft • lbf (49.5-60.3N • m)	45-5/8–55-5/8ft • lbf (61.8-75.4N • m)	10-1/2–12-3/4ft • lbf (14.2-17.2 N • m)

Width across flats	11/16 inch(17mm)	3/4 inch(19mm)	7/8 inch(22mm)	1-1/16 inch(27mm)
Valve cap tightening torque	10-1/2–12-5/8ft • lbf (14.2-17.2N • m)	12-5/8–15-3/8ft • lbf (17.1-20.9N • m)	16–20-1/4ft • lbf (21.6-27.4N • m)	35-3/8–44-1/8ft • lbf (48-59.8N • m)

Service port cap tightening torque
8–10-7/8ft • lbf (10.8-14.7N • m)



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INSULATE LIQUID AND SUCTION LINE

GOOD

BAD

If you are using leftover, uninsulated copper tubing, make sure to insulate bare line upon installation to ductless unit.

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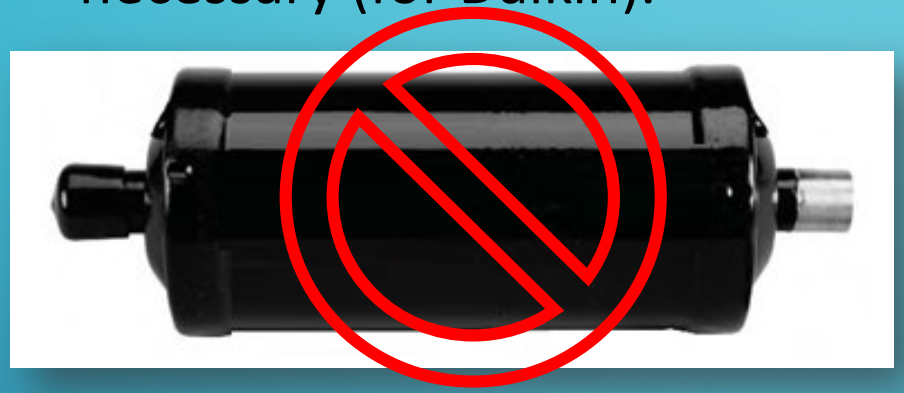
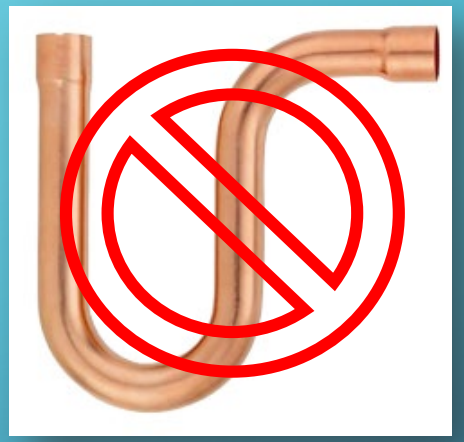
LINE COMPONENTS

Only install driers, oil traps, shut off valves or any other line components in your piping work if instructed to do so in the IOM documents – if no instruction, it's because it is NOT necessary (for Daikin).





The only acceptable piping is ACR (copper) type tubing which is dehydrated and sealed at both ends.

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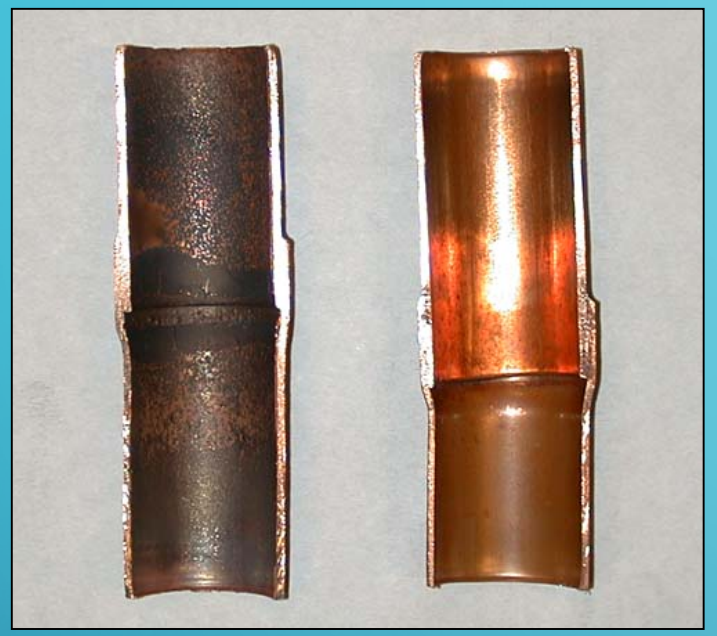
BRAZING



Dry Nitrogen *MUST* be used during all brazing (Pressure regulated to 1.5 to 3 PSIG) to prevent oxidation formation

- Test = 650
- Purge = 25-35 CFH
- Braze = 3-6 CFH
- Off = 0 CFH ☺

VN-650

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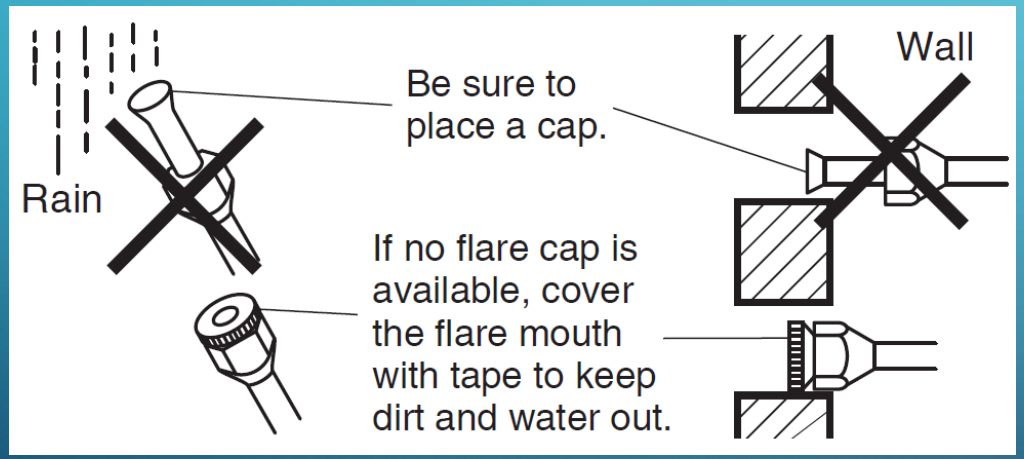
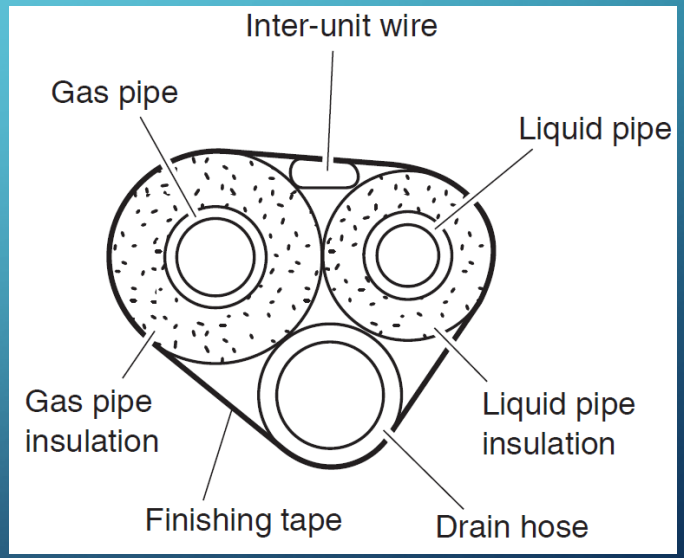
PIPE HANDLING & INSTALLATION

Cautions on pipe handling

- Protect the open end of the pipe against dust and moisture.
- All pipe bends should be as gentle as possible. Use a pipe bender for bending.
- ACR Copper only.
- Use separate thermal insulation pipes for gas and liquid refrigerant pipes.





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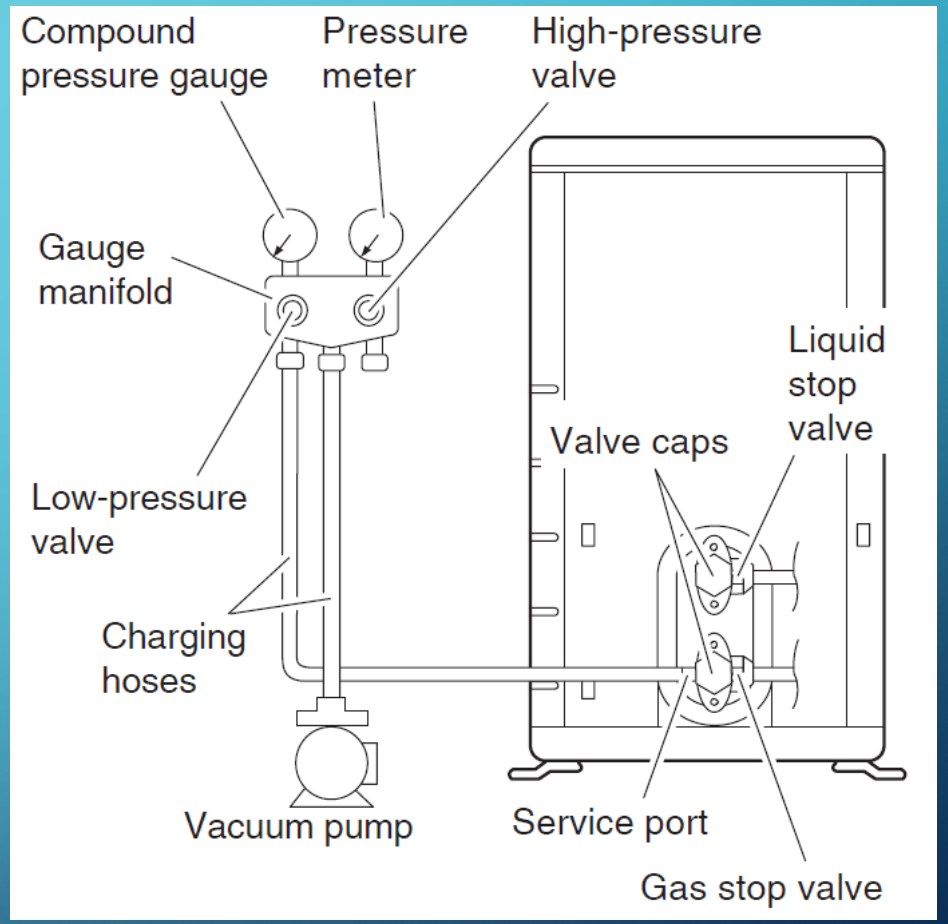
PRESSURE TEST & EVACUATING SYSTEM

- When piping work is complete, it is necessary to perform a pressure test and evacuate system with a vacuum pump.
- If using additional refrigerant, perform air purging of the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.
- Use a hexagonal wrench (3/16 inch (4mm)) to operate the stop valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench to the specified tightening torque.



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PRESSURE TEST & EVACUATING SYSTEM

1. Pressurize the liquid pipe and gas pipe from the service ports of each stop valve to 550psi (3.8MPa) (do not pressurize more than 550psi (3.8MPa)) for 1 hour minimum, 24 hours recommended. If there is a pressure drop, check for leaks, make repairs and perform the pressure test again.
2. Connect projection side of charging hose (which comes from gauge manifold) to gas stop valve's service port.
3. Fully open gauge manifold's low-pressure valve (Lo) and completely close its high-pressure valve (Hi). (High-pressure valve subsequently requires no operation.)
4. Triple evacuate system using vacuum pump to below 500 microns for 1 hour minimum.
5. Close gauge manifold's low-pressure valve (Lo) and stop vacuum pump. (Keep this state for a few minutes to make sure that the compound pressure gauge pointer does not swing back.)*1
6. Remove covers from liquid stop valve and gas stop valve.
7. Turn the liquid stop valve's rod 90° counter-clockwise with a hexagonal wrench to open the valve. Close it after 5 seconds, and check for gas leakage. Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods. After the check is complete, wipe all soapy water off.
8. Disconnect charging hose from gas stop valve's service port, then fully open liquid and gas stop valves. (Do not attempt to turn valve rod beyond its stop.)
9. Tighten valve caps and service port caps for the liquid and gas stop valves with a torque wrench to the specified torques.

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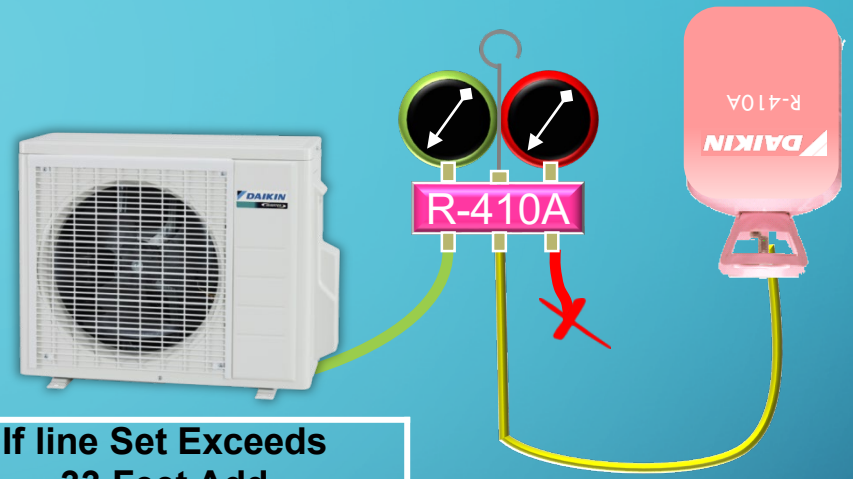
ADDITIONAL REFRIGERANT CHARGE

Weigh in refrigerant

- **Pre-charged up to 33ft**
- **Add 0.22oz per foot**



RXN/RKN_KE	Factory Charge	If line Set Exceeds 33 Feet Add
9,000 Btu	1lb. 12 oz	.22 oz per foot
12,000 Btu	2lb. 3.2 oz	.22 oz per foot
15,000 Btu	3lb. 12 oz	.22 oz per foot
18,000 Btu	3lb. 12 oz	.22 oz per foot
24,000 BTU	3lb. 12 oz	.22 oz per foot

Outdoor Unit Model No.		If line Set Exceeds 98 Feet Add
2MXS18GVJU	5lb. 12 oz	.22 oz per foot

Outdoor Unit Model No.	Factory Charge	If line Set Exceeds 131.5 Feet Add
3MXS24 & 4MXS32GVJU	6lb. 13 oz	.22 oz per foot

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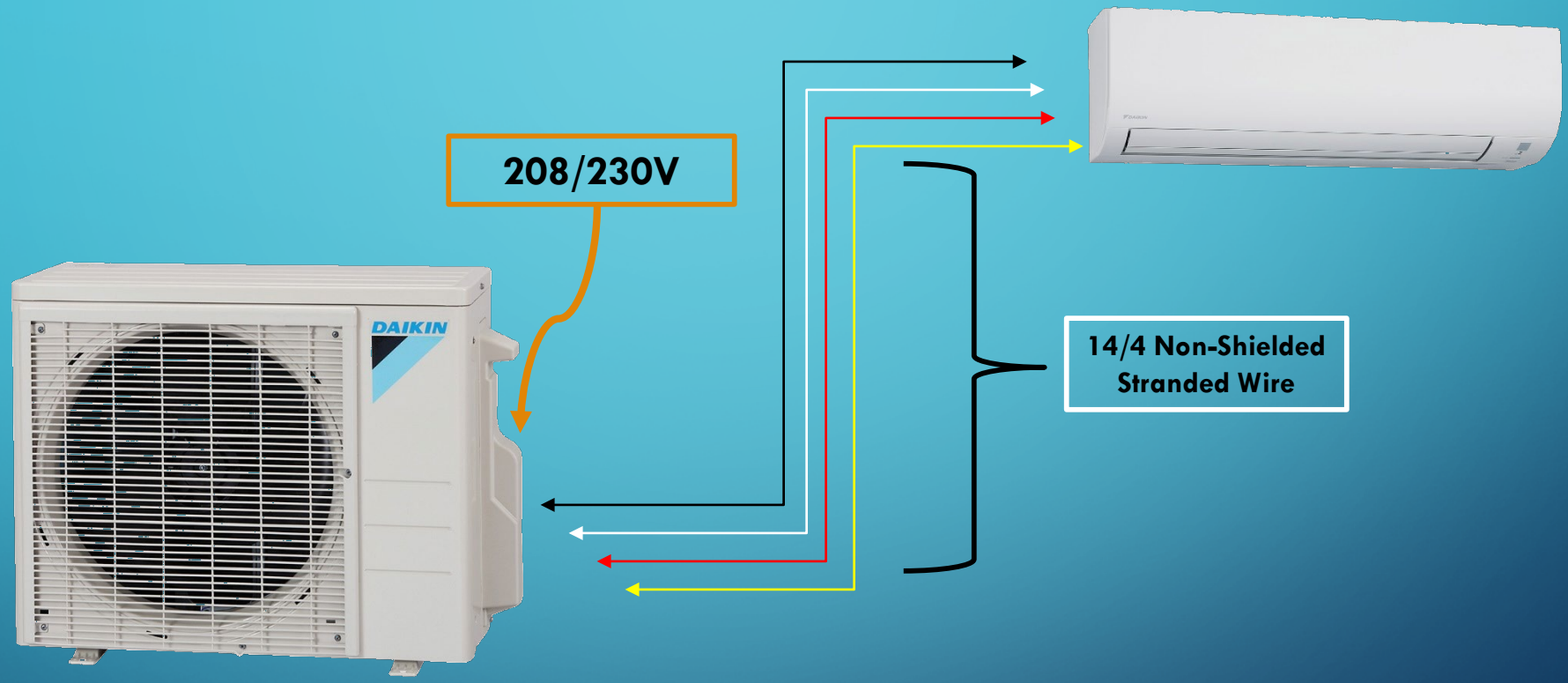
Ductless Wiring: Outdoor Powers Indoor



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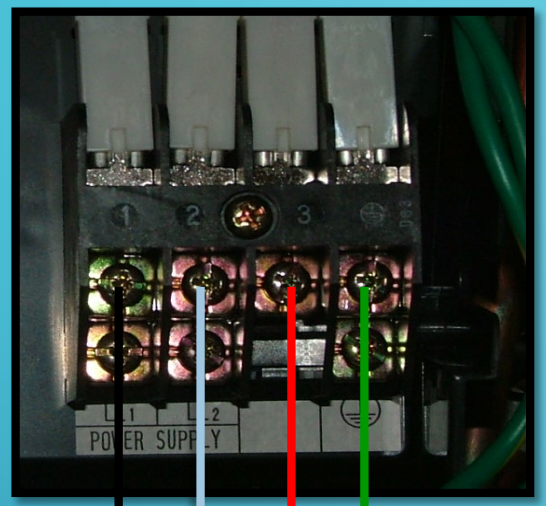
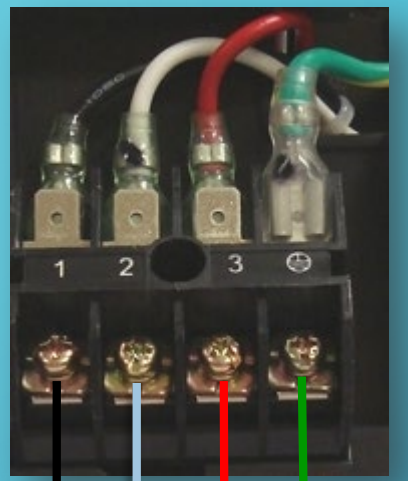
DUCTLESS WIRING: OUTDOOR POWERS INDOOR



14/4
Non-Shielded
Stranded
Wire



1
2
3
G

Illustration shows Single Split connections, other applications may differ.

