R32 SIDE DISCHARGE ECONOMICAL CENTRAL DUCTED 24VAC UNITARY + RS485 CONTROL

24,000 BTU/H UNITARY HEAT PUMP

SUBMITTAL DATA: TUD24AH2/NhG-D(U) + TUD30-24W2/NhG-D(U)

Job Name	Location		Date	
Purchaser	Engineer			
Submitted To	For	☐ Reference	☐ Approval	☐ Construction
Unit Designation	Schedule No.			

AHRI CERTIFIED REF	**218330465**
ENERGY STAR NUMBER	**4585309**

Operating Range	
Cooling	5 ~ 118°F / -15 ~ 54 ℃
Heating	5 ~ 75°F / -15 ~ 24 ℃





TWK-010WC1
(Optional)

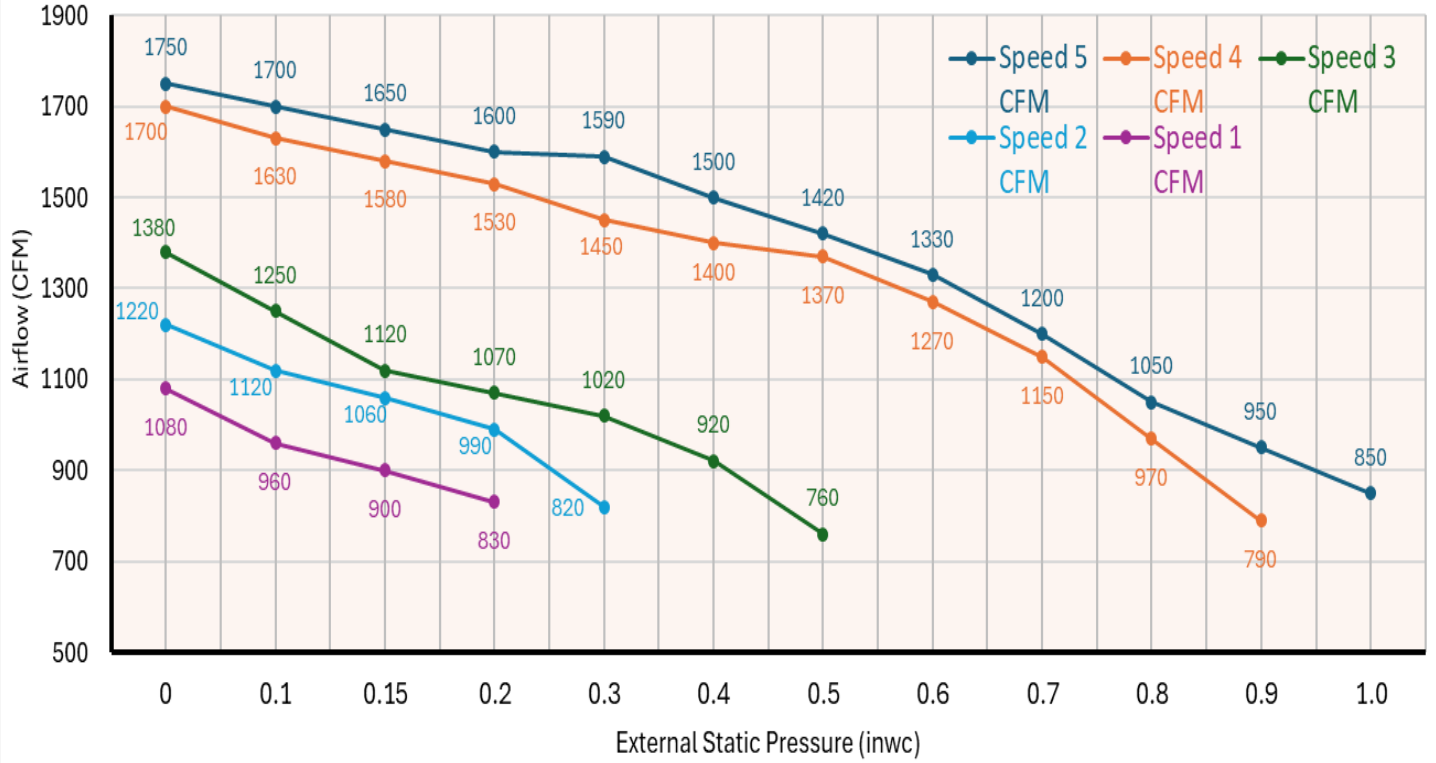


SYSTEM PERFORMANCE			
Cooling	Rated Capacity @ 95°F	Btu/h	24,000
	Min-Max Capacity	Btu/h	12,000 – 26,400
	SEER2 / EER2	/	18.5 / 11.7
Heating	Rated Capacity @ 47°F	Btu/h	24,000
	Rated Capacity @ 17°F	Btu/h	19,600
	Rated Capacity @ 5°F	Btu/h	19,000
	Min-Max Capacity	Btu/h	12,000 – 27,000
	HSPF2 (Region IV /V)	/	8.3 / 6.0
	COP @47°F / @5°F	/	3.50 / 1.75
INDOOR UNIT			
Power Ssupply		VAC	208-230V / 1Ph / 60Hz
Rated Air Flow Volume		CFM	800
Static Pressure (Rated / Maximum)		in w.c	0.5 / 1.0
Sound Pressure Level (Cooling / Heating)		dB(A)	47 / 47
Condensate Drain Size (OD)		In	ϕ1.0 x 0.05