208/230V

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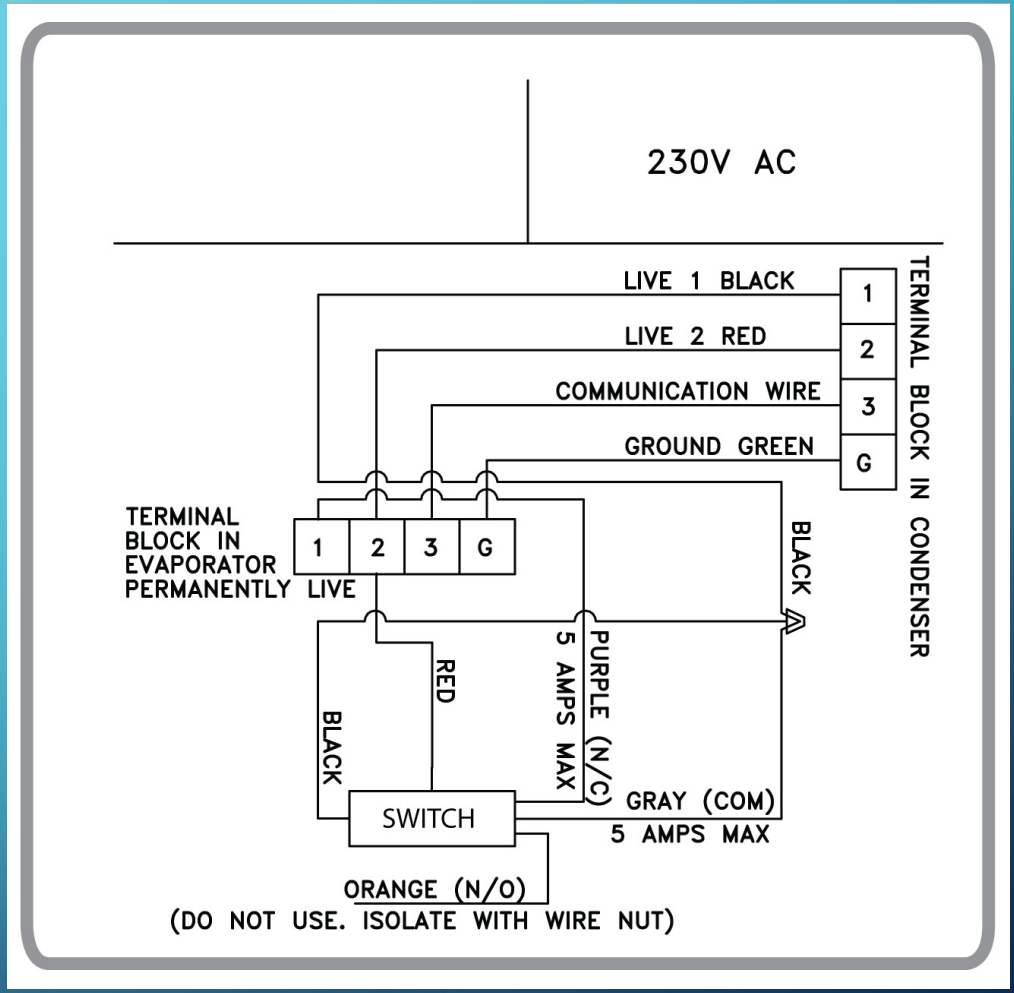
SS610E CONDENSATE SENSOR WIRING

- For installation, Daikin AC recommends mounting the sensor on the right hand corner of the heat exchanger as facing the front of the fan coil and where the electrical box will be to the right of the fan coil.
- Once mounted at the appropriate height, Daikin AC recommends wiring the sensor assembly for mini split wall mounted units (FTXN, FTXS, FTXG, & CTXS models) as shown to the right
- Refer to the float switch installation manual for all other installation instructions



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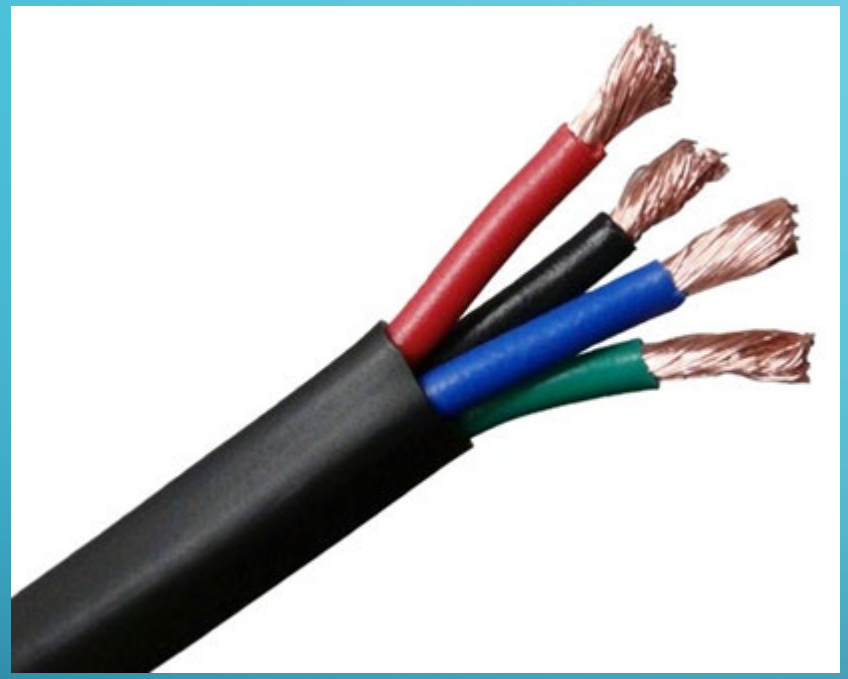
Shielded vs Non-Shielded Wire



14/4 Non-Shielded Wire

14/4 Shielded Wire

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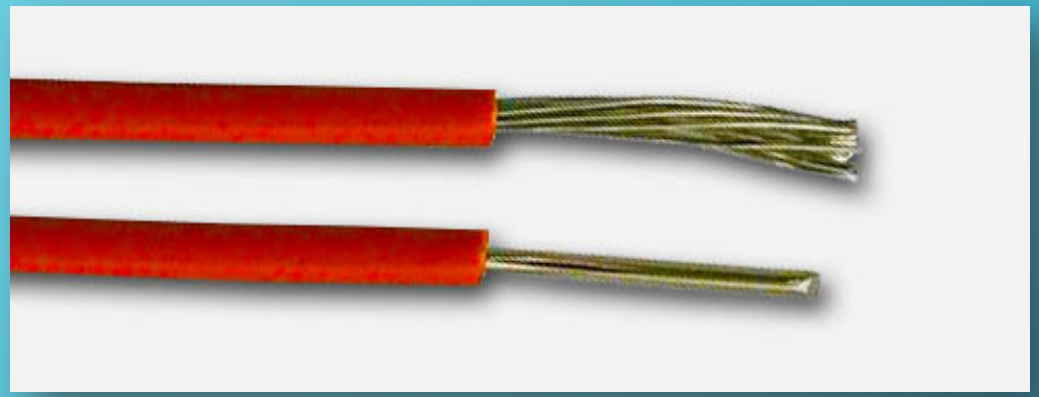
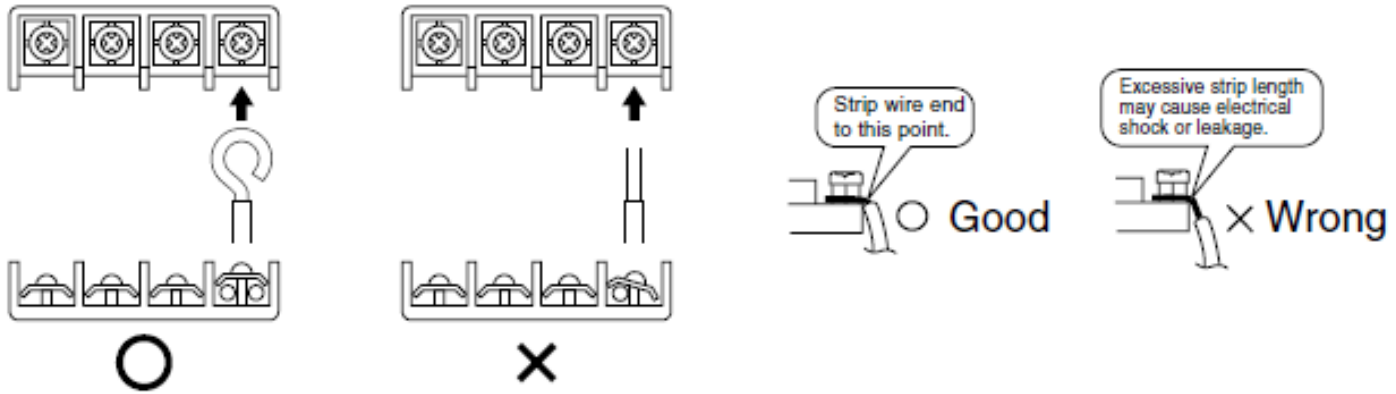
STRANDED VS SOLID CORE

- Solid core allowed on incoming 230V power only.
- 14/4 will cover all applications no matter the length.



• When connecting the connection wires to the terminal board using a single core wire, be sure to perform curling. Problems with the work may cause heat and fires.



Stripping wire at terminal block

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OPTIONAL LOW AMBIENT WIND BAFFLE

- **Allows system to cool down to <u>ZERO</u> degrees outdoor ambient. *On select systems**

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INSTALL A SURGE PROTECTOR (RECOMMENDED) ICM-493

- **Protects against over and under voltage, rapid short cycling caused by transients, and high-power surges**
- **Ideal for mini-splits or other condensing units**
- **Easy to view, backlit digital display**
- **Bank of five L-L surge arresters**
- **Built-in 40A contactor**
- **Waterproof, NEMA–rated 3R enclosure for outdoor use**
- **Easy installation and setup**

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PRODUCT INSTALLATION
INDOOR WALL MOUNT UNITS

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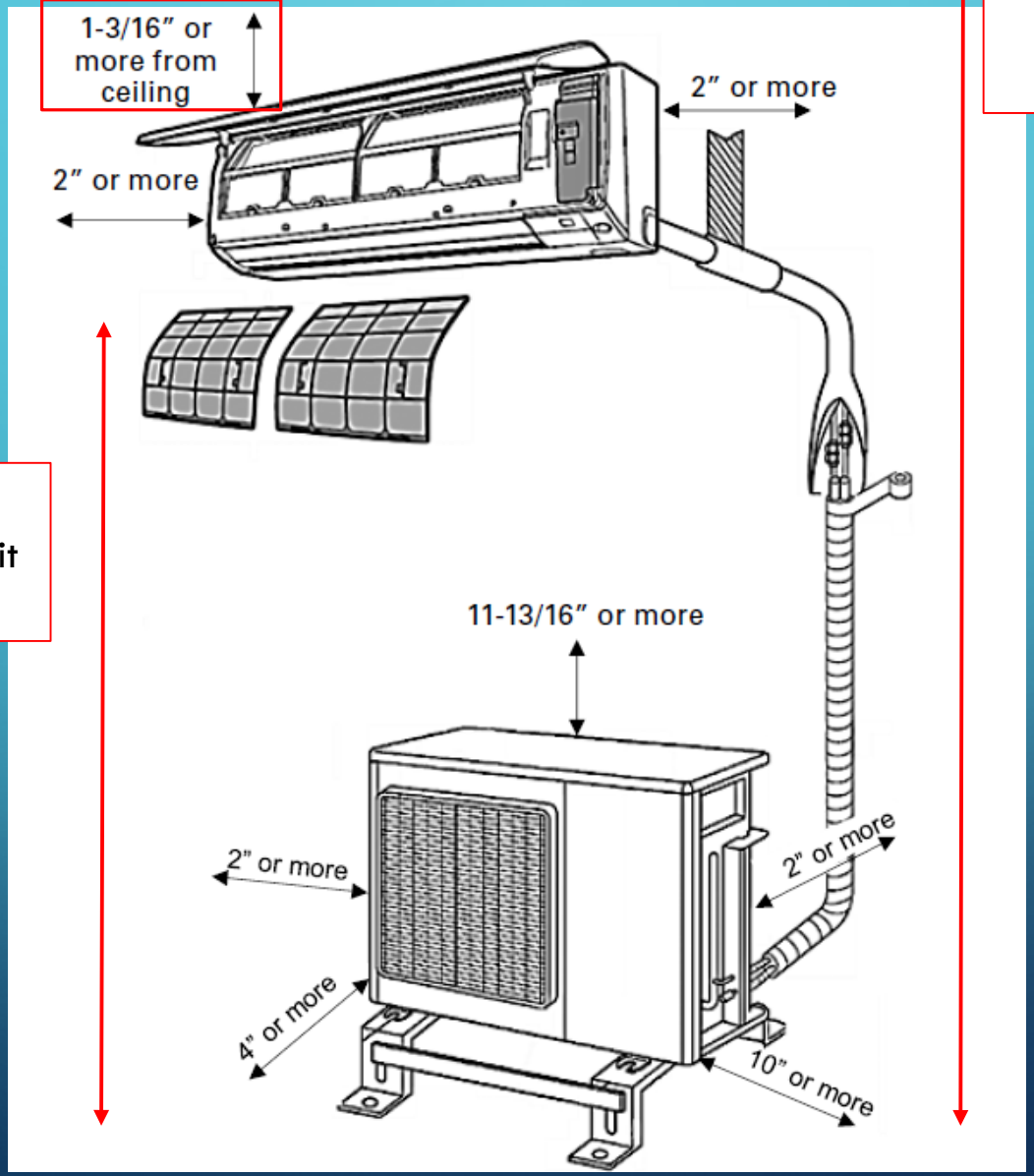
WALL MOUNT SYSTEM CLEARANCES

Maximum
12ft Indoor Unit Height



Minimum
5ft Indoor Unit Height

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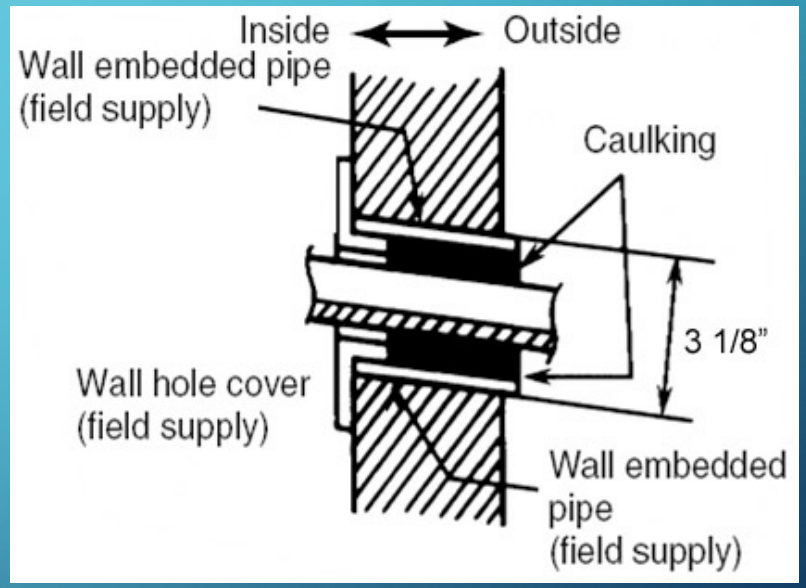
CONDENSATE GRAVITY DRAIN – FILL IN THE WALL

When installing refrigerant pipe and drain pipe through exterior wall:

1. Bore a 3 1/8” diameter hole through the wall sloping toward the exterior.
2. Insert wall pipe (feed tube) into the hole.
3. Insert wall hole cover into the wall pipe.
4. After completing refrigerant piping, wiring and drain piping, fill all gaps and spaces with caulk or foam to prevent water leaks, outside air infiltration, and sheetrock dust.



Sealing hole prevents hot or cold air from interfering with temperature sensing thermistors

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CONDENSATE REMOVAL: LOTS OF OPTIONS

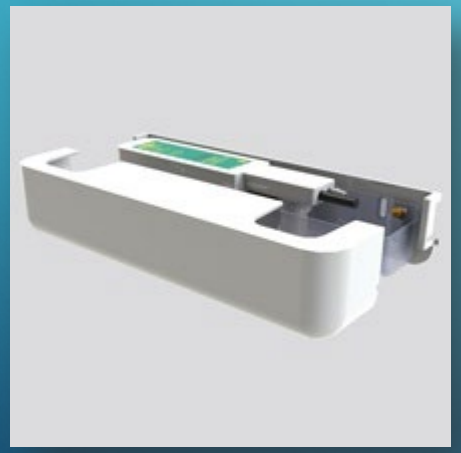
Sauermann Si-30

ASPEN Mini White

Diversitech Clearvue Mini

Blue Diamond Pumps

ASPEN Maxi Orange



Refco Gobi Pump

ASPEN Mini Aqua

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CONDENSATE REMOVAL OPTIONS: ASPEN MINI WHITE

Advantages:
-Easy access for service
-Externally mounted
-33ft Lift

Disadvantages:
-Less aesthetic appeal

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MIGHTY BRACKET - MINI SPLIT INSTALLATION SUPPORT TOOL

- Attach Bracket Mounting Hooks to Mounting Plate Tabs
- Place Bracket Foot Supports against wall
- Level Bracket Arms with Support Pins
- Set Air Handler Section on Support Bracket
- Connect Lines & Electrical Hook-up
- Lift and Secure Air Handler to top Mounting Plate Tabs
- Remove Temporary Installation Bracket

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PRODUCT INSTALLATION
INDOOR FLOOR MOUNT UNITS

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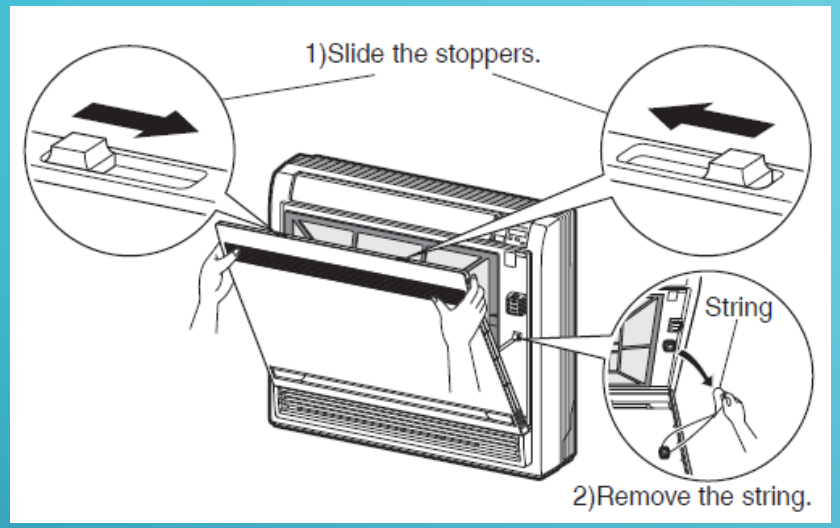
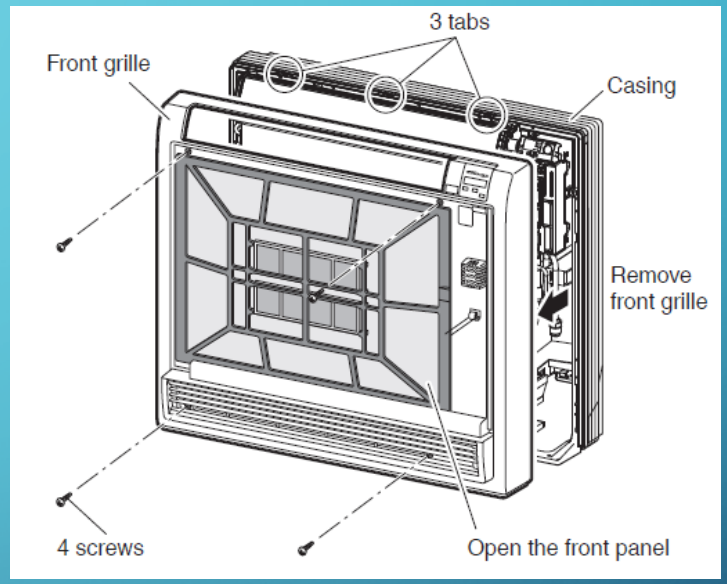
FLOOR STANDING INSTALL

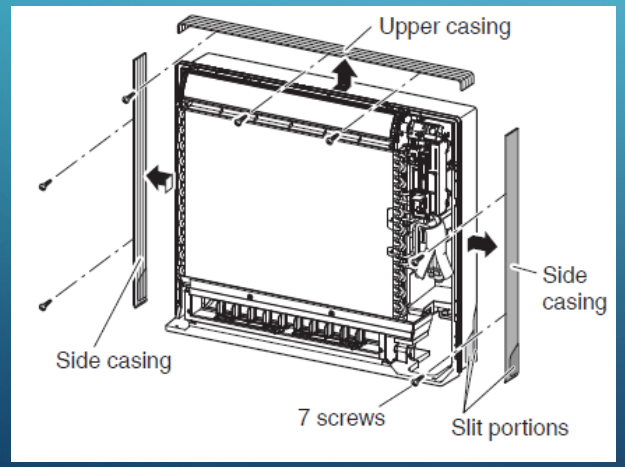
- **Step 1: Remove Front Panel**



- **Step 2: Remove Front Grille**



- **Step 3: Remove Upper & Side Casings**



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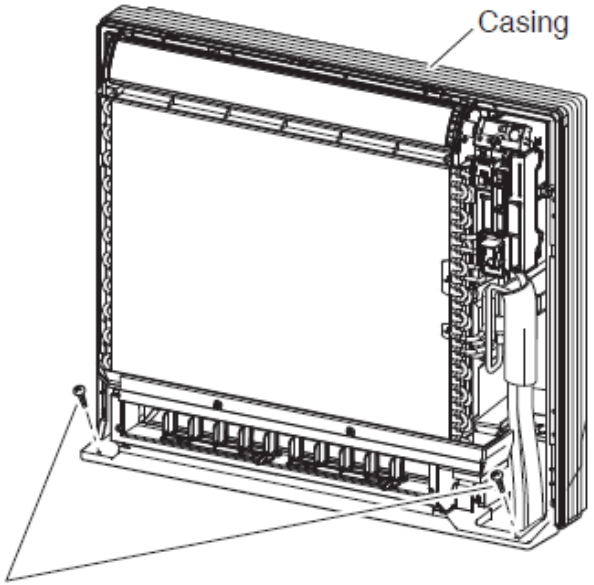
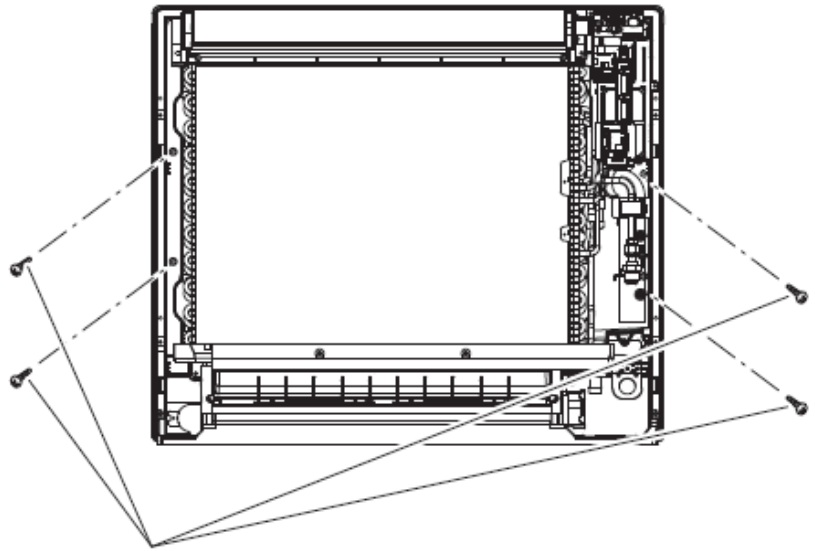
FVXS FLOOR INSTALLATION

- Secure the indoor unit using 6 screws. (2 screws for floor and 4 screws for rear wall)



2 screws
3/16" × 1" (M4 × 25mm) (field supply)



4 screws
3/16" × 1" (M4 × 25mm) (field supply)

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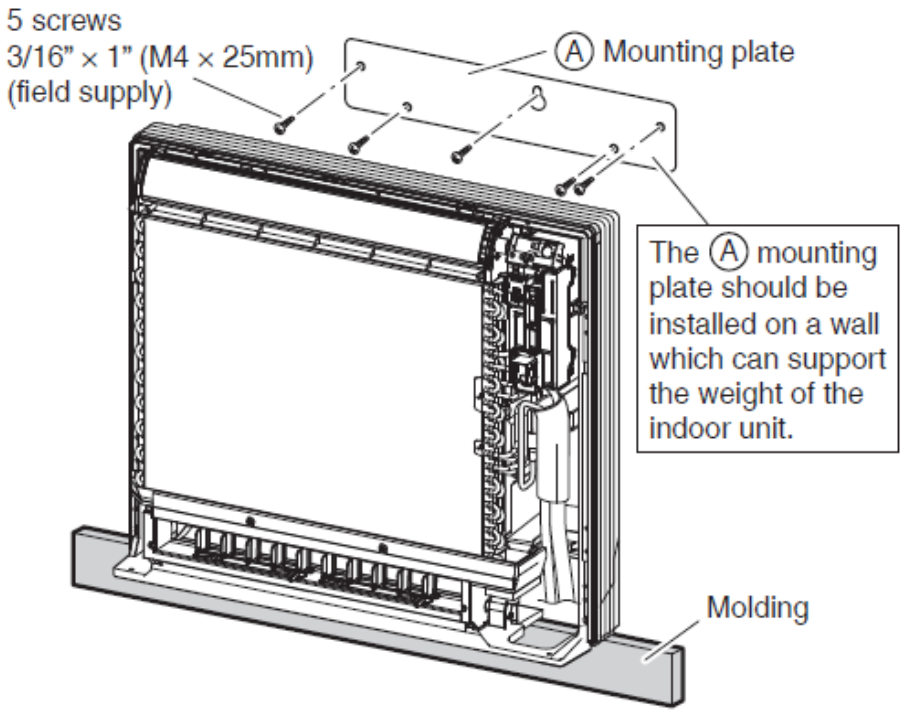
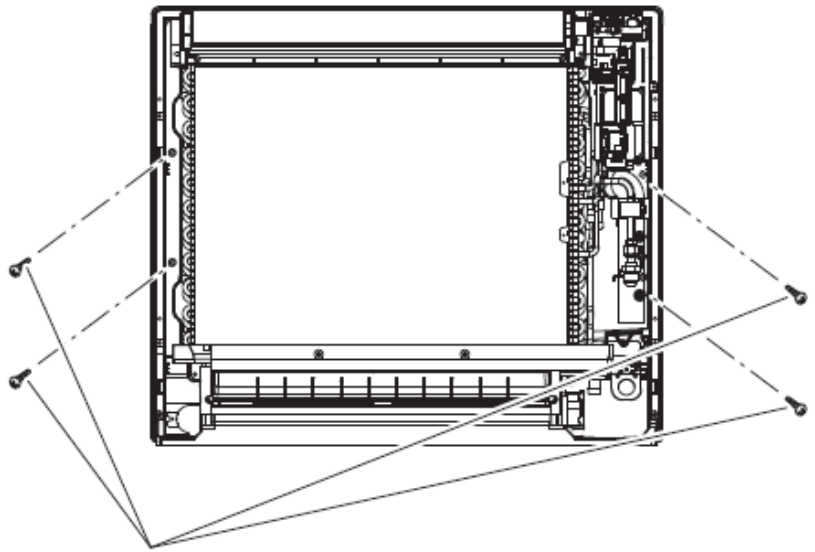
FVXS WALL INSTALLATION

- Secure the Ⓐ mounting plate using 5 screws.
- Secure the indoor unit using 4 screws for rear wall.





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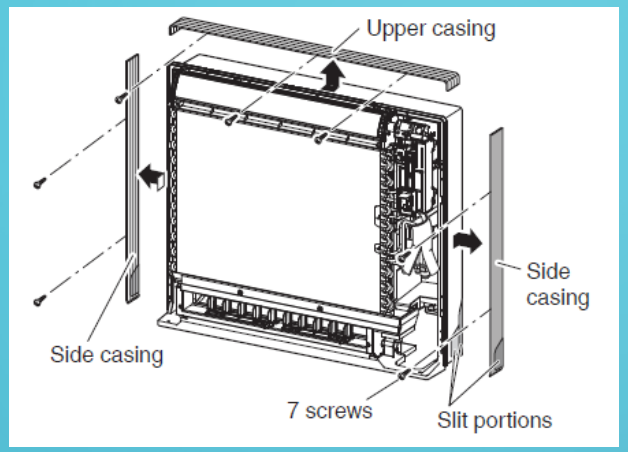
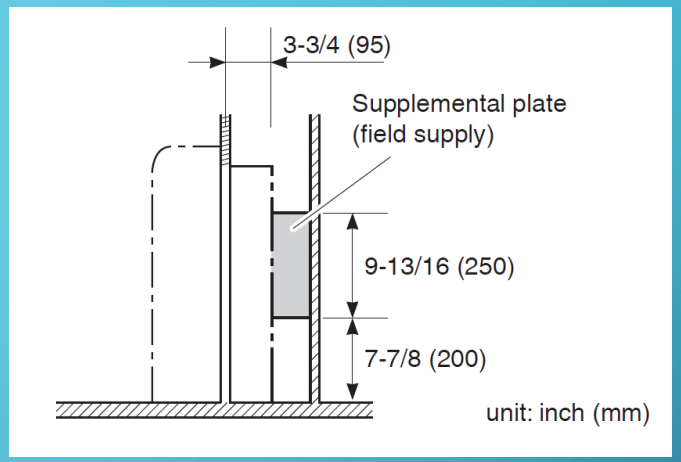
FVXS PARTIALLY RECESSED

- Remove 3 side casing. Recess into wall.





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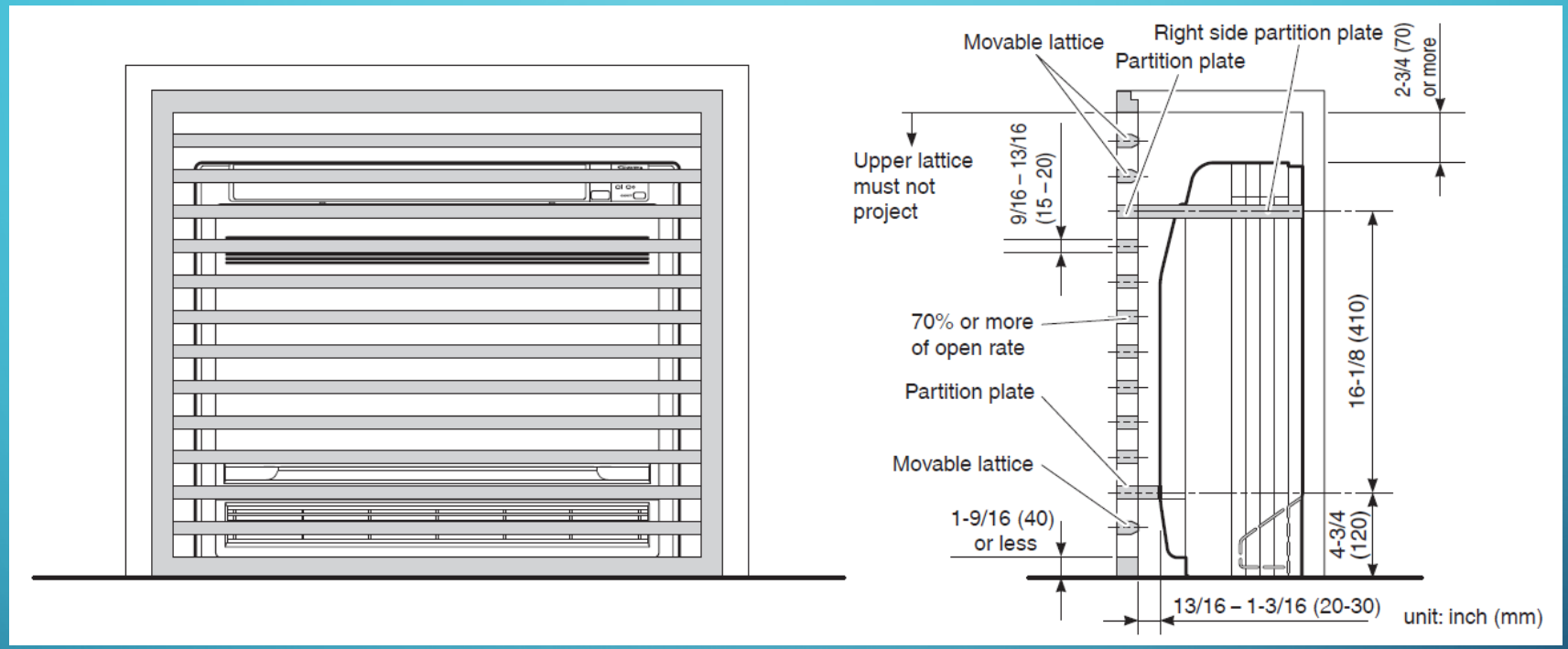
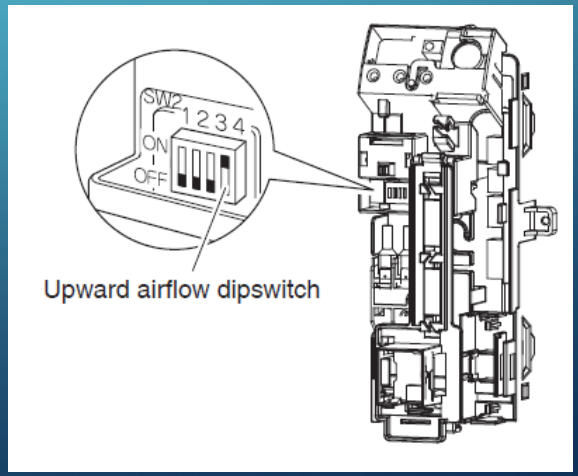
FVXS CONCEALED/FULLY RECESSED



- When fully recessed make sure to turn dipswitch SW2-4 to ON position. This will limit upward airflow and force side discharge.



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FVXS AIRFLOW

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PRODUCT INSTALLATION
INDOOR CEILING CASSETTE UNITS

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VISTA

CEILING CASSETTE

VISTA 1:1 CEILING CASSETTE

1:1 and Multi-Port (MXS/MXL)

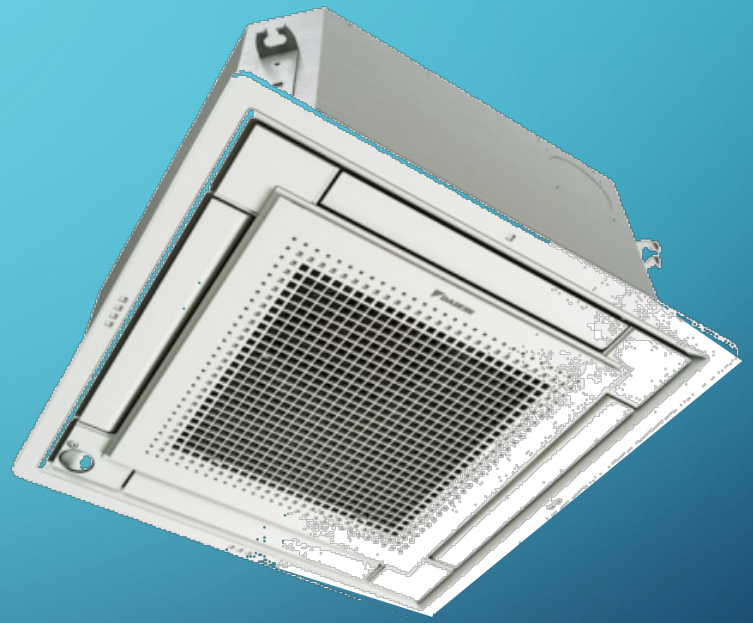
Silver Finish Décor Panel

BYFQ60C2W1S

FFQ09Q2VJU

FFQ12Q2VJU

FFQ15Q2VJU



White Finish Décor Panel

BYFQ60C2W1W

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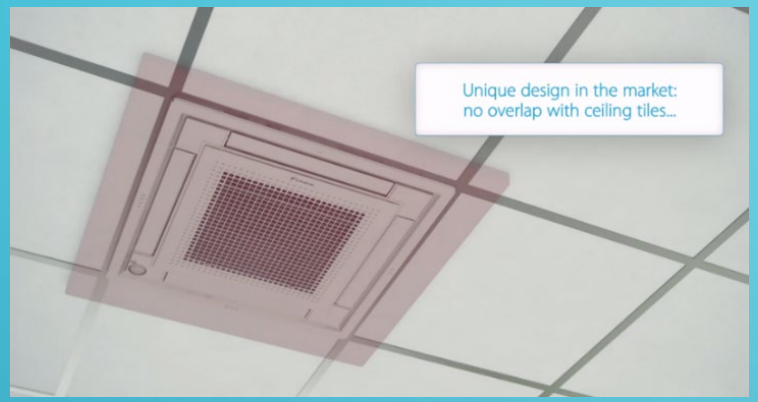
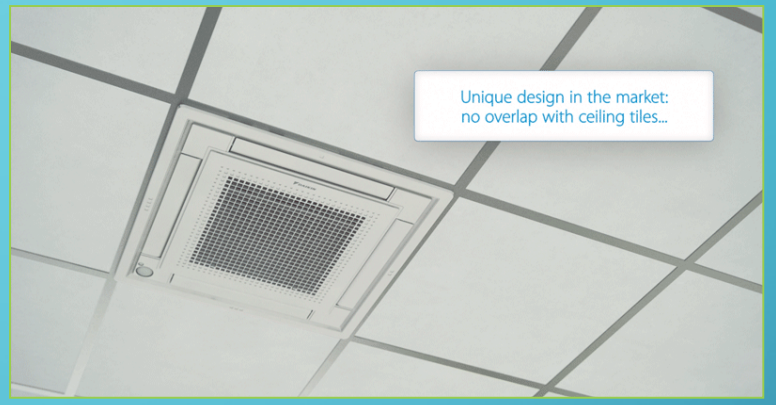
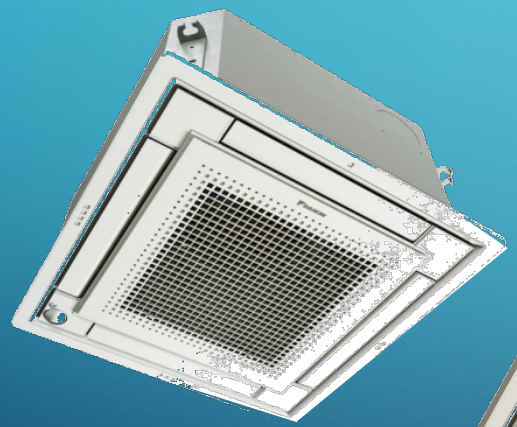
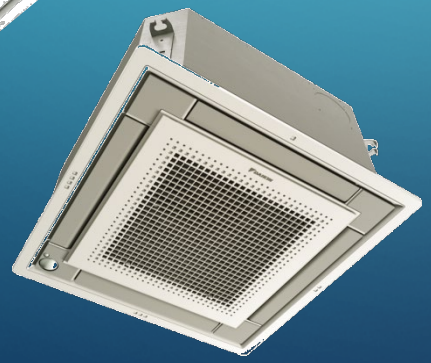
VISTA CEILING CASSETTE 1ST OF ITS KIND









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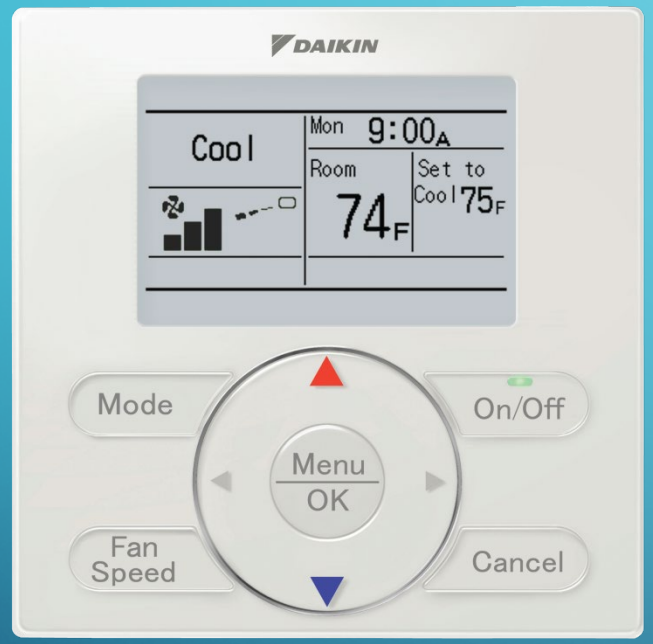
VISTA CEILING CASSETTE FEATURES

Control Options



BRC1E73

BRC082A42W Bright White
BRC082A42S Silver

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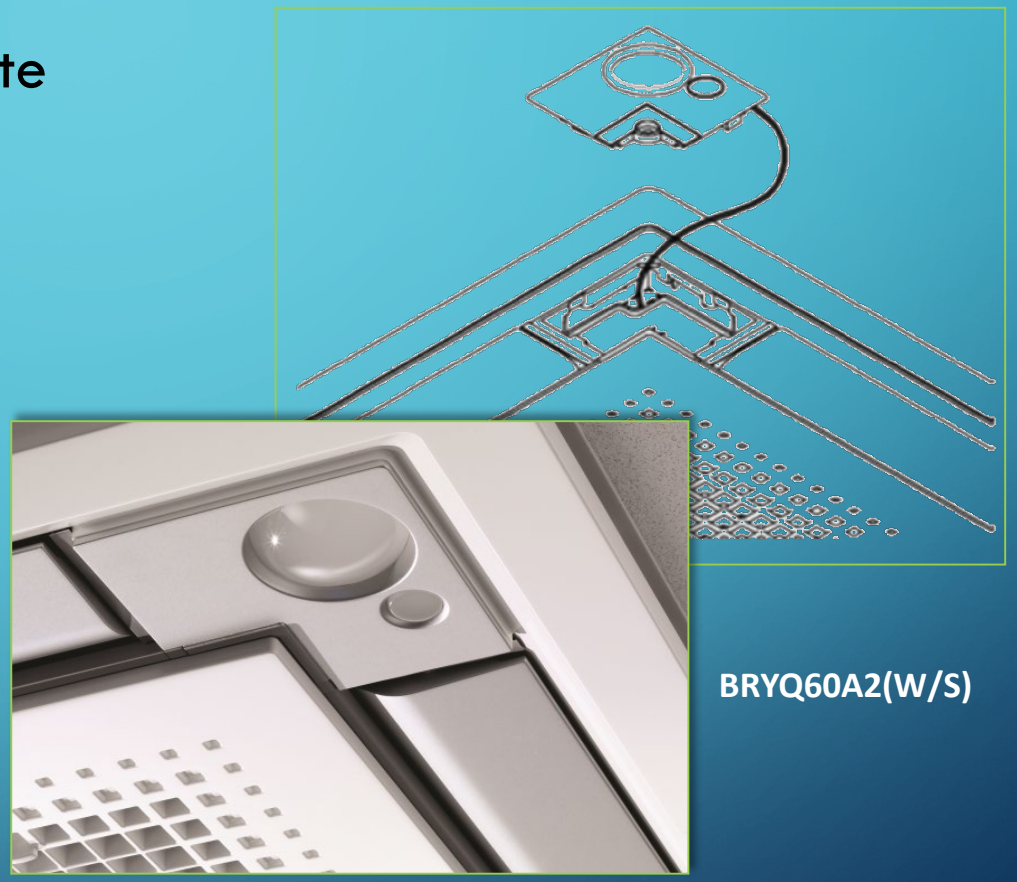
VISTA CEILING CASSETTE FEATURES

- BRYQ60A2W Sensor kit White
- BRYQ60A2S Sensor kit Silver

Sensor kit		Decor Panel
BRYQ60A2W	use	BYFQ60C2W1W
BRYQ60A2S	use	BYFQ60C2W1S



BRYQ60A2(W/S)

Note: When the BRYQ60A2(W/S) is used a wired controller must be used.

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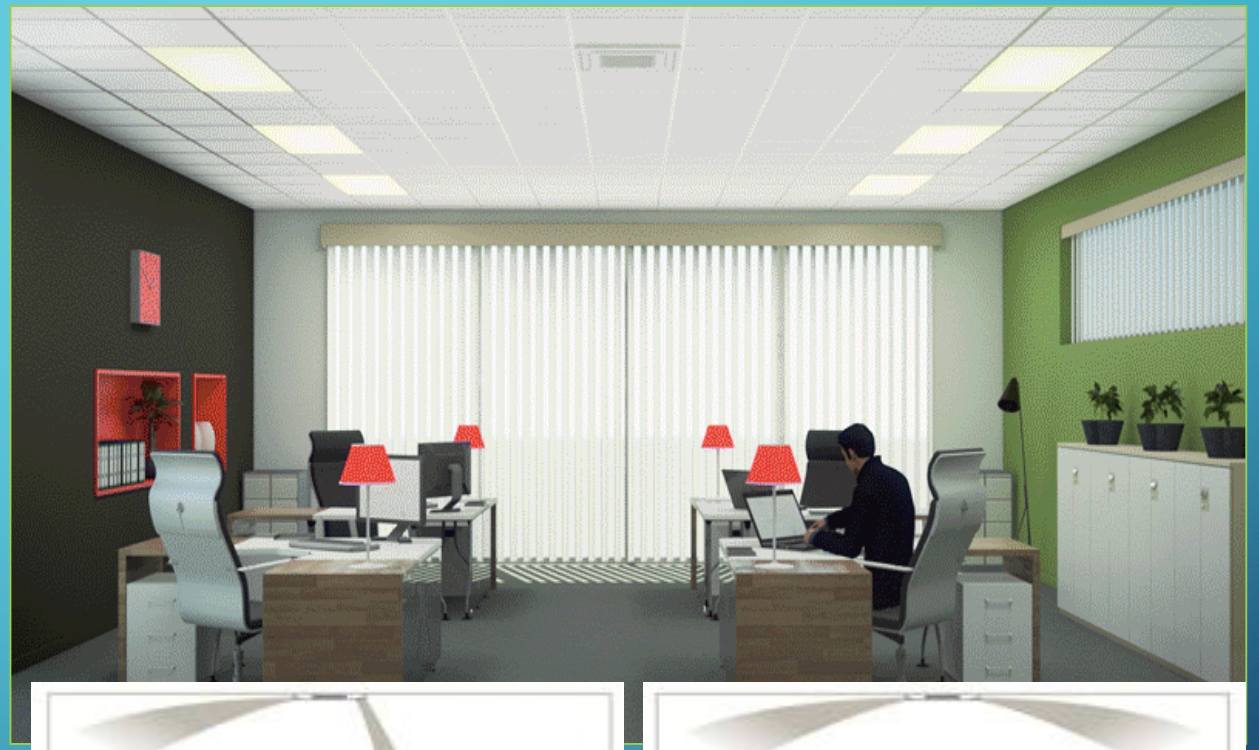
VISTA CEILING CASSETTE FEATURES

Presence & Floor Sensor

- Reduces energy consumption by adjusting set temperature if there are no people in the room [Presence sensor]
- Improves customer comfort by directing the airflow away from the people observed in the room and hence preventing draught [Presence sensor]
- Improves customer comfort in heating by avoiding stratification of the temperature in the room and thus avoiding cold feet [Floor sensor]



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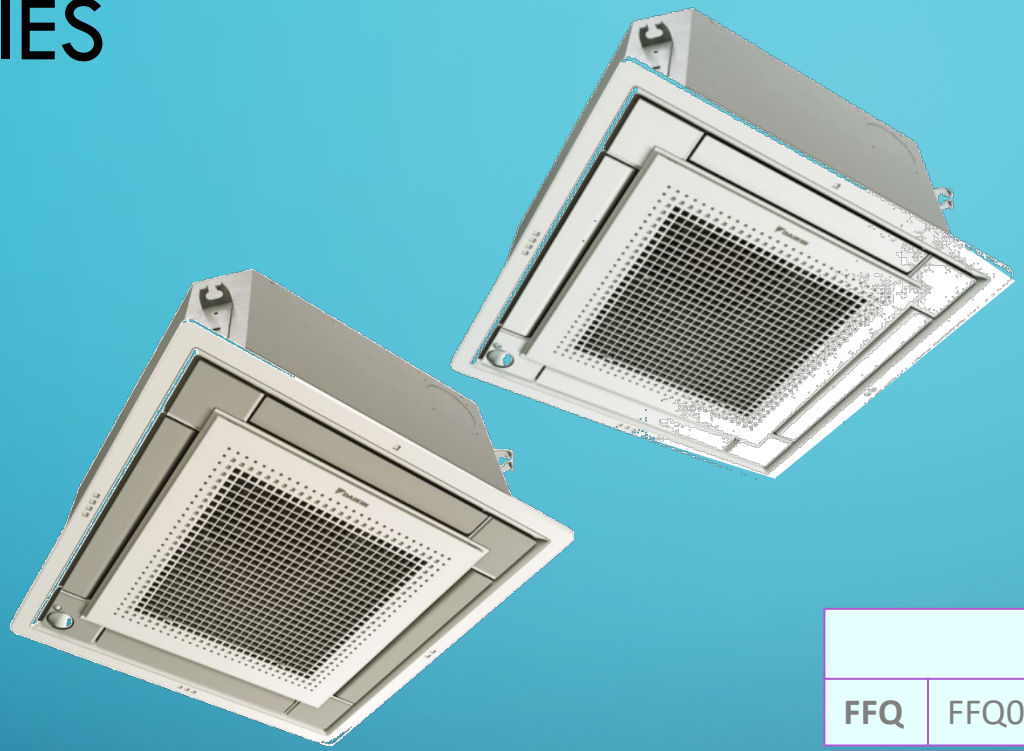
VIRGINIA AIR DISTRIBUTORS, INC.