Unit Dimension (WxHxD)		In	18-1/8 x 43-1/2 x 21-1/4
Package Dimension (WxHxD)		In	20-5/8 x 45-5/8 x 26
Weight (Net / Gross)		Lbs	136 / 145
Electric Heater (Optional)		kW	5, 8
OUTDOOR UNIT			
Compressor Type			Twin Rotary, 1 stage, Inverter
Sound Pressure Level		dB(A)	56 (50 – 56)
Unit Dimension (WxHxD)		in	39-3/8 x 29-3/8 x 14-9/16
Package Dimension (WxHxD)		in	42-1/2 × 31-1/2 × 19
Weight (Net / Gross)		lbs	114 / 123
Refrigerant Charge – R32		oz / lbs	67.0 / 4.19
Coil Type (Golden Fin)			Copper Tube / Aluminum Fin
REFRIGERANT PIPING			
Line Set Size (Liquid - Gas)		in	3/8 - 3/4
Pre-Charge Lengh		ft	25
Additional Charge		oz/ft	0.22
Pipe Length (Min - Max)		ft	10 – 100
Max. Pipe Elevation		ft	50
ELECTRICAL			
Power Supply			208/230V / 1Ph / 60 Hz
Outdoor Unit	Rated Current (Cooling / Heating)	A	11.6 / 11.6
	MCA / MOCP	A	21.6 / 25.0
Indoor Unit	Rated Current (Cooling / Heating)	A	1.6 / 1.5
	MCA / MOCP	A	4.7 / 15.0
Main Power Wire Size		AWG	Size Per Local Code
LIMITED WARRANTY	10 Year Parts, 10 Years Compressor - Residential & Commercial		

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FEATURES: TUD24AH2/NhG-D(U)