MULTI-PORT CASSETTE 2X2 FFQ MODEL – VISTA SERIES



Required

Available Models				
FFQ	FFQ09	FFQ12	FFQ15	FFQ18

- Enhanced comfort with uniform airflow and temperature distribution
- Draught free protection with horizontal air discharge
- Simple installation with a true 2X2 decoration panel
- Easy maintenance with an easy-to-clean grille and washable long life filter

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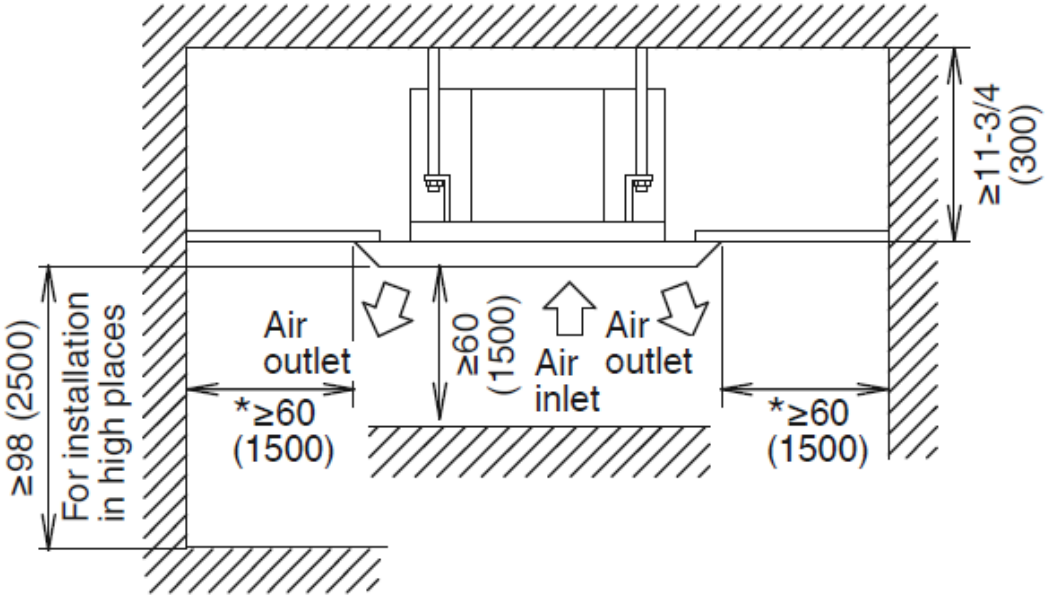
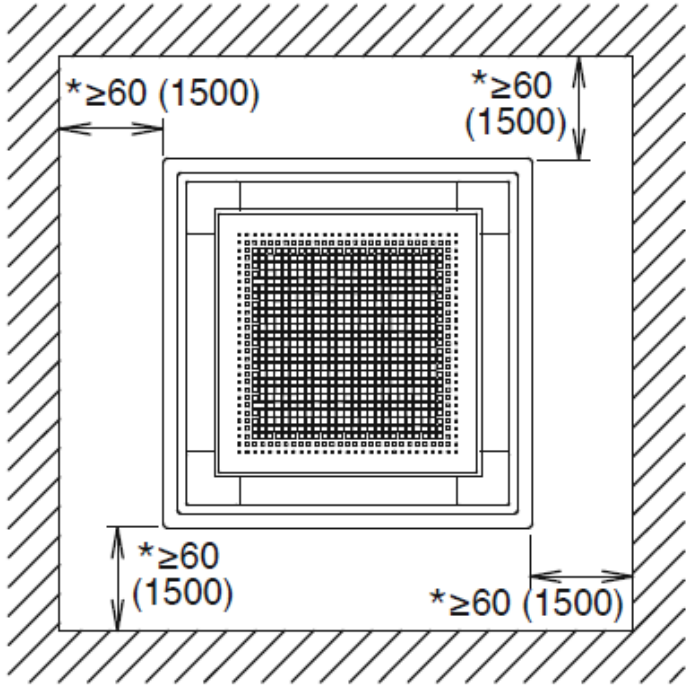
FFQ CEILING CASSETTE DIMENSIONS

Installation Space Requirements





unit:inch (mm)

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CASSETTE AIR FLOW OPTIONS

4-Way Flow

3-Way Flow

2-Way Flow

- Comes standard 4-way. Must purchase accessory kit to block off other sides.

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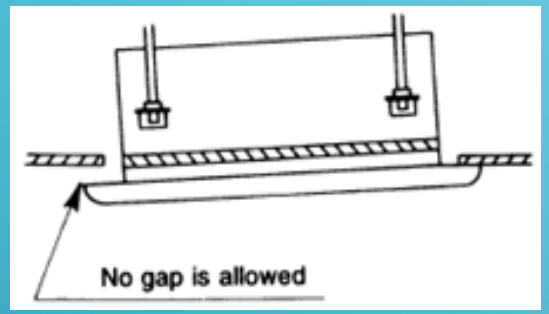
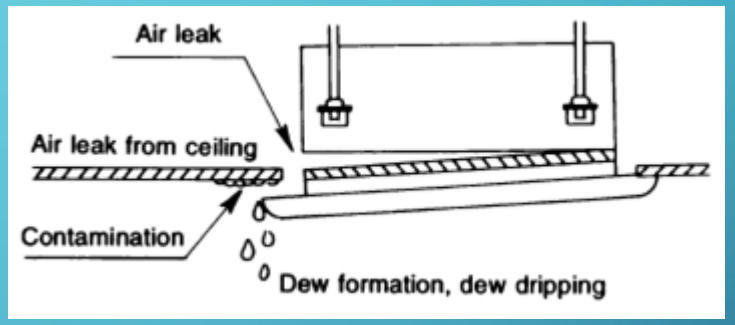
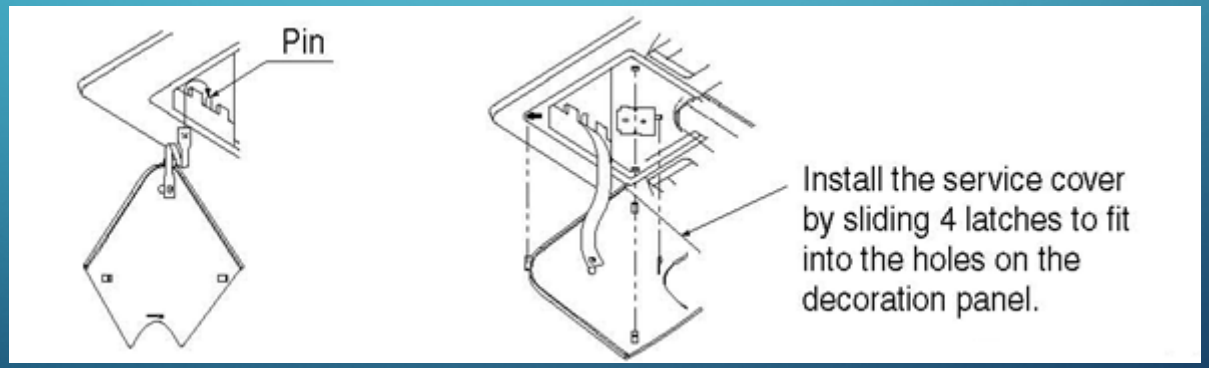
FFQ Decoration Panel Installation

If a gap exists between the ceiling and the decoration panel after screwing in the screws, readjust the indoor unit body height to close gap.







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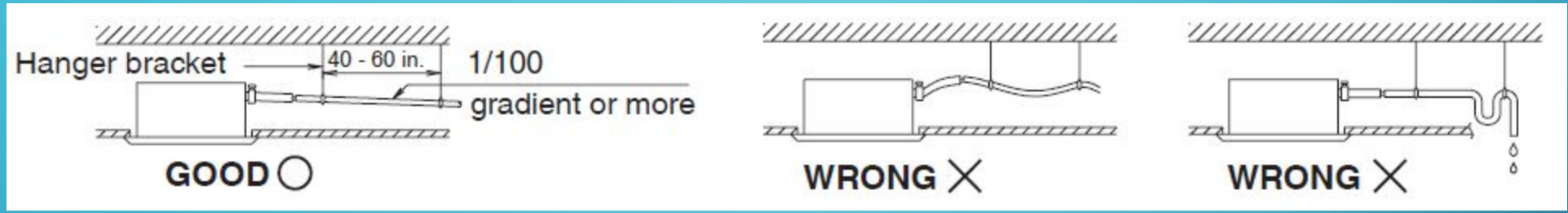
FFQ – CEILING CASSETTE DRAIN PIPING
Built-in pump with 21 INCHES of lift

Sloped Piping



Raised Drain Piping

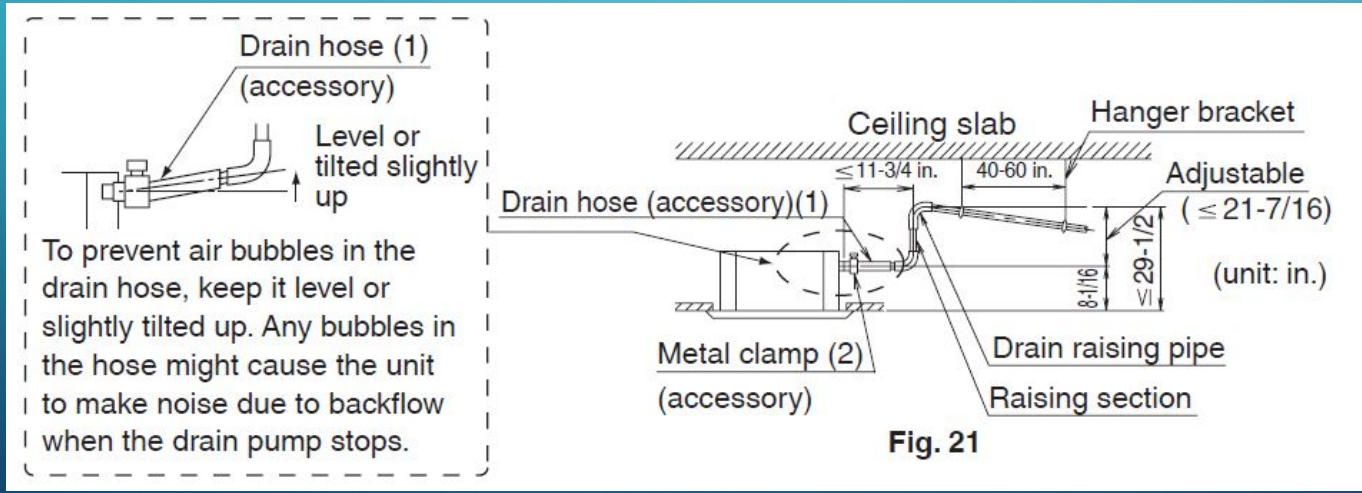


Fig. 21

-Raised pipes height of less than 21-7/16in
-Install at right angle at no more than 11-3/4in from unit

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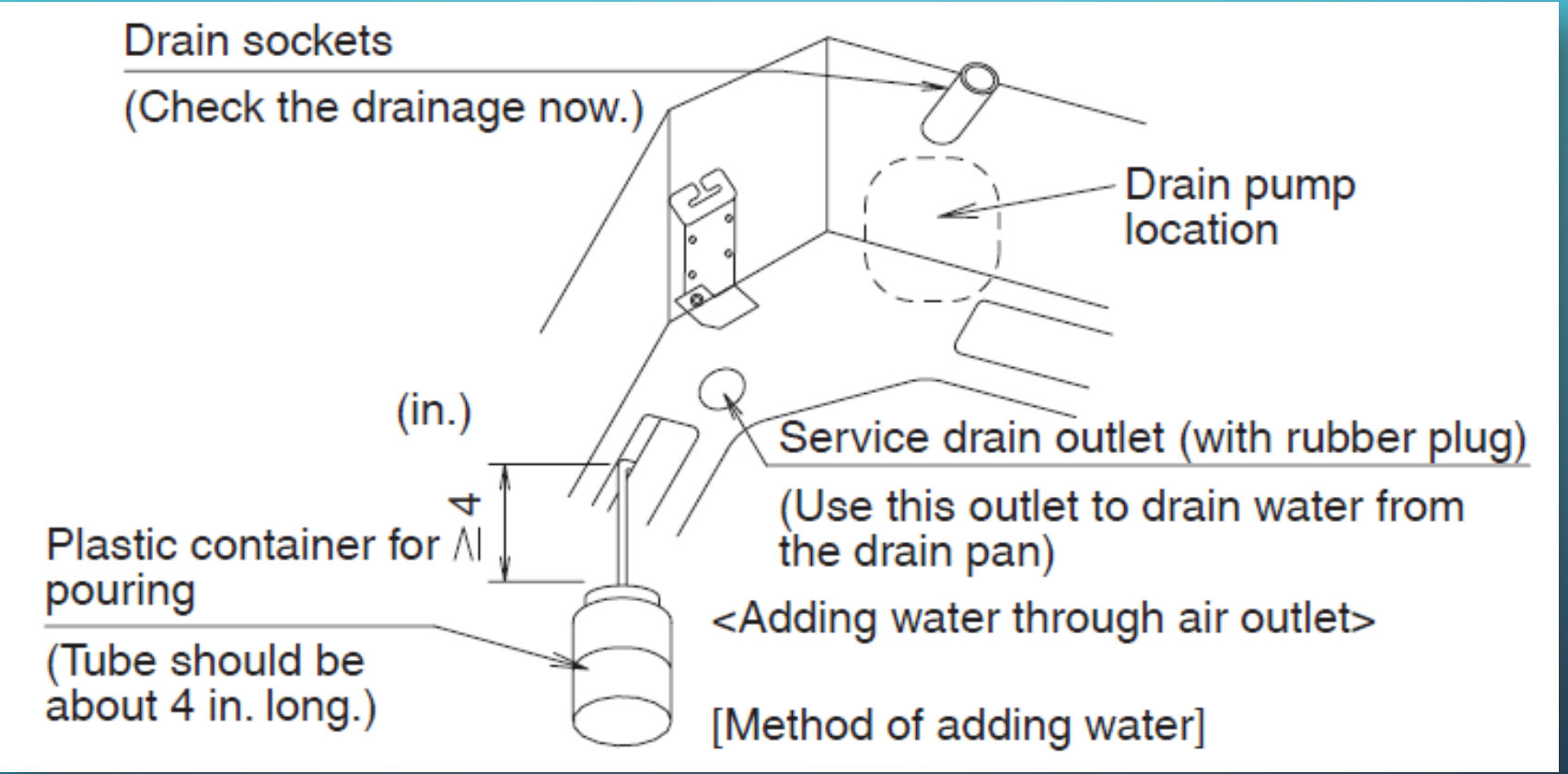
ACCESSING THE DRAIN



- **Easy Access from Bottom of Unit to Drain**

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FFQ CASSETTE FRESH AIR INTAKE ACCESSORY

1. Cut off the knockout hole on the side plate. (Fig.1)

The knockout hole is opposite to ref. pipe.

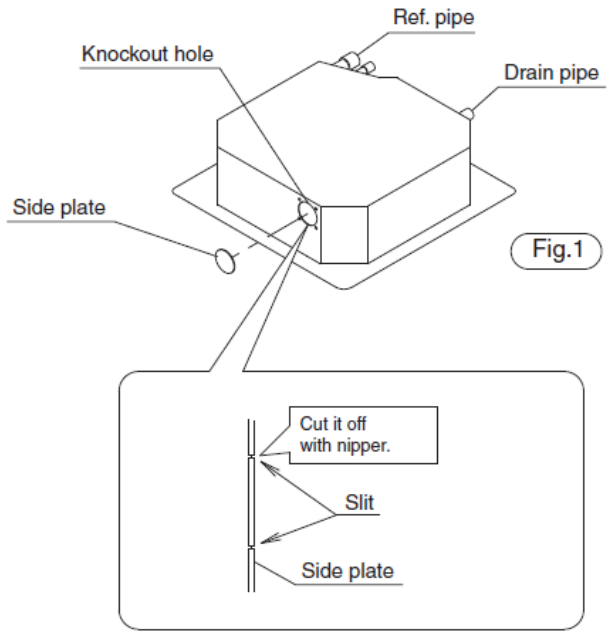

Fig.1

2. Adhere the insulation ④ for opening of unit to the opening. (Fig. 2)

Attach the insulation ④ designed to fit the hole in the indoor unit.

Attach the insulation ④ without concealing the screw hole of the indoor unit.

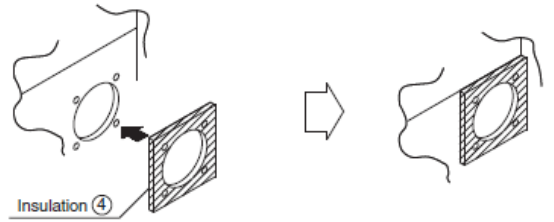

Fig. 2

3. Install the duct flange ① with screws ② (M4´12, 4 screws) to the opening and adhere the insulation ③(Fig. 3)

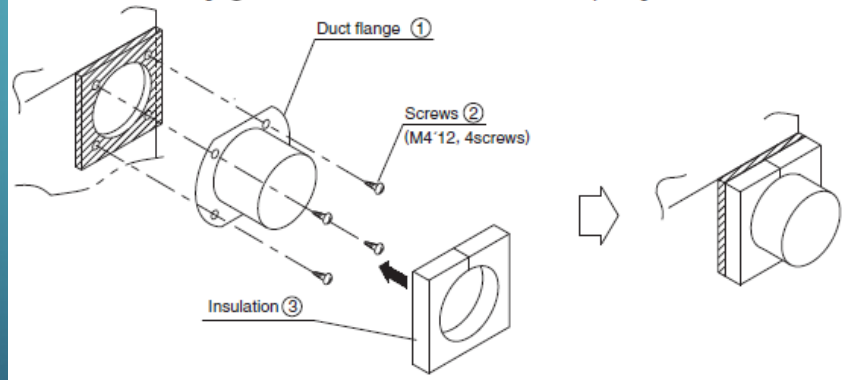

Fig. 3

<KDDQ44XA60> Fresh Air Intake Kit

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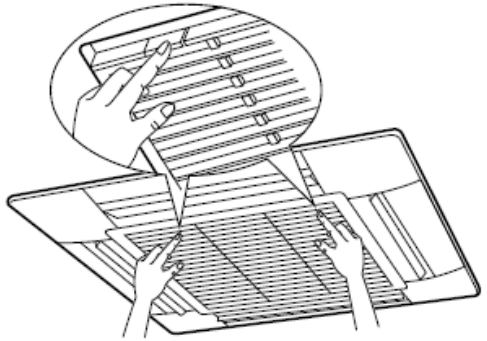
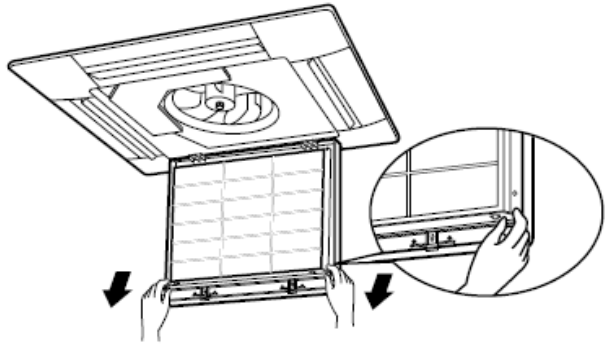
FFQ CEILING CASSETTE FILTER SYSTEM

1. **Open the suction grille.**
   Push it downward slowly while pressing the buttons provided on two spots.
   (Follow the same procedure for closing.)

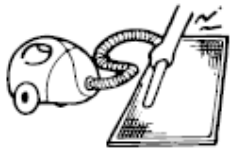


2. **Detach the air filter.**
   Pull the hook of the air filter out diagonally downward, and remove the filter.



3. **Clean the air filter.**
   Use vacuum cleaner **A)** or wash the air filter with water **B)**.

A) Using a vacuum cleaner



B) Washing with water
When the air filter is very dirty, use soft brush and neutral detergent.

Remove water and dry in the shade.

- Easy filter removal for maintenance

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PRODUCT INSTALLATION
INDOOR DUCTED UNITS

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FDMQ/FBQ INSTALLATIONS

GOOD

Insulating unit cabinet is recommended, when not in conditioned space!

Min. 30” clearance required under unit.