FAN PERFORMANCE



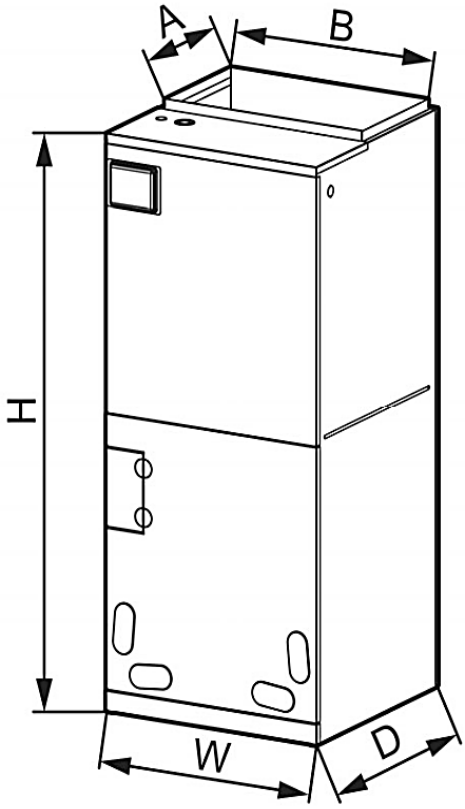
CFM \ ESP	0 inwc	0.1 inwc	0.15 inwc	0.2 inwc	0.3 inwc	0.4 inwc	0.5 inwc	0.6 inwc	0.7 inwc	0.8 inwc	0.9 inwc	1.0 inwc
Speed 5	1750	1700	1650	1600	1590	1500	1420	1330	1200	1050	950	850
Speed 4	1700	1630	1580	1530	1450	1400	1370	1270	1150	970	790	
Speed 3 (Default)	1380	1250	1120	1070	1020	920	760					
Speed 2	1220	1120	1060	990	820							
Speed 1	1080	960	900	830								

1. Above chart CFM ratings are based on the dry coil with factory filter installed
2. For wet coil CFM ratings, multiply the CFM by 0.96 correction factor
3. The figure with underline indicates not turn on auxiliary heat-kit

SYSTEM FEATURES	
Outdooor Electronic Expansion Valve (EEV)	YES
Indoor EEV Control	YES
Compressor + Base pan With Electric Heater	YES
Intelligent Preheating	YES
Memory/Power Failure Recovery	YES
Intelligent Preheating	YES
Outdoor Unit Low Noise Control	YES, each level lower around 2dB(A)
Communication Protocol	RS485, 24Vac

DIMENSIONS : TUD24AH2/NhG-D(U) + TUD30-24W2/NhG-D(U)

Indoor Unit



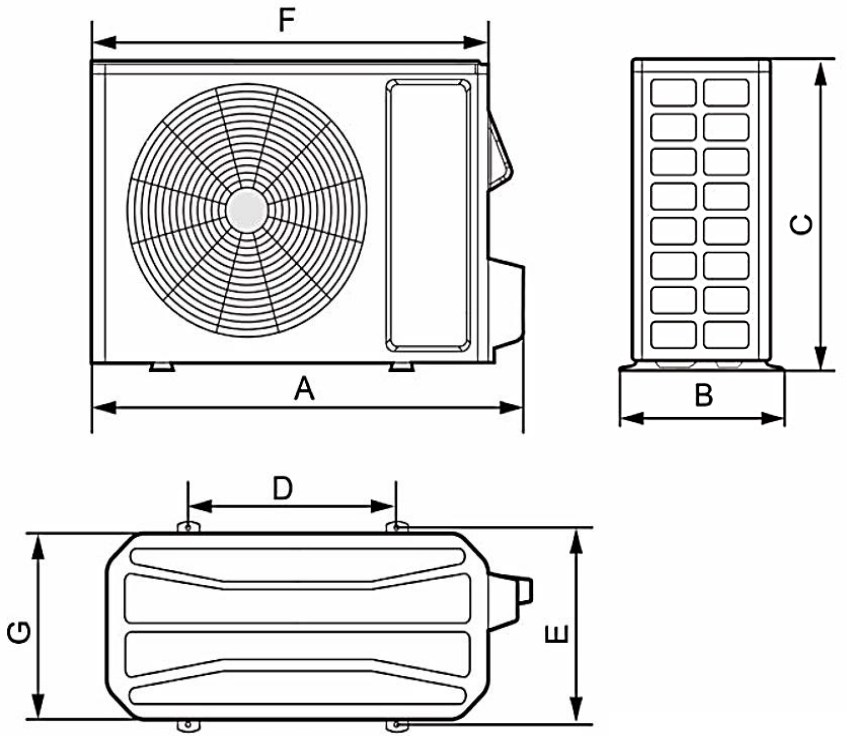
Unit: inch

Model	Dimension				
	W	D	H	A	B
TUD24AH2/NhG-D(U) TUD30AH2/NhG-D(U)	18-1/8	21-1/4	43-1/2	11-5/8	16-3/4
TUD36AH2/NhG-D(U)	21-1/4	21-1/4	48-3/16	11-5/8	20
TUD48AH2/NhG-D(U) TUD60AH2/NhG-D(U)	24-13/16	21-1/4	52	11-5/8	20