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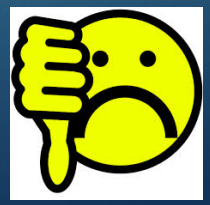
FDMQ/FBQ INSTALLATIONS

BAD



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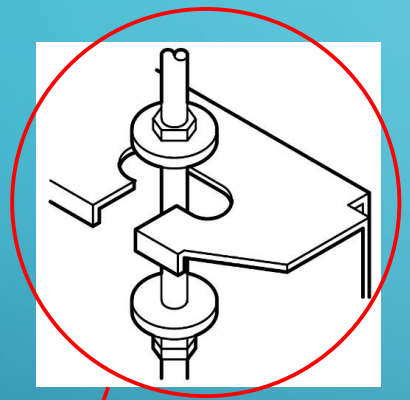
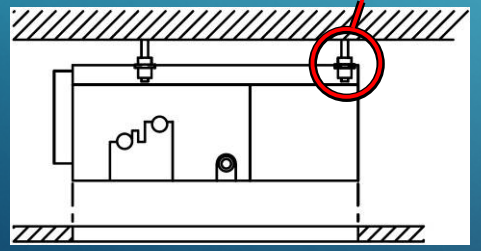
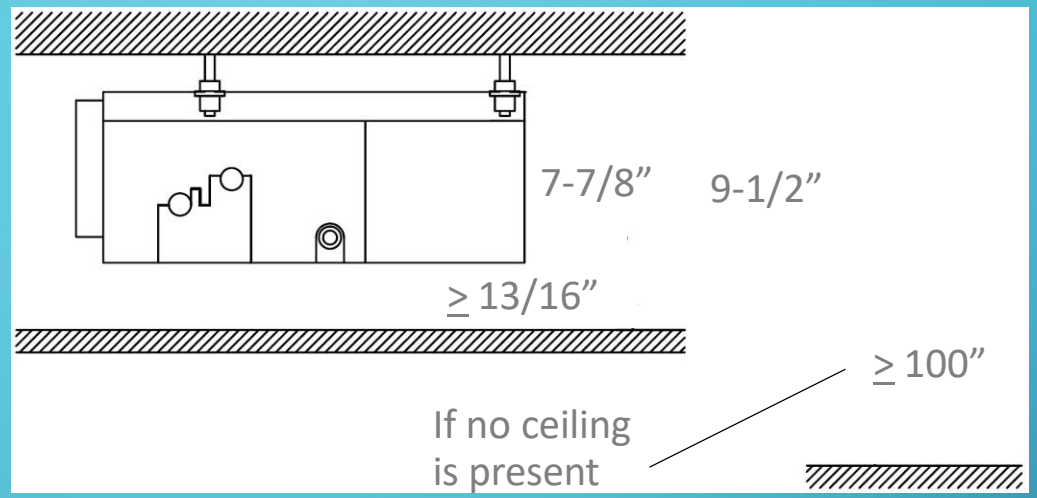
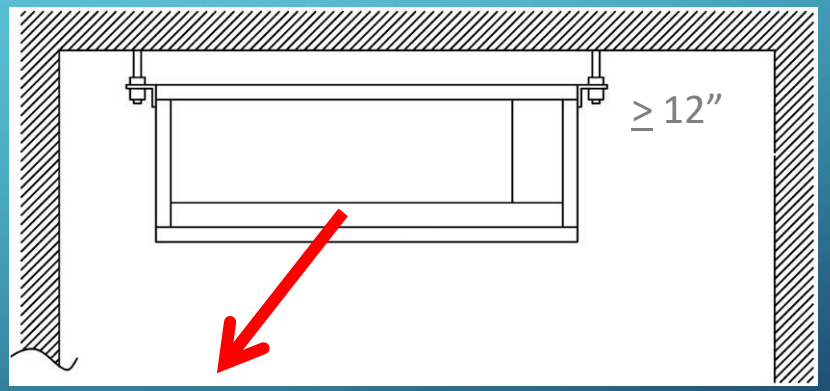
SLIM DUCT INDOOR UNITS









NOTE: Install the signal receiver, which has a built-in temperature sensor, near the intake vent where there is convection of air and it can get an accurate reading of the room’s temperature.

If unit is installed in an attic, it is recommended to insulate the cabinet of the unit to prevent excessive heat gain and condensation.

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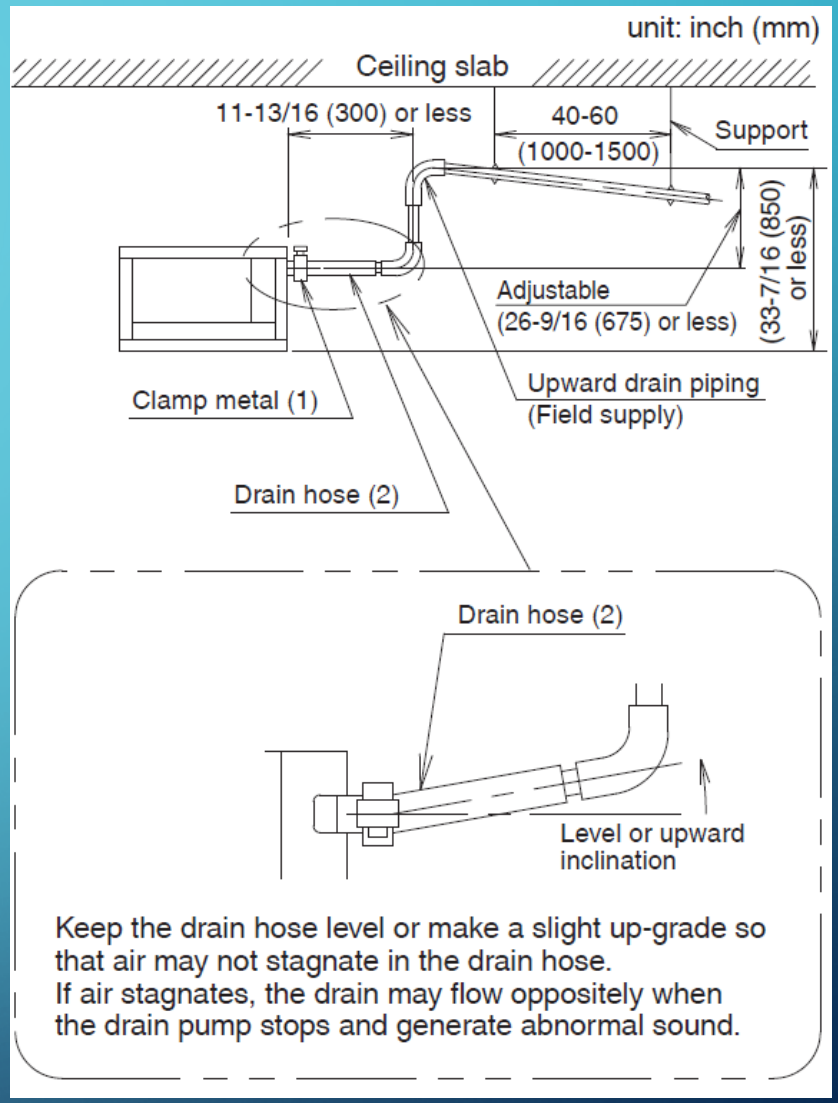
- The maximum height of the drain riser is 29-9/16 inch (675mm). Since the drain pump mounted on this indoor unit is a high head type, from the characteristic point of view, the higher the drain riser the lower the draining noise. Therefore, the drain riser of 11-13/16 inch (300mm) or higher is recommended.
- For upward drain piping, keep the horizontal piping distance of 11-13/16 inch (300mm) or less between the drain socket root to the drain riser.
- To avoid the attached drain hose (2) getting excessive force, do not bend nor twist it. It may cause water leakage.
- As for drain piping connection, do not connect the drain hose directly to a sewage that gives off ammonia odor. (The ammonia in the sewage may go through the drain piping and corrode the heat exchanger of the indoor unit.)



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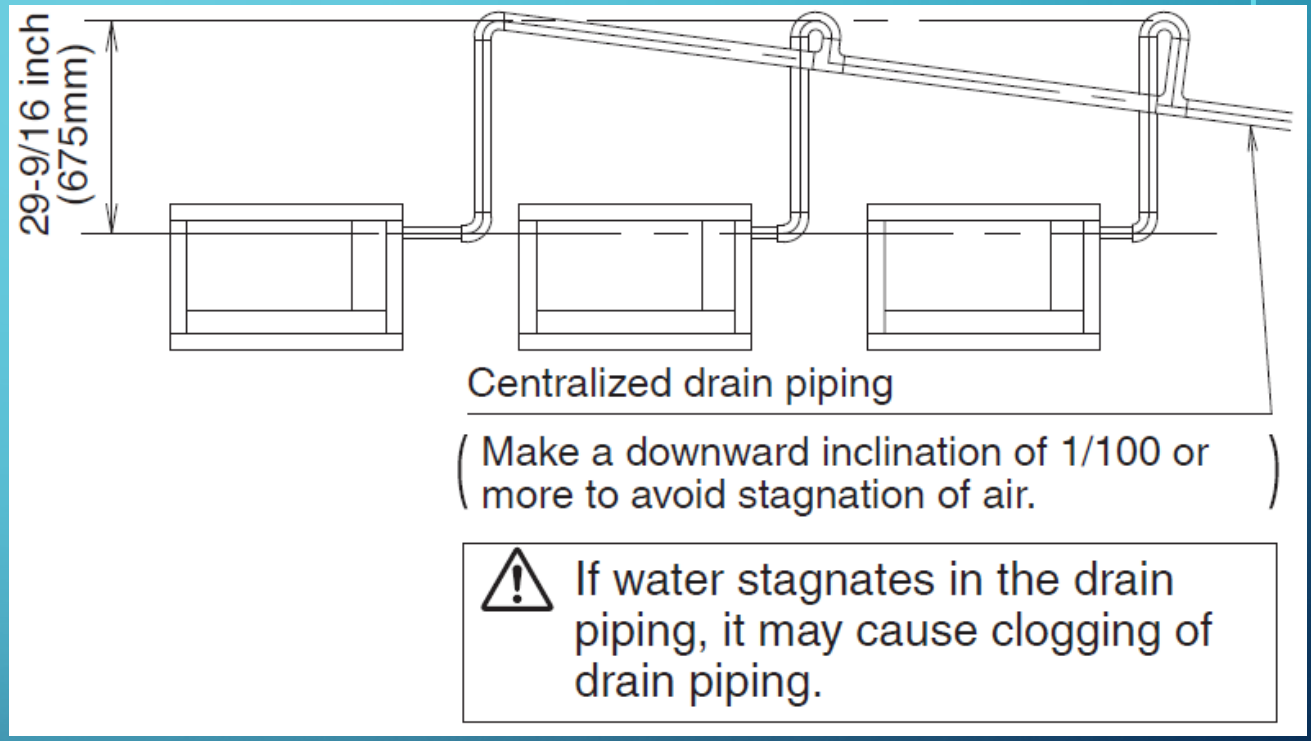
- In case of centralized drain piping, carry out piping work according to the procedure shown in the following.
- As for the size of centralized drain piping, select the size that meets the capacity of indoor units to be connected. (Refer to the technical document)
- Positioning the upward drain piping at an angle may cause float switch malfunction and lead to water leakage
- While replacing with new indoor unit, use the attached new drain hose (2) and the clamp metal (1). If an old drain hose or a clamp metal is used, it may cause water leakage.



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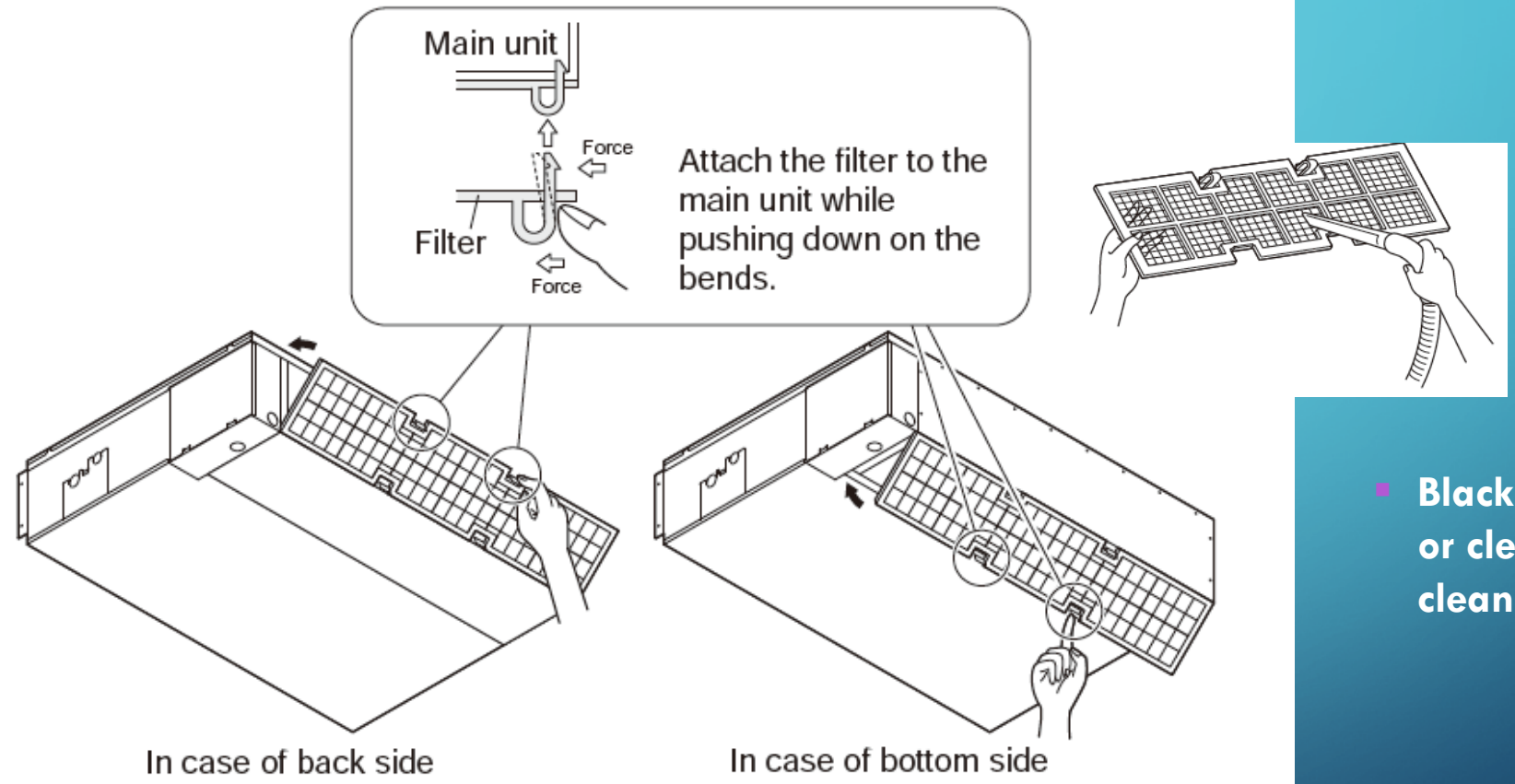
SLIM DUCT FILTER SYSTEM



- Black mesh filter washable or cleaned with vacuum cleaner. Clean as needed.

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PRODUCT INSTALLATION
MULTI-ZONE SYSTEMS

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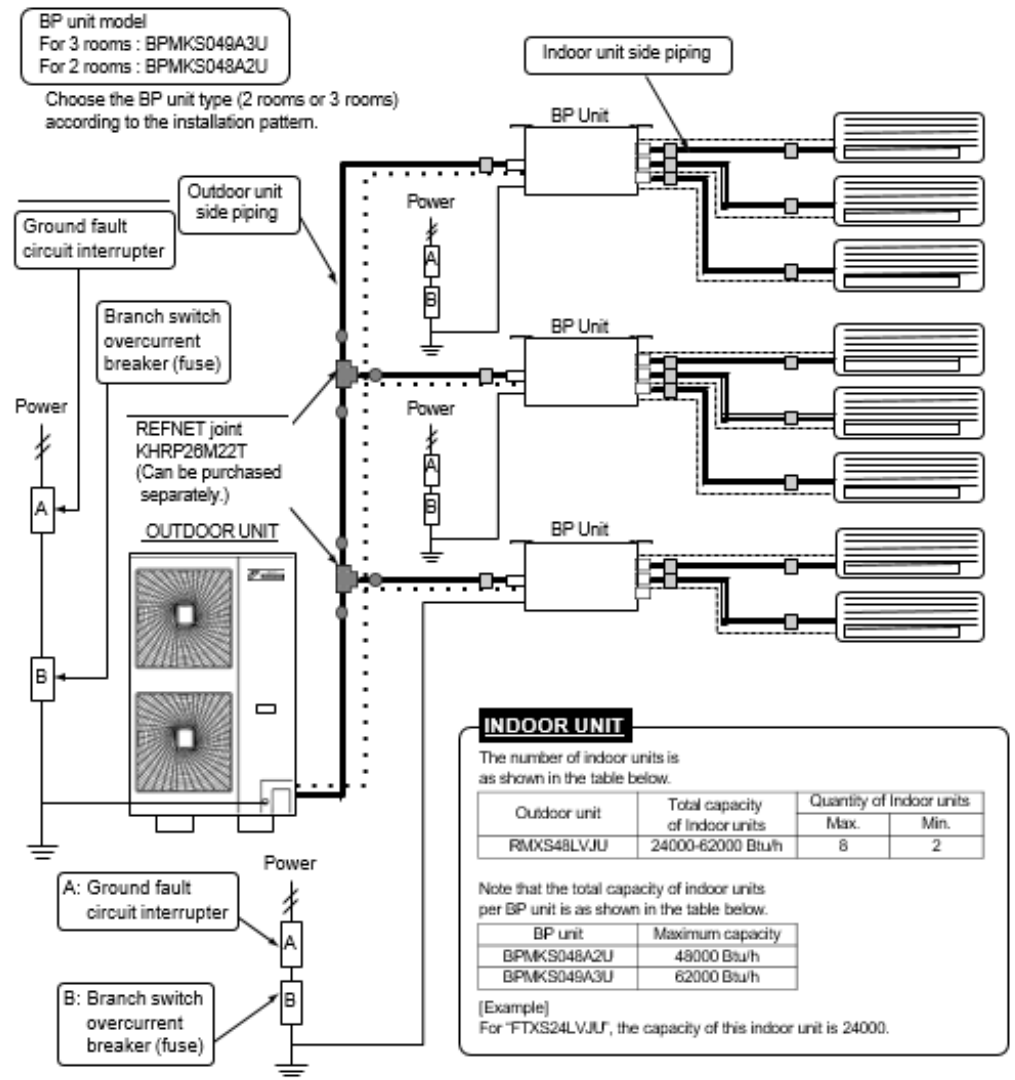
VIRGINIA AIR DISTRIBUTORS, INC.

System Layout

For installation of the indoor and outdoor units, follow the instructions in the Installation manual for each unit.



INDOOR UNIT

The number of indoor units is as shown in the table below.

Outdoor unit	Total capacity of Indoor units	Quantity of Indoor units	
		Max.	Min.
RMXS48LVJU	24000-62000 Btu/h	8	2

Note that the total capacity of indoor units per BP unit is as shown in the table below.

BP unit	Maximum capacity
BPMKS048A2U	48000 Btu/h
BPMKS049A3U	62000 Btu/h

[Example]
For "FTXS24LVJU", the capacity of this indoor unit is 24000.

Power supply line (3 wires) (60Hz 208/230V)
*Outdoor unit and all BP units require their own power supply.

Transmission line (2 wires)

Power supply and transmission line (4 wires)

Piping

Brazing connection

Flare connection

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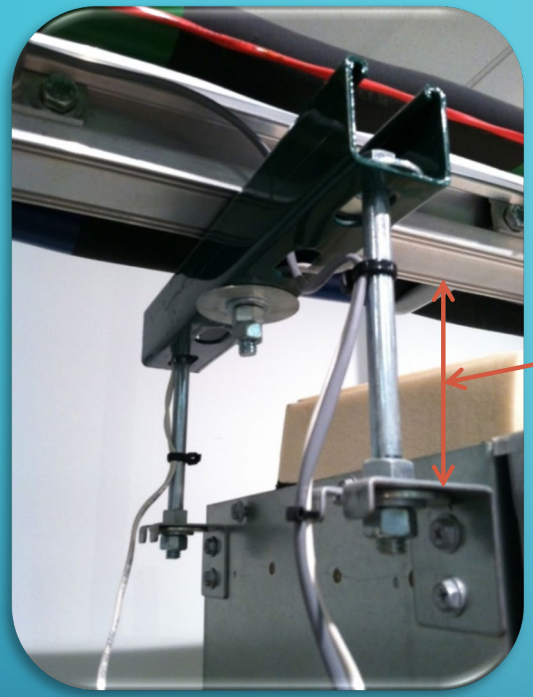
Allow Space For Service



Allow at least 8” of clearance above BP unit to allow for service.