Filter Size	
Supplied*	19 1/4 x 20 1/4 x 1/2
Suggested	19 1/4 x 20 1/4 x 1

*Supplied filter is metal mesh mainly for protection

Outdoor Unit

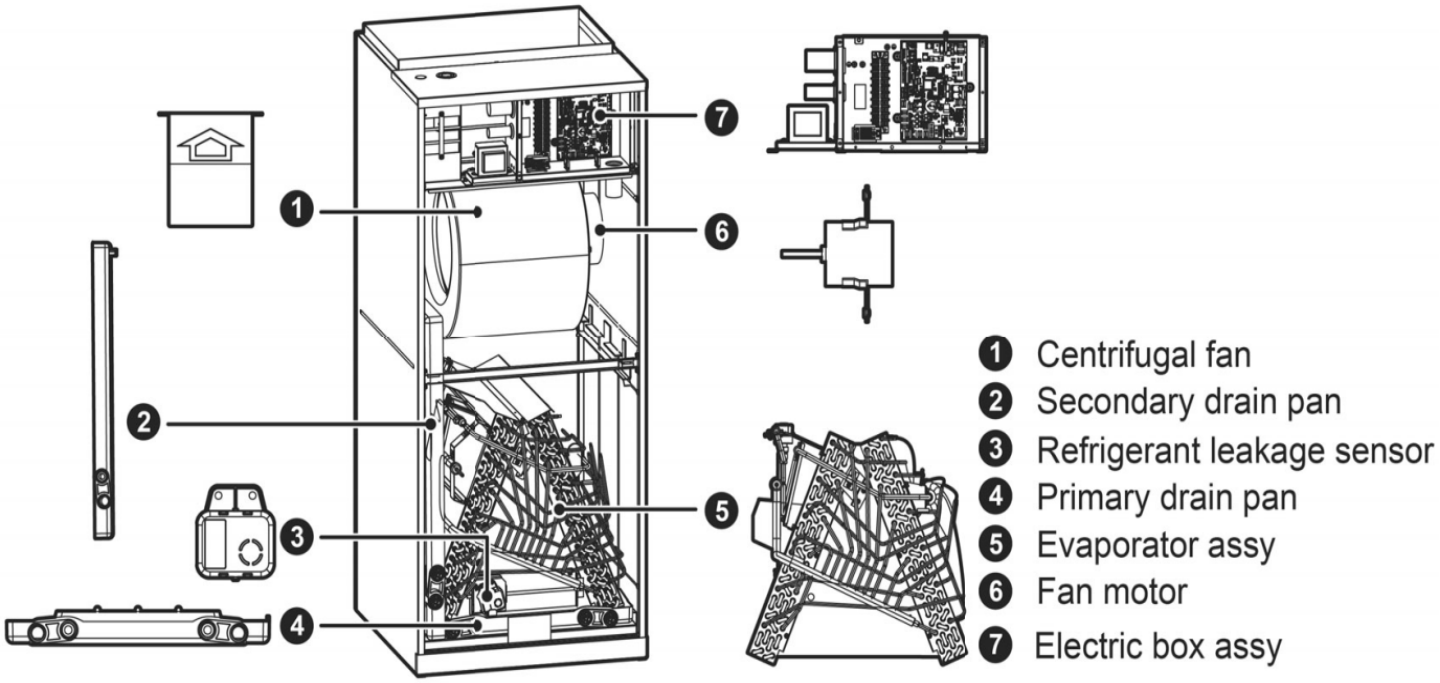


Unit: inch

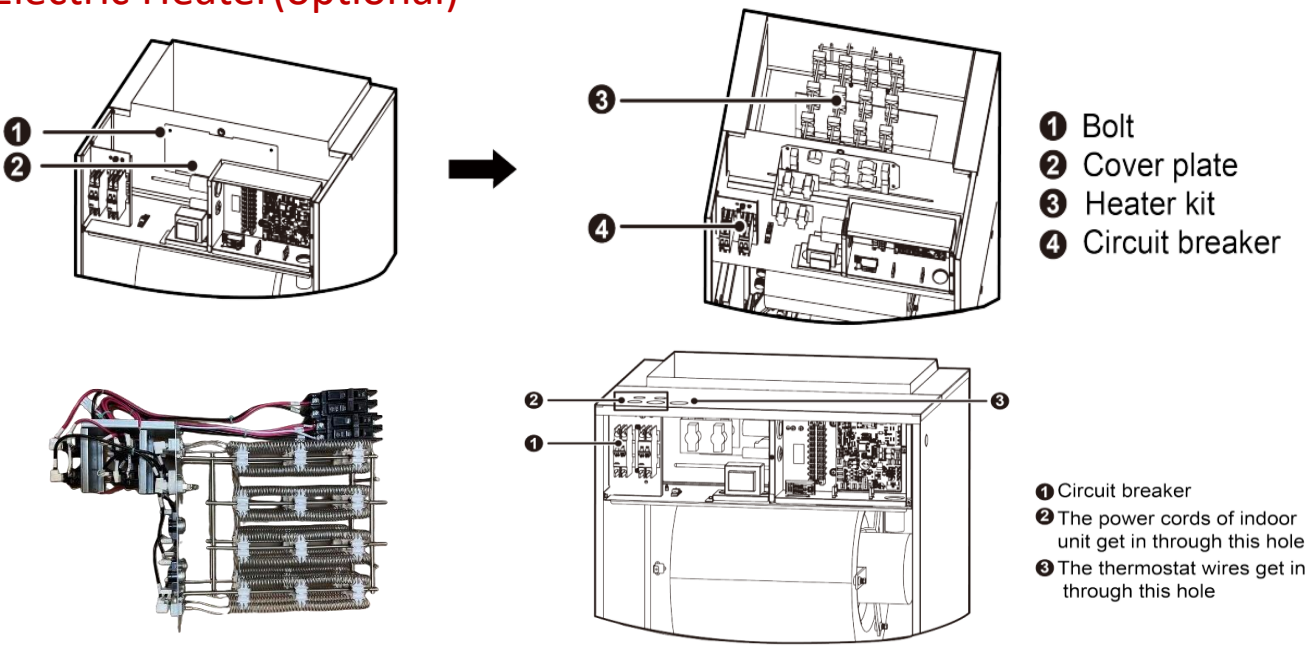
Dimensions	Value
A	39-3/8
B	16-13/16
C	29-3/8
D	24
E	15-9/16
F	36-1/4
G	14-9/16

INTERNAL PARTS & OPTIONAL ELECTRIC HEATER: TUD24AH2/NhG-D(U)

Parts



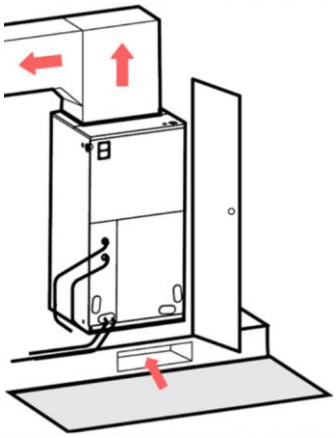
Electric Heater(optional)