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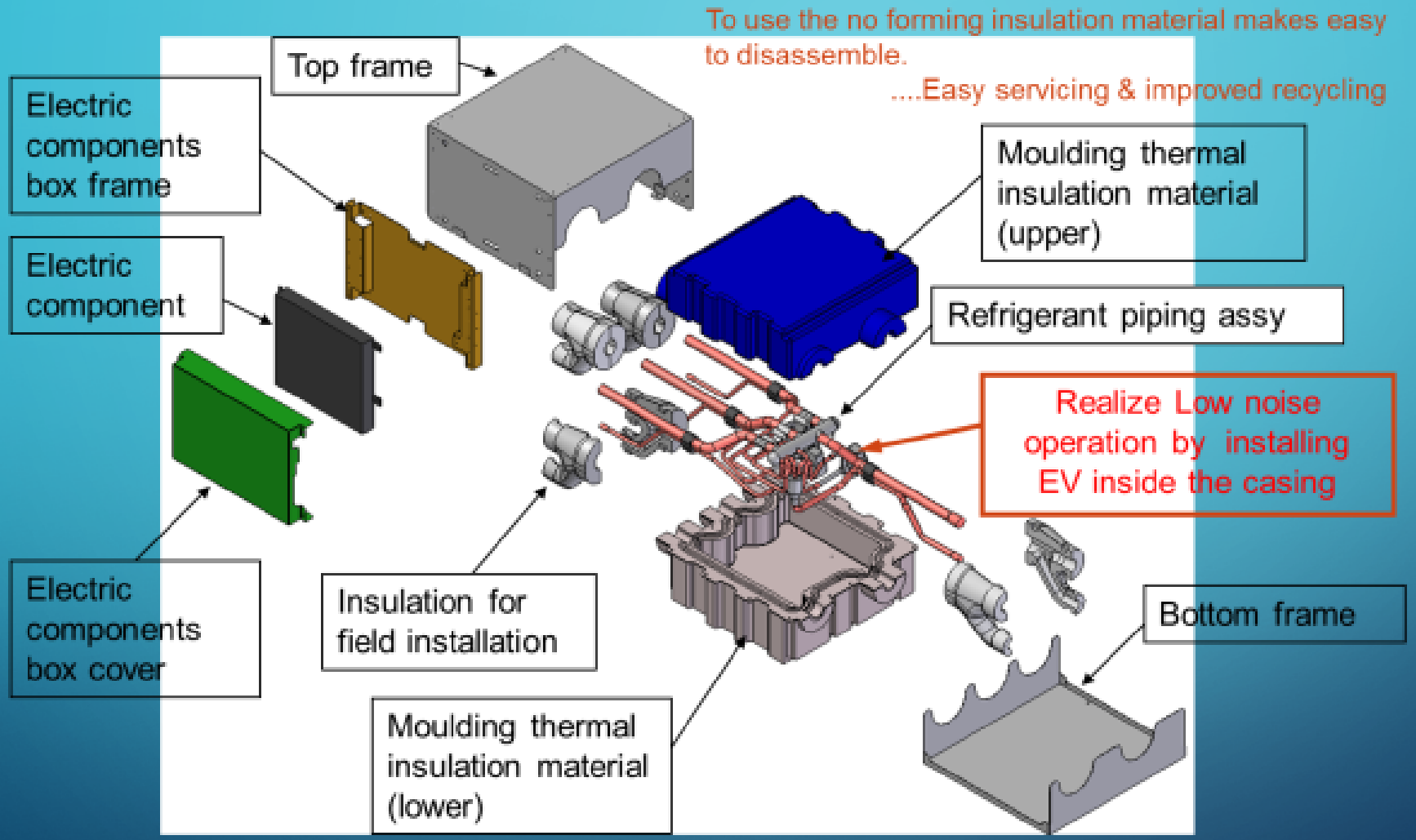
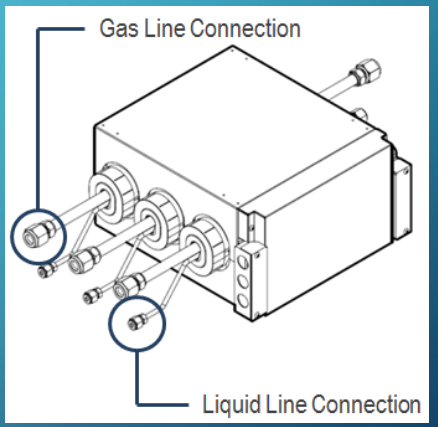
BP UNIT EXPLODED VIEW





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BRANCH PORT CONNECTIONS

- Flare nut connections
- Choice of 2 zone or 3 zone

3 Port -

2 Port -

Model Name				BPMKS048A2U	BPMKS049A3U
Power Supply				Single phase 60Hz 208/230V	
Power Consumption			W	10.0	10.0
Minimum Circuit Amps (MCA)			A	15.0	15.0
Running Current			A	0.05	0.05
Sound Pressure - (Cooling/Heating)			dB(A)	32/32	32/32
Number of Connectable Indoor Units				1 to 2	1 to 3
Min. Connection Combination				7,000	7,000
Max. Connection Combination				48,000	62,000
Piping Connections (O.D.)	Liquid	Outdoor Unit Side	in.	Ø 3/8 x 1	
		Indoor Unit Side	in.	Ø 1/4 x 2	Ø 1/4 x 3
	Gas	Outdoor Unit Side	in.	Ø 5/8 x 1	
		Indoor Unit Side	in.	Ø 5/8 x 2	Ø 5/8 x 3
	Drain		in.	Not required	
Reducer			pc.	1 (Ø 3/8 → Ø 1/4)	
			pc.	4 (Ø 5/8 → Ø 1/2)	
			pc.	3 (Ø 5/8 → Ø 3/8)	
Dimensions (H x W x D)			in.	7-1/16 x 11-9/16 x 13-3/4	
Net Weight			lbs.	18.0	20.0

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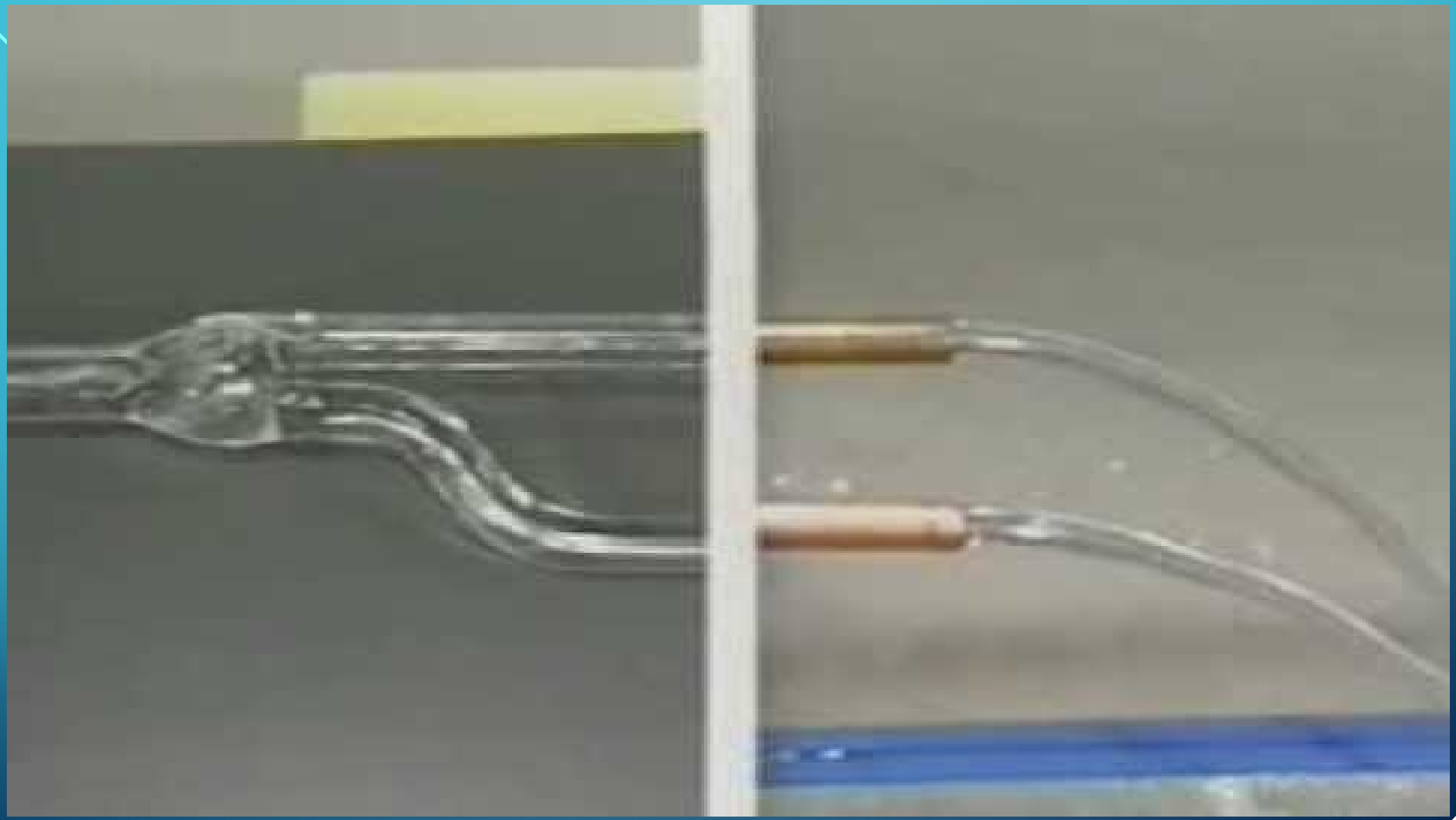

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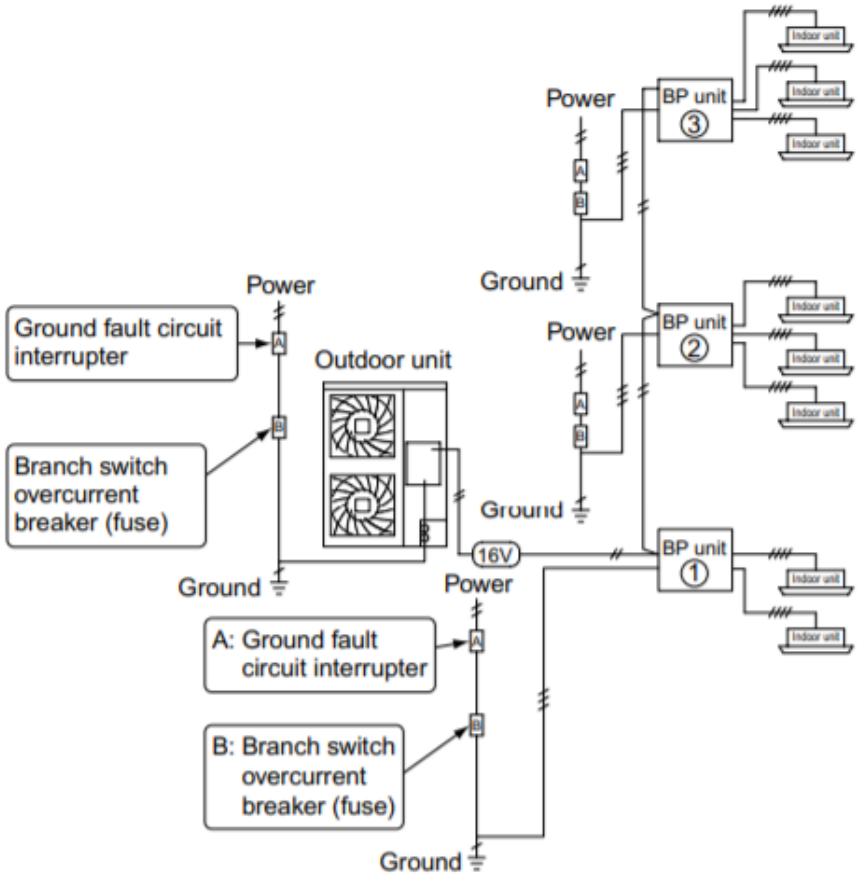
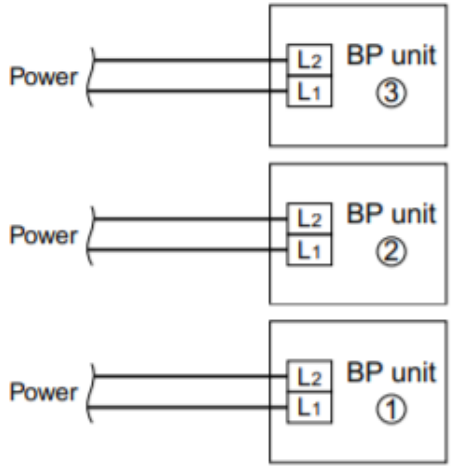
Connecting the Wiring

Connection example of total system wiring



Wiring method for the power line.



- Be sure to prepare a power supply for each BP unit.

⚠ CAUTION

- Be sure to connect the power line to L_1 and L_2.

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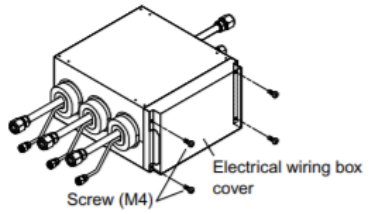
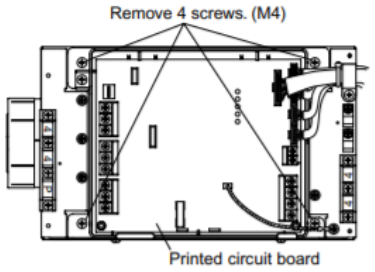
Procedure for changing the installation location of the printed circuit board

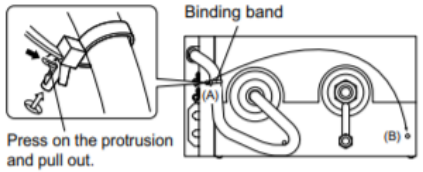
1) Remove the screws and pull off the electrical wiring box cover.



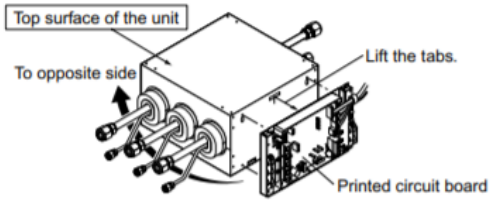
2) Remove 4 screws shown in the figure, remove the printed circuit board.



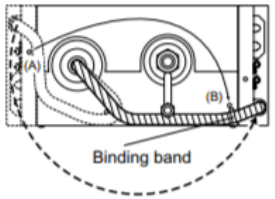
3) Remove the binding band (A) which holds the wires.



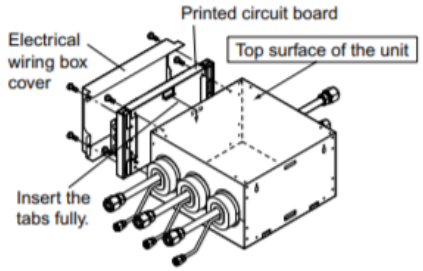
4) Remove the printed circuit board, and reattach as shown in the figure.



5) Reattach the binding band to position (B).



6) Attach the printed circuit board and electrical wiring box cover to the other side and secure with the screws.



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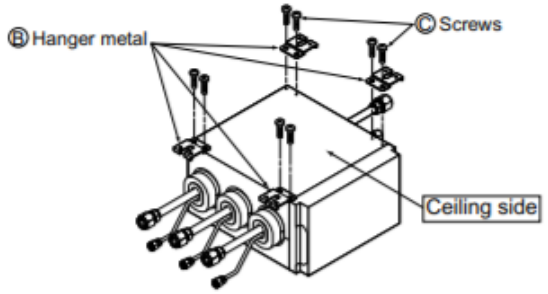
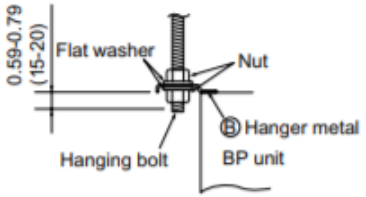
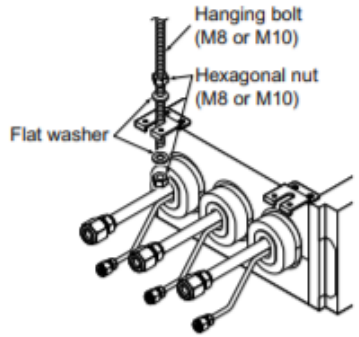
2. Ceiling-suspended type

Procedure:

1) Fix the furnished Ⓑ hanger metal with two Ⓒ screws. (4 locations in total)
2) Using an insert-hole-in-anchor, hang the hanging bolt.
3) Install a hexagon nut and a flat washer (field supply) to the hanging bolt as shown in the figure in the below, and lift the unit to hang on the hanger metal.
4) After checking with a level that the unit is level, tighten the hexagon nut.
   * The tilt of the unit should be within ±5° in front/ back and left/right.



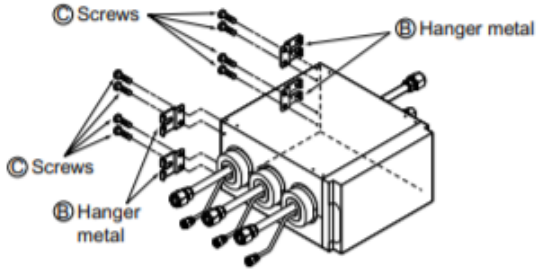




3. Wall-mounted type

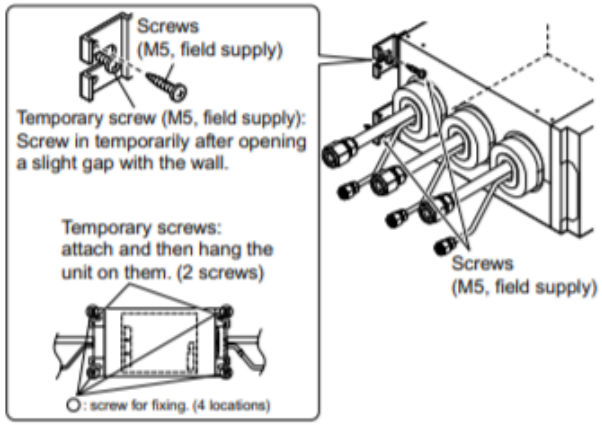
Procedure:

1) Fix the furnished Ⓑ hanger metal with two Ⓒ screws. (4 locations in total)
2) Create a gap with the wall and screw in the temporary screws (M5, field supply), and hang the BP unit.
3) After checking with a level that the unit is level, fix the unit with screws (M5, field supply).
   * The tilt of the unit should be within ±5° in front/ back and left/right.



⚠ CAUTION

- Be sure to install the unit with the top surface up.
- **Do not install near bedrooms. The sound of refrigerant flowing through the piping may sometimes be audible.**



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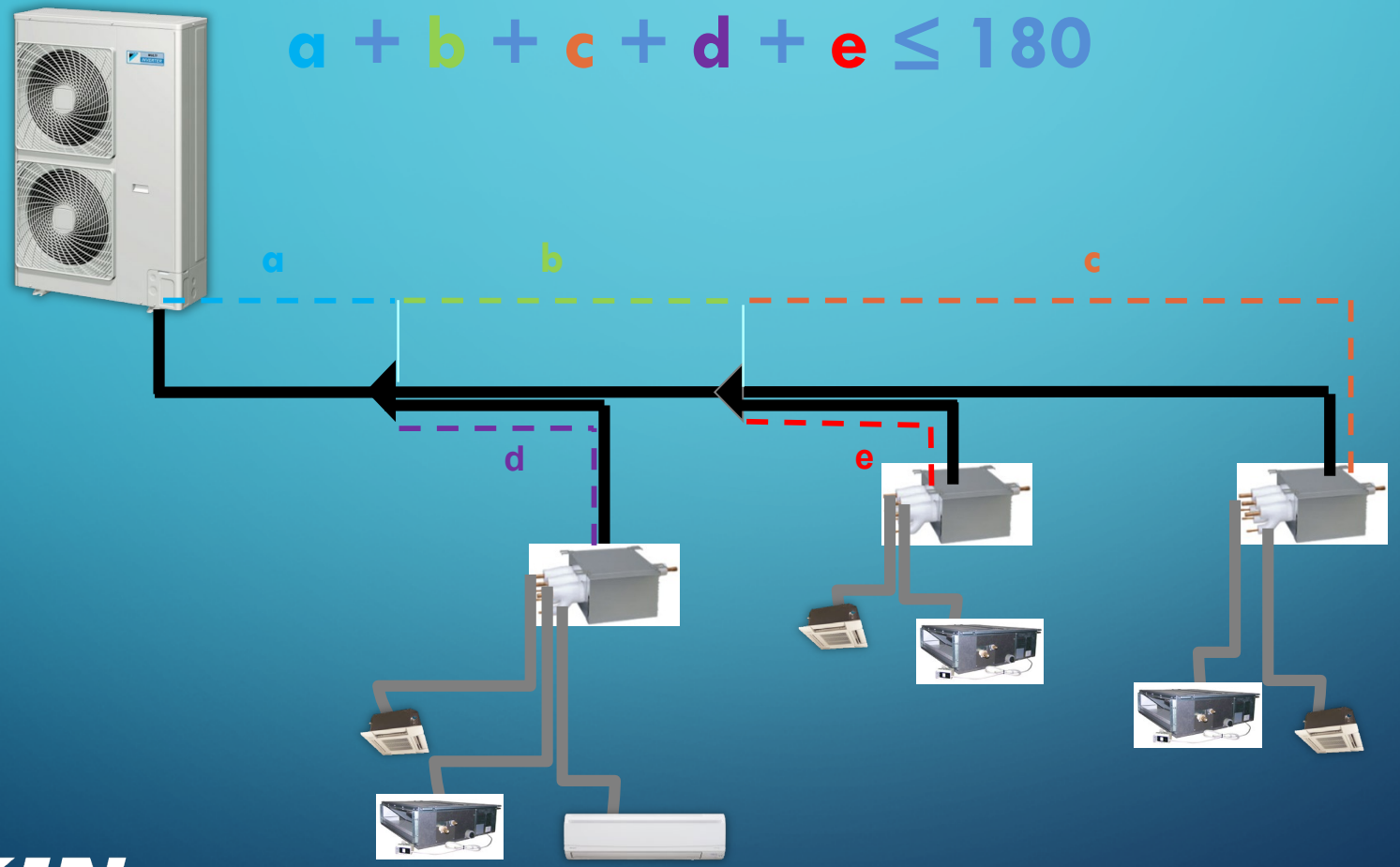
PIPING RULE #1

Total piping length between outdoor unit and BP units ≤ 180 ft



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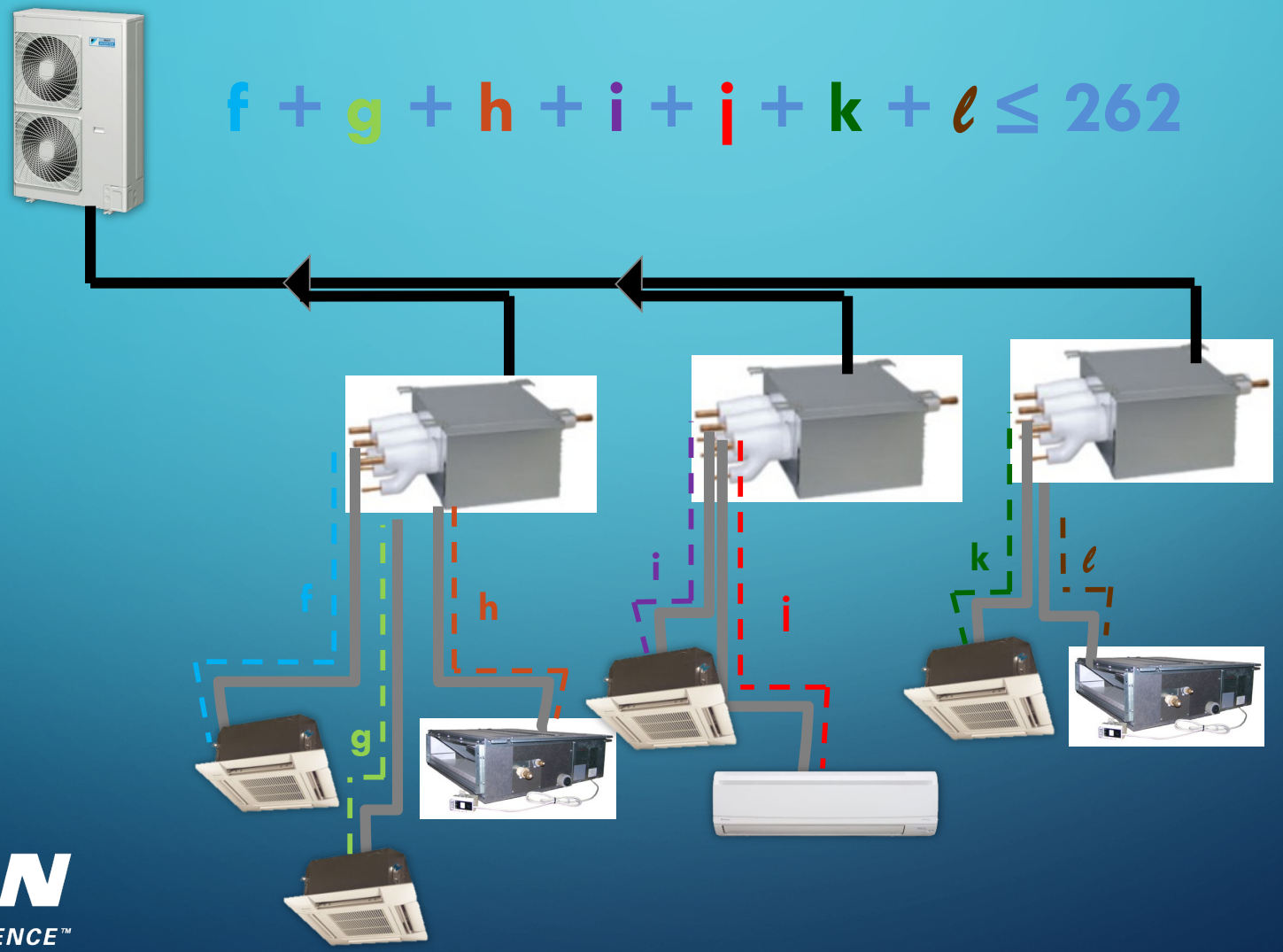
PIPING RULE #2