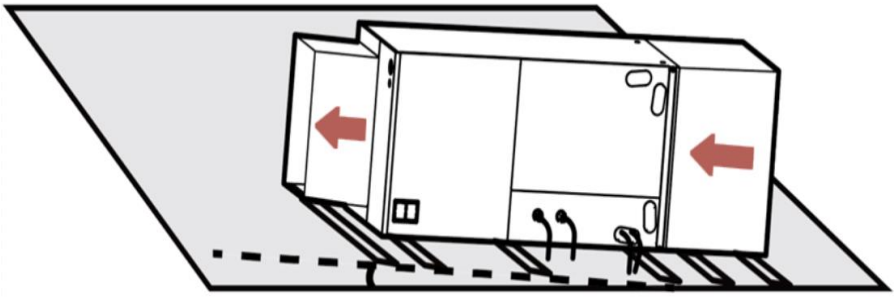
Model	Dimensions WxHxD (inch)	Primary Heating Capacity (BTU)	Weight (lb)	Electric Heat (kW)		Min. Circuit (A)		Max.Fuse or Breaker Ampacity (A)	
				240V	208V	240V	208V	240V	208V
TUD-Heat-5KW	12 x 5 x 17	12,800~17,000	3.3	5	3.76	26.0	22.6	30	25
TUD-Heat-8KW		20,400~27,300	3.5	8	6	41.7	36.0	45	40

INSTALLATION CLEARASNCES: TUD24AH2/NhG-D(U)

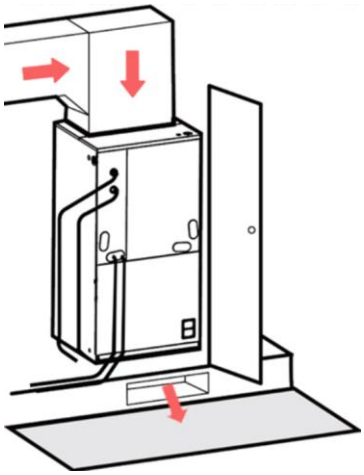
- Vertical Installation
- Horizontal Installation



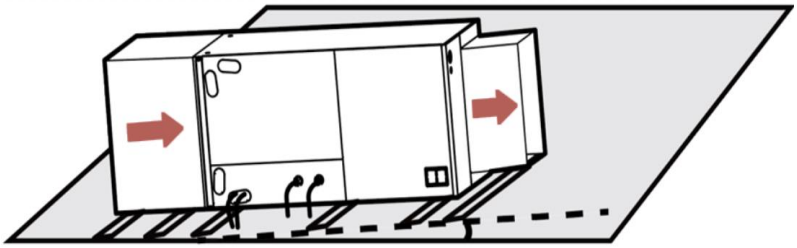
❑ Upflow: No action needed



❑ Airflow Out Left: No action needed



❑ Downflow: reinstall the coil and fan motor, no additional kit required



❑ Airflow Out Right: Must Relocate drain Pan

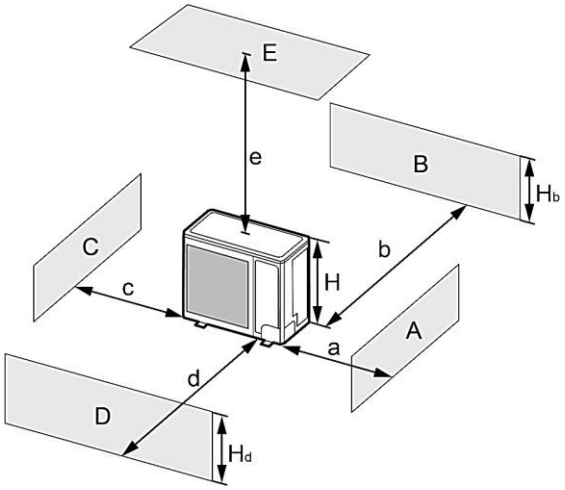
Minimum Clearances	
Front	> 24 inch
Allow a minimum of 24” in front of the unit for service clearance. When installing in an area directly over a finished ceiling (such as an attic), an emergency drain pan is required directly under the unit. **See local codes for requirements.** When installing this unit in an area that may become wet, elevate the unit with a sturdy, non-porous material. In installations that may lead to physical damage (i.e. a garage) it is advised to install a protective barrier to prevent such damage.This air handler is designed for a complete supply and return ductwork system.	
Multi-Position	Upflow, downflow, horizontal left, horizontal right

INSTALLATION CLEARASNCES: TUD30-24W2/NhG-D(U)

Minimum Clearances

Note: The outdoor unit **2inches** above the snow level

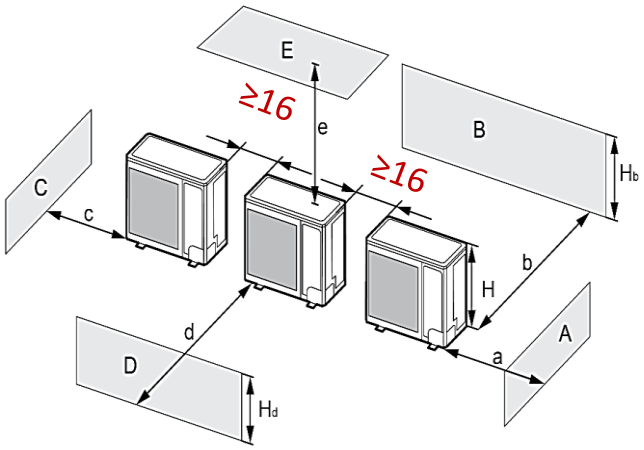
- Install one outdoor unit



Obstacle/Wall A~E	Obstacle/Wall Hb Hd H		Clearance (in)				
			A	b	c	d	e
B	—		-	⩾4	-	-	-
A,B,C,	—		⩾12	⩾4	⩾4	-	-
B,E	—		-	⩾4	-	-	⩾40
A,B,C,E	—		⩾12	⩾6	⩾6	-	⩾40
A,C,E	—		⩾8	-	⩾20	-	⩾10
D	—		-	-	-	⩾40	-
D,E	—		-	-	-	⩾40	⩾40
B,D	Hb < Hd	Hd > H	-	⩾4	-	⩾40	-
	Hb > Hd	Hd < H	-	⩾4	-	⩾40	-
B,D,E	Hb < Hd	Hb⩽1/2H	-	⩾10	-	⩾80	⩾40
		1/2H < Hb⩽H	-	⩾10	-	⩾80	⩾40
		Hb > H	Prohibited				
	Hb > Hd	Hd⩽1/2H	-	⩾4	-	⩾80	⩾40
		1/2H < Hd⩽H	-	⩾8	-	⩾80	⩾40
		Hd > H	Prohibited				

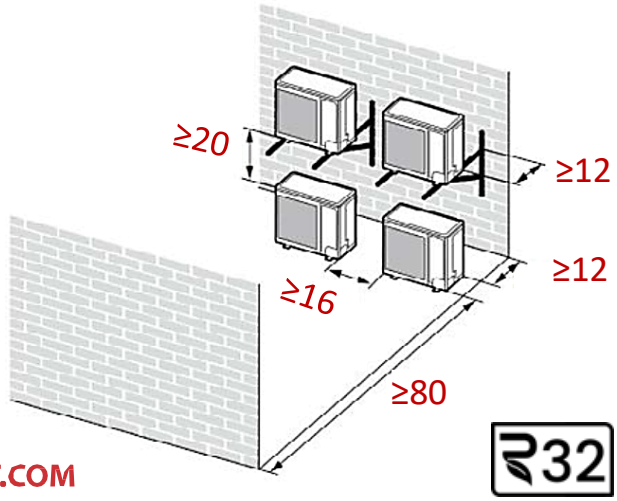
- Install two or more outdoor units

1. Outdoor units are installed side by side



Obstacle/Wall A~E	Obstacle/Wall Hb Hd H		Minimum Clearance (in)				
			A	b	c	d	e
A,B,C	—		⩾12	⩾12	⩾40	—	—
A,B,C,E	—		⩾12	⩾12	⩾40	—	⩾40
D	—		—	—	—	⩾80	—
D,E	—		—	—	—	⩾80	⩾40
B,D	Hb < Hd	Hd > H	—	⩾12	—	⩾80	—
	Hb > Hd	Hd < 1/2H	—	⩾10	—	⩾80	—
		1/2H < Hd⩽H	—	⩾12	—	⩾100	⩾40
B,D,E	Hb < Hd	Hb⩽1/2H	—	⩾12	—	⩾80	⩾40
		1/2H < Hb⩽H	—	⩾12	—	⩾100	
		Hb > H	Prohibited				
	Hb > Hd	Hd⩽1/2H	—	⩾10	—	⩾100	⩾40
		1/2H < Hd⩽H	—	⩾12	—	⩾100	⩾40
		Hd > H	Prohibited				