Total piping length between BP units and indoor units ≤ 262 ft



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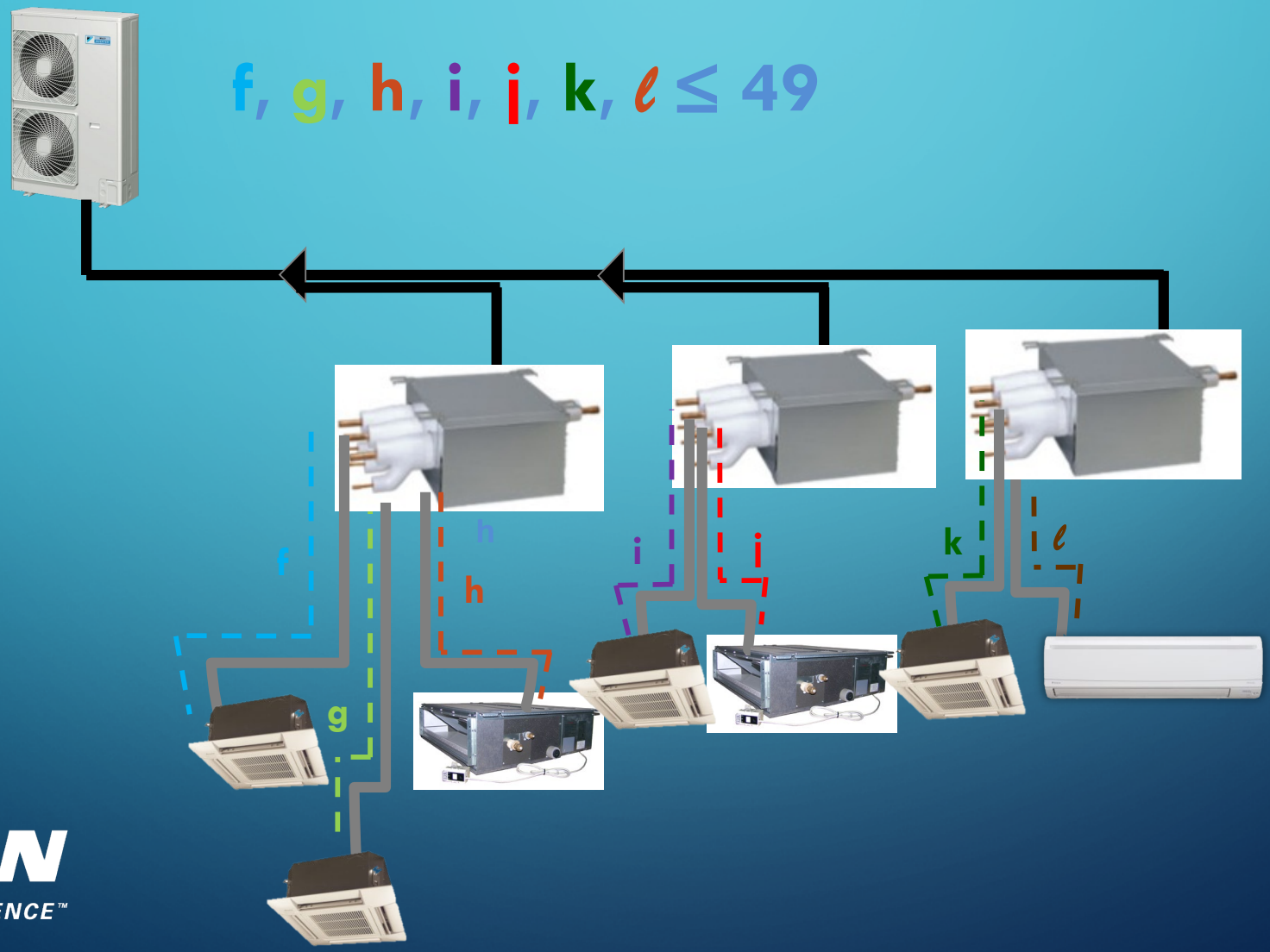
PIPING RULE #3

Total piping length between a BP unit and connected indoor unit ≤ 49 ft



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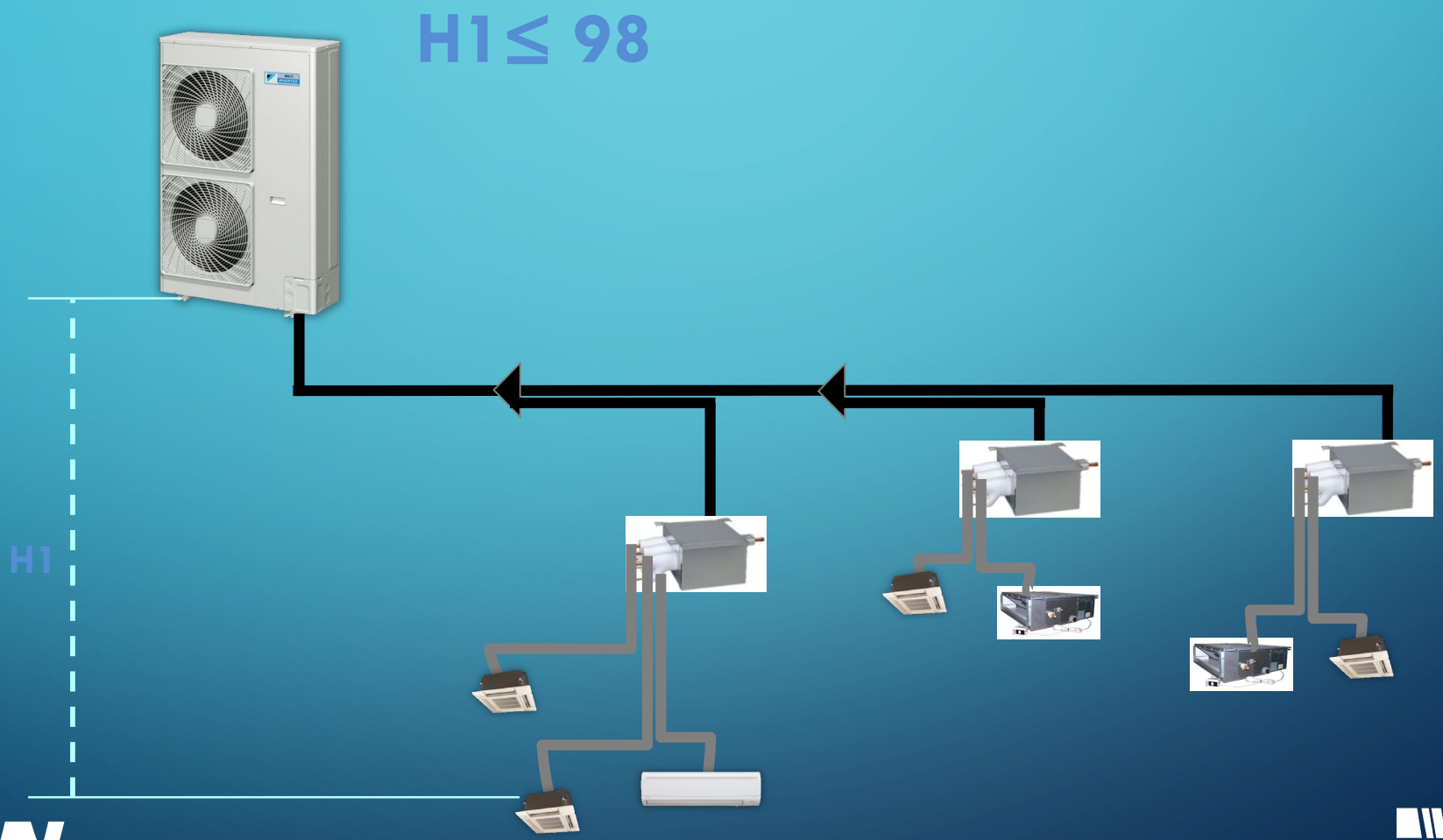
PIPING RULE #4

Total allowable height between outdoor and indoor units ≤ 98 ft



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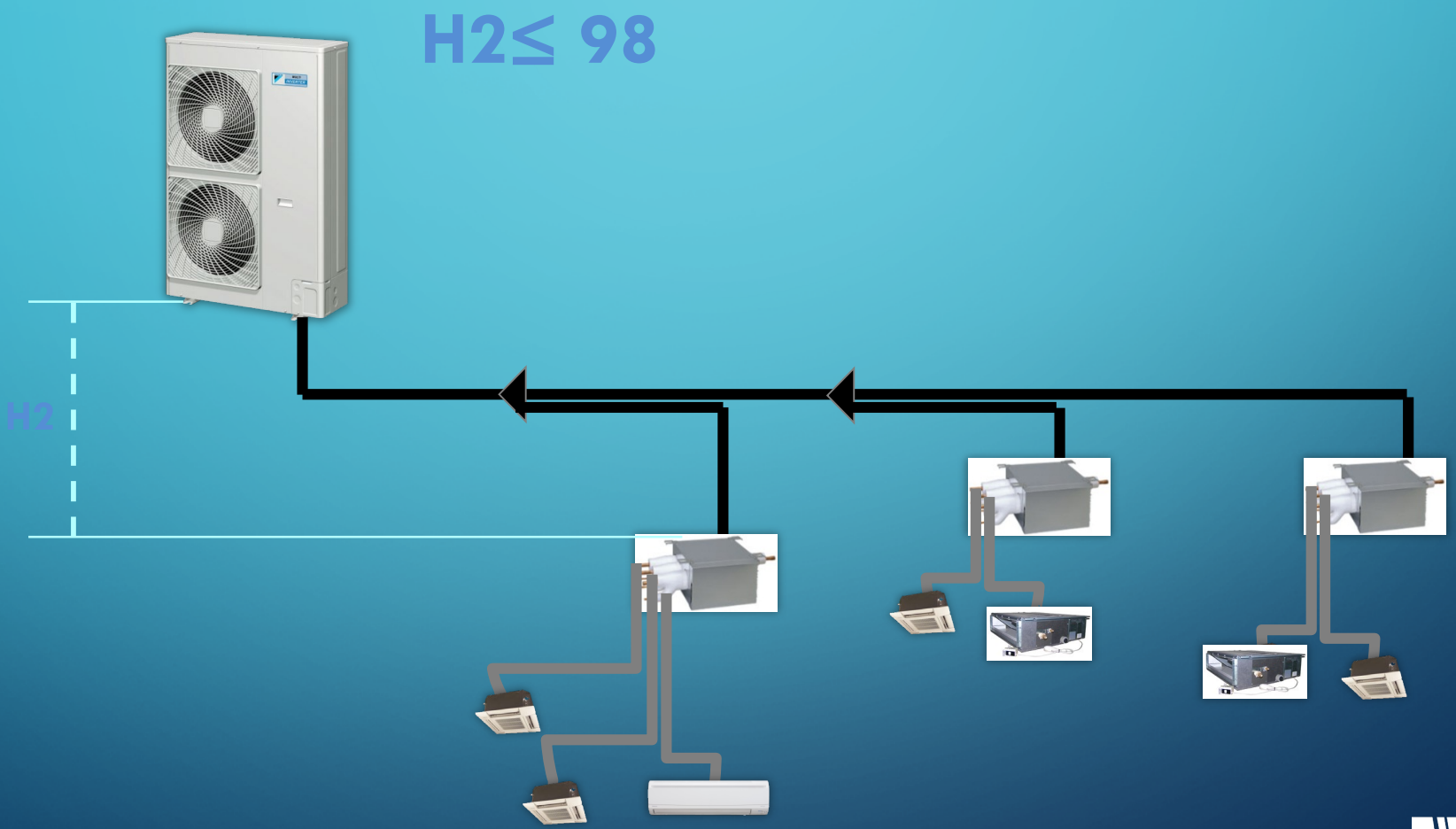
PIPING RULE #5

Total allowable height between outdoor unit and BP units ≤ 98 ft



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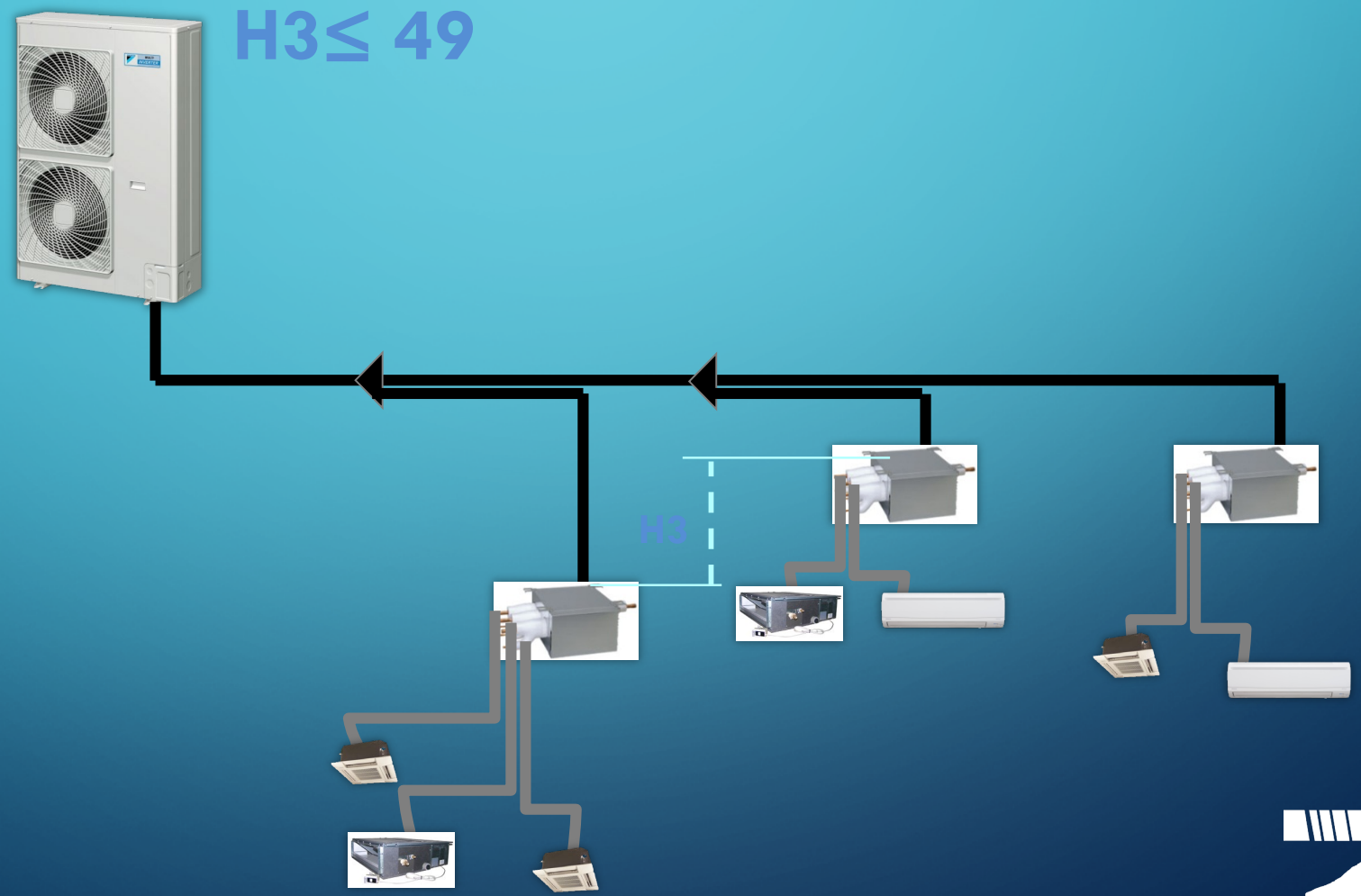
PIPING RULE #6

Total allowable height between BP units ≤ 49 ft



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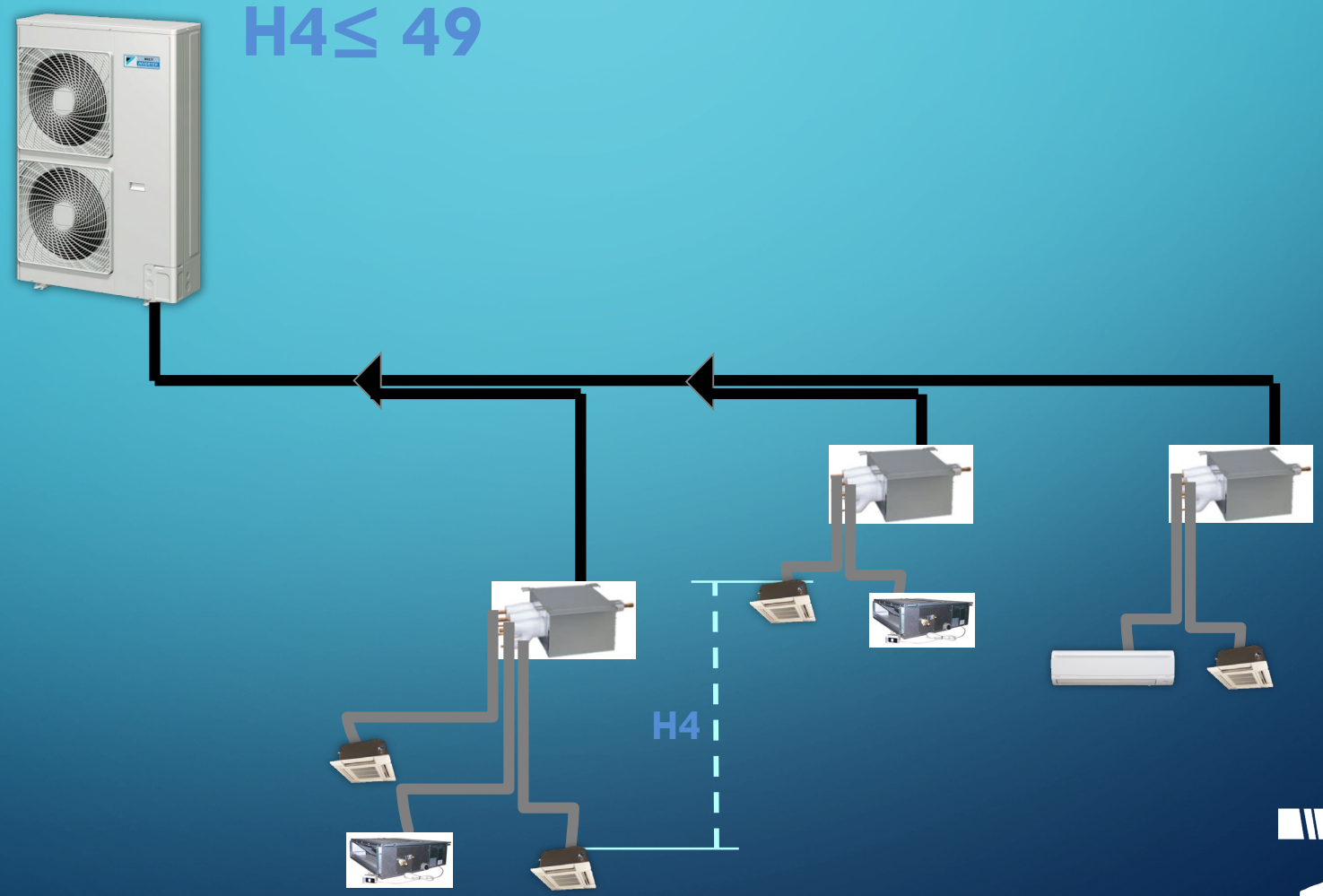
PIPING RULE #7

Total allowable height between indoor units ≤ 49 ft



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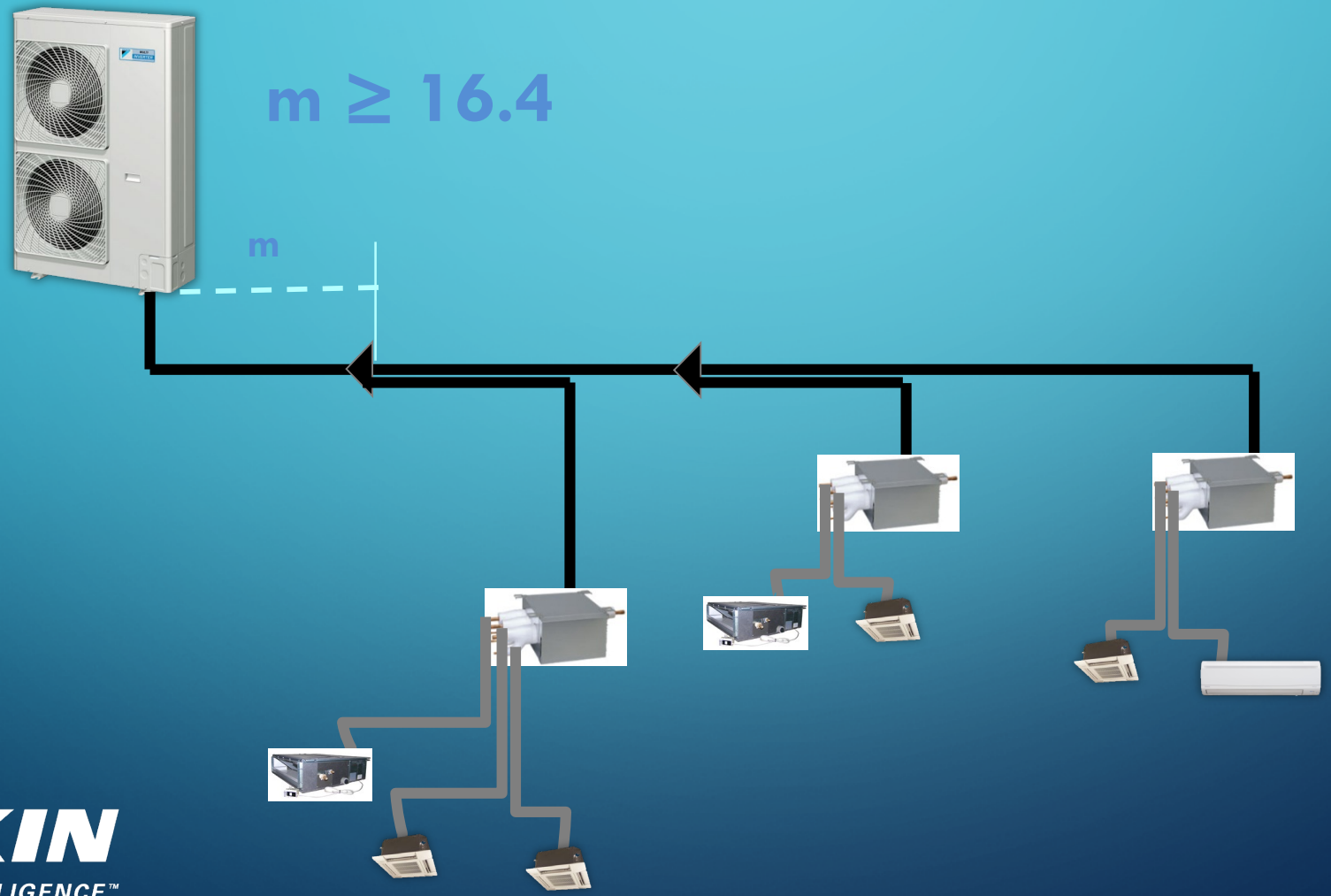
PIPING RULE #8