2. Outdoor units are installed one above another



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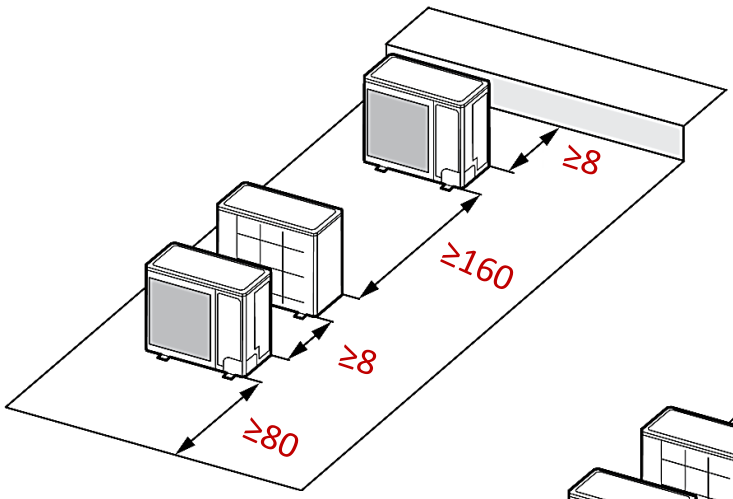
R32 CEE Consortium for Energy Efficiency INVERTER Intertek AHRI CERTIFIED ENERGY STAR

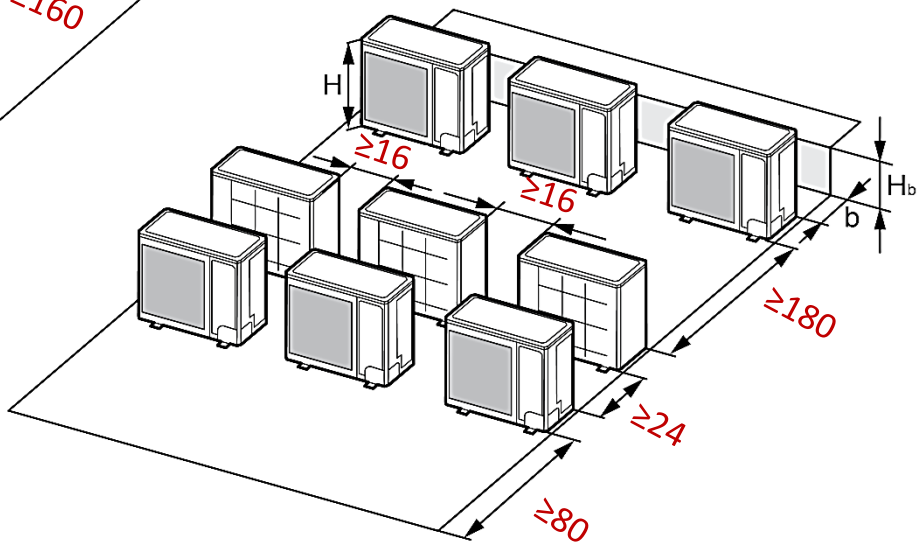
INSTALLATION CLEARASNCES: TUD30-24W2/NhG-D(U)

Minimum Clearances
Note: The outdoor unit **2inches** above the expected snow level

3. Outdoor units are installed in rows

Obstacle/Wall H_b, H_d	Clearance (in)
$H_b \leqslant 1/2H$	$b \leqslant 10$
$1/2H < H_b \leqslant H$	$b \leqslant 12$
$H_b > H_d$	Prohibited





For the narrow space cannot guarantee the front clearance, requires to apply the below wind baffle to change the air flow direction



After installed



Wind baffle (field supplied)