Minimum allowable piping length between outdoor unit and first REFNET ≥ 16.4 ft



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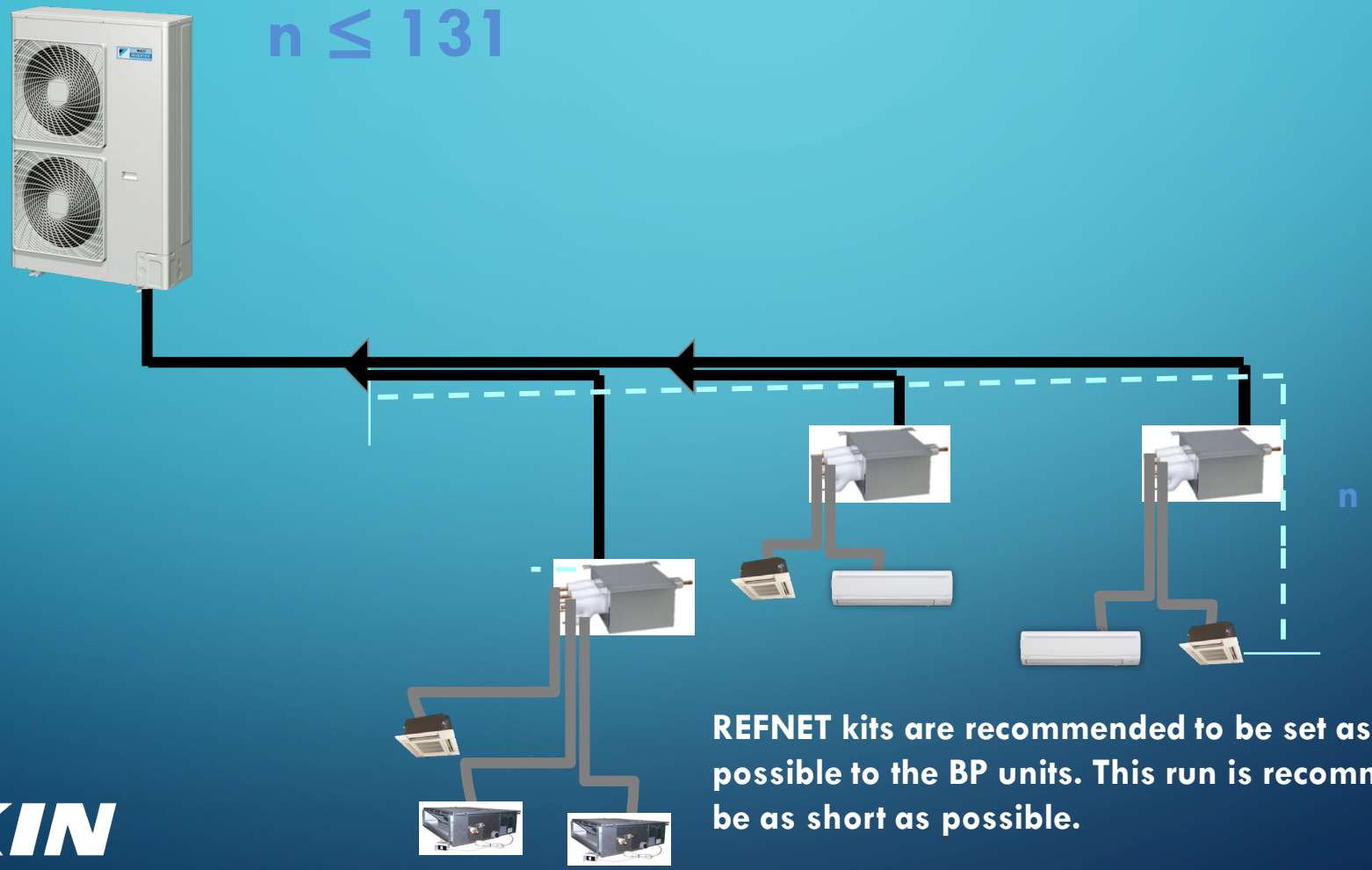
PIPING RULE #9

Maximum piping length from first REFNET to furthest indoor unit
≤ 131 ft



REFNET kits are recommended to be set as near as possible to the BP units. This run is recommended to be as short as possible.

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Daikin 8 Zone Multi Split Selection

Selection

RMXS48LVJU

16.4 ft
3/8"x3/4"

3 Ports
BP-1
BPMKS049A3U

Zone
Zone
Zone

0 Ports
BP-2
N/A

0 Ports
BP-3
N/A

Report

Print

Show Flow Chart

New Project

Terms & Conditions

Selection Check

Total number of Indoor Units		
Total IU Capacity		MBH
Available Cooling Capacity		MBH
Available Heating Capacity		MBH
Connection ratio	0%	
Total Piping Length (Liquid)	16.4	ft
Standard Ref Charge :	8.8	lbs
Add'l Ref Charge	0.59	lbs
Total Ref Charge		lbs

Errors

Minimum Allowable Connection ratio for the system is 50%. Please check your Selection.
No Indoor Unit selected on BP-1. Please check your Selection.
Minimum Allowable Indoor Units for the system is 2. Please check your Selection.

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Multi Port Priority:

How Does it Work?

Option #1 Floating Priority (First Come First Serve)

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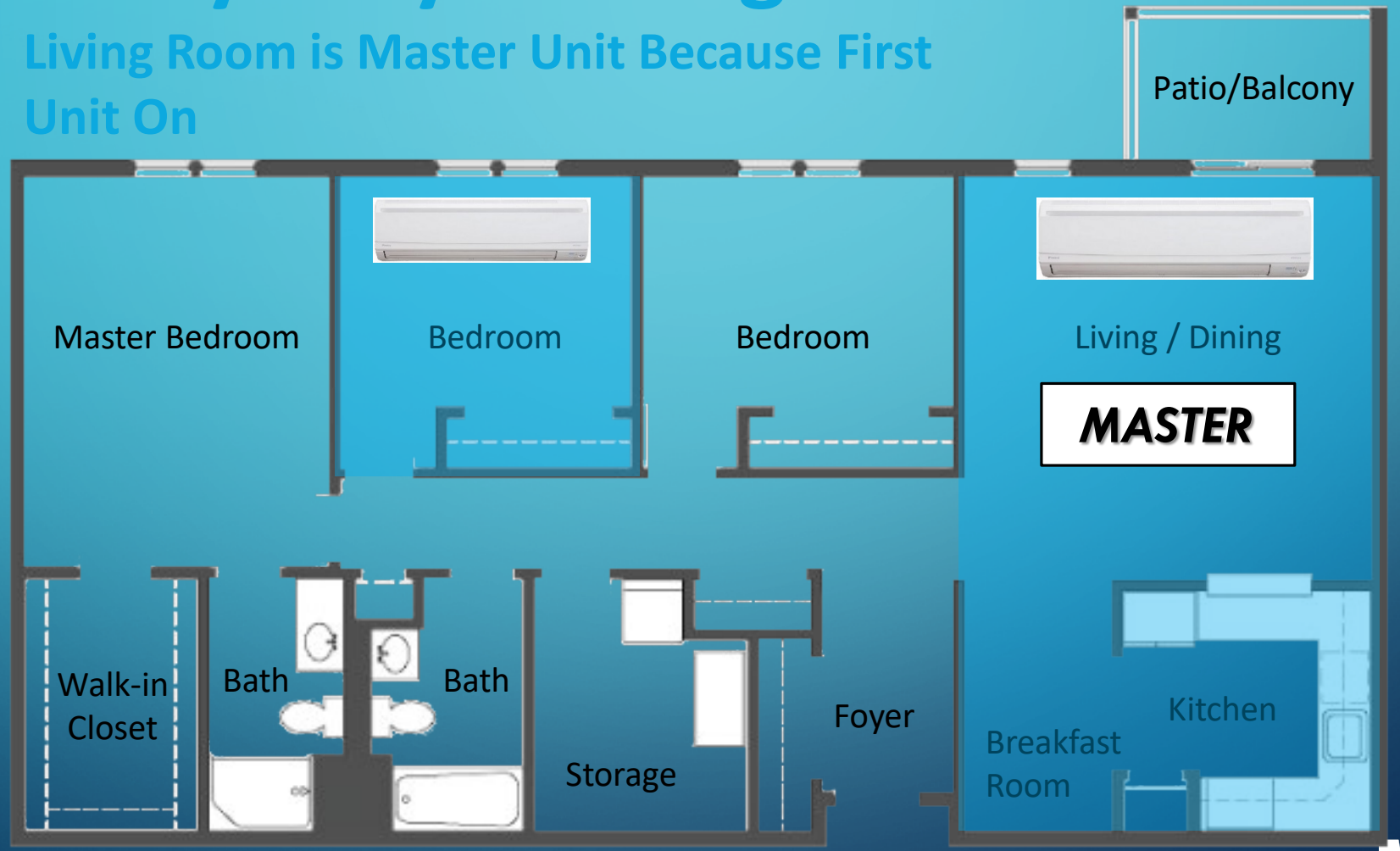
THE MULTI PORT CONCEPT: FLOATING PRIORITY

Everybody Cooling

Living Room is Master Unit Because First Unit On



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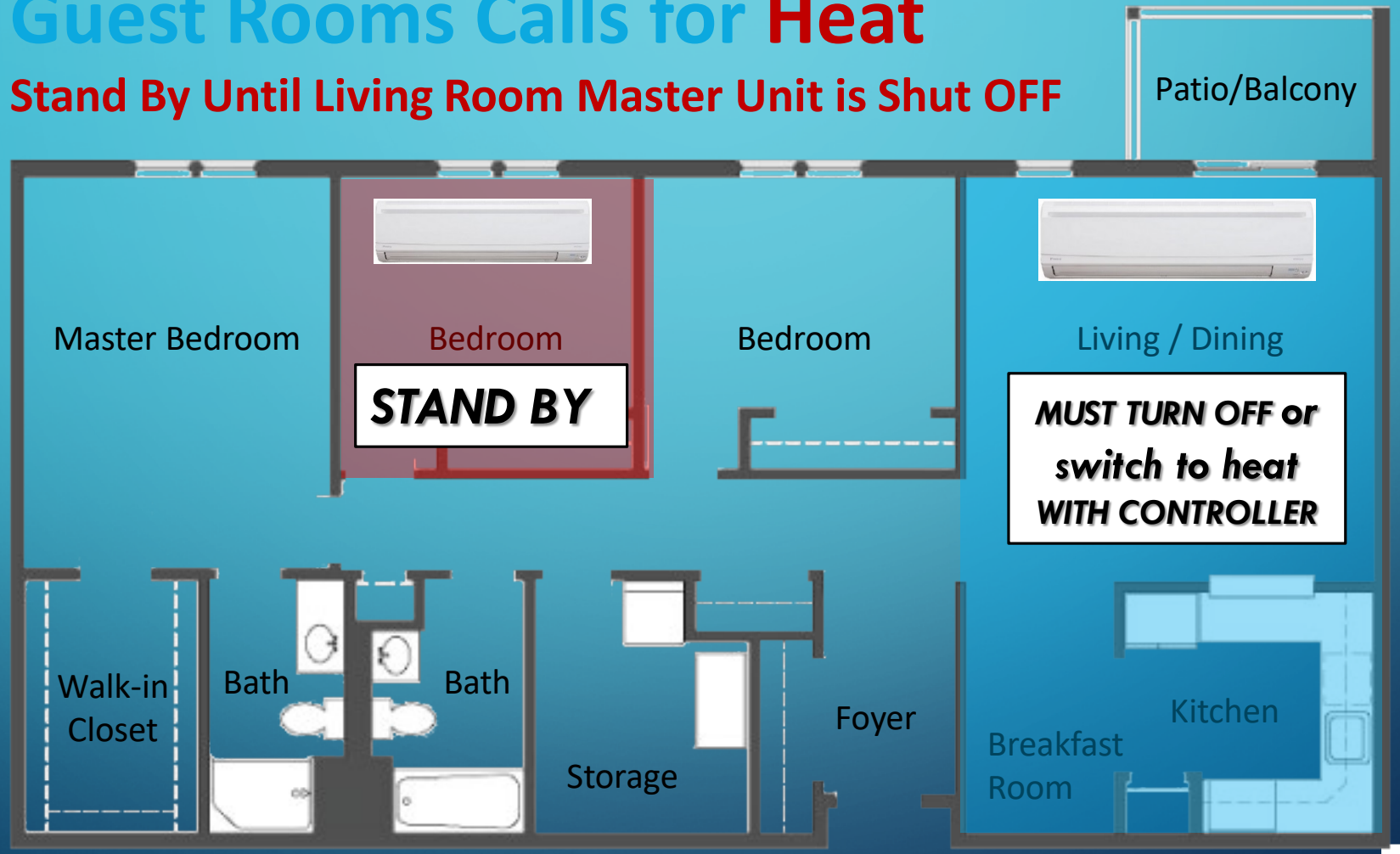
THE MULTI PORT CONCEPT: FLOATING PRIORITY

Guest Rooms Calls for **Heat**

Stand By Until Living Room Master Unit is Shut OFF



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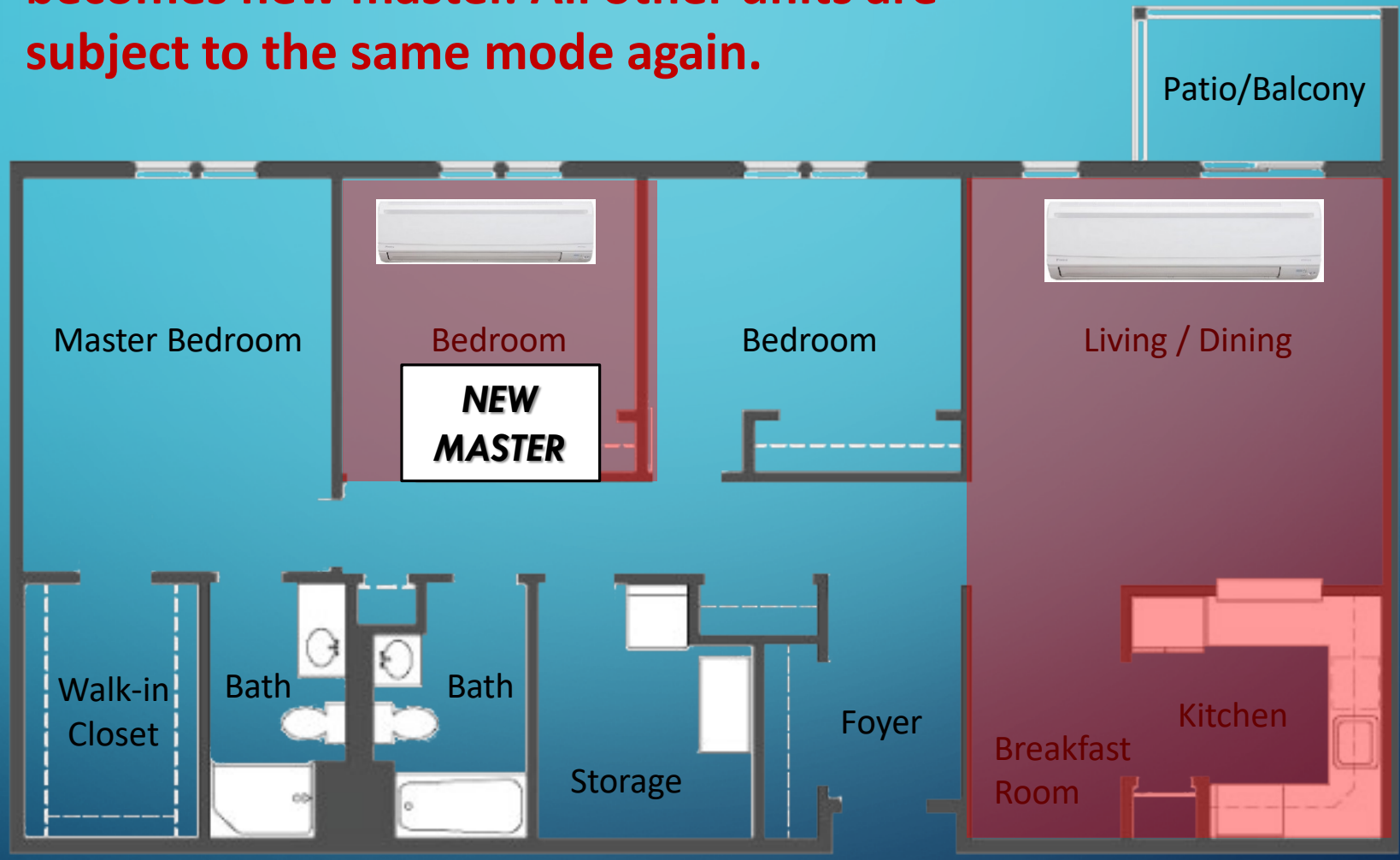
THE MULTI PORT CONCEPT: FIRST COME FIRST SERVE

Once original master is OFF, guest bedroom becomes new master. All other units are subject to the same mode again.



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Multi Port Priority:

How Does it Work?

Option #2 Dedicated Priority

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SETTING PRIORITY

Multi 2, 3, & 4-Port Priority Set Up

- You should choose a Priority Unit during install.
- For 2-Port Multi. Inside outdoor unit on PCB slide A or B dip switch over opposite others.
- For a 3 or 4-Port Multi. Inside outdoor unit on PCB slide A, B, C or D dip switch over opposite others.
- This must be done with power off

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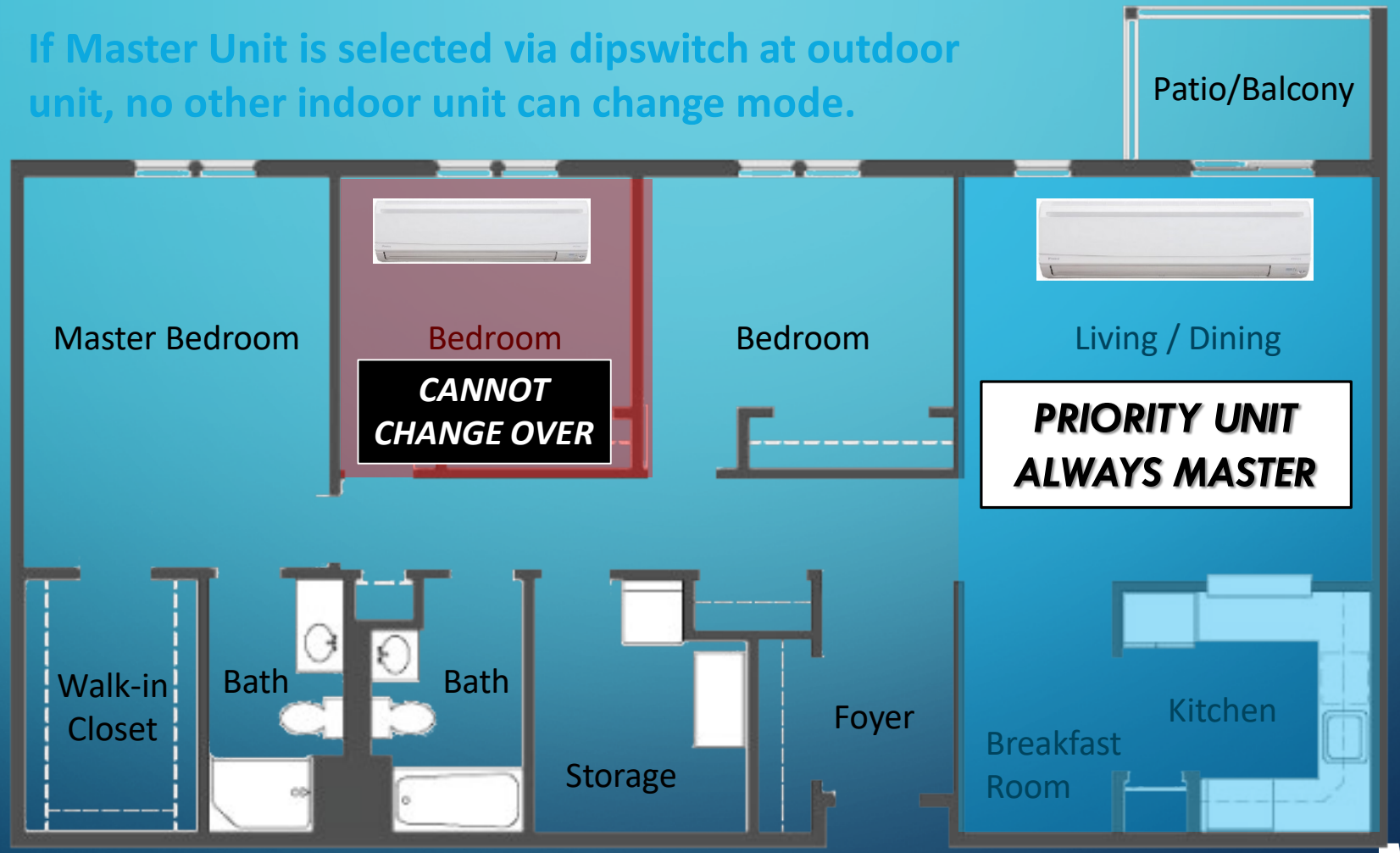
THE MULTI PORT CONCEPT: DEDICATED PRIORITY

Guest Rooms Calls for Heat

If Master Unit is selected via dipswitch at outdoor unit, no other indoor unit can change mode.



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REVIEW QUESTIONS

1. Daikin unlike other manufacturers does not require nitrogen when brazing copper tubing. T or F
2. Daikin allows driers and traps to be used in their line sets. T or F
3. What is the recommended pressure for leak testing?
4. What is the recommended evacuation method?
5. It's acceptable to use 12/4 AWG between the outdoor and indoor units. Because we all know that bigger is better. T or F
6. It is acceptable to break circuit 3 when installing a condensate pump or sensor. T or F
7. Condensate drain line restrictions aren't all that important as long as I maintain a downward pitch. T or F
8. It is acceptable to install the branch box on a wall right out of the box. T or F
9. Piping rules just like the condensate restrictions aren't all that important to follow. T or F

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QUESTIONS?

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