UNITARY SIDE DISCHARGE SPLIT SYSTEM 24VAC CONTROL

24,000 BTU / H UNITARY HEAT PUMP SPLIT SYSTEM

SUBMITTAL DATA: TUD24-24AH2ADU / TU36-24WADU

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

SYSTEM TYPE:
HEAT PUMP



TU36-24WADU



TUD24-24AH2ADU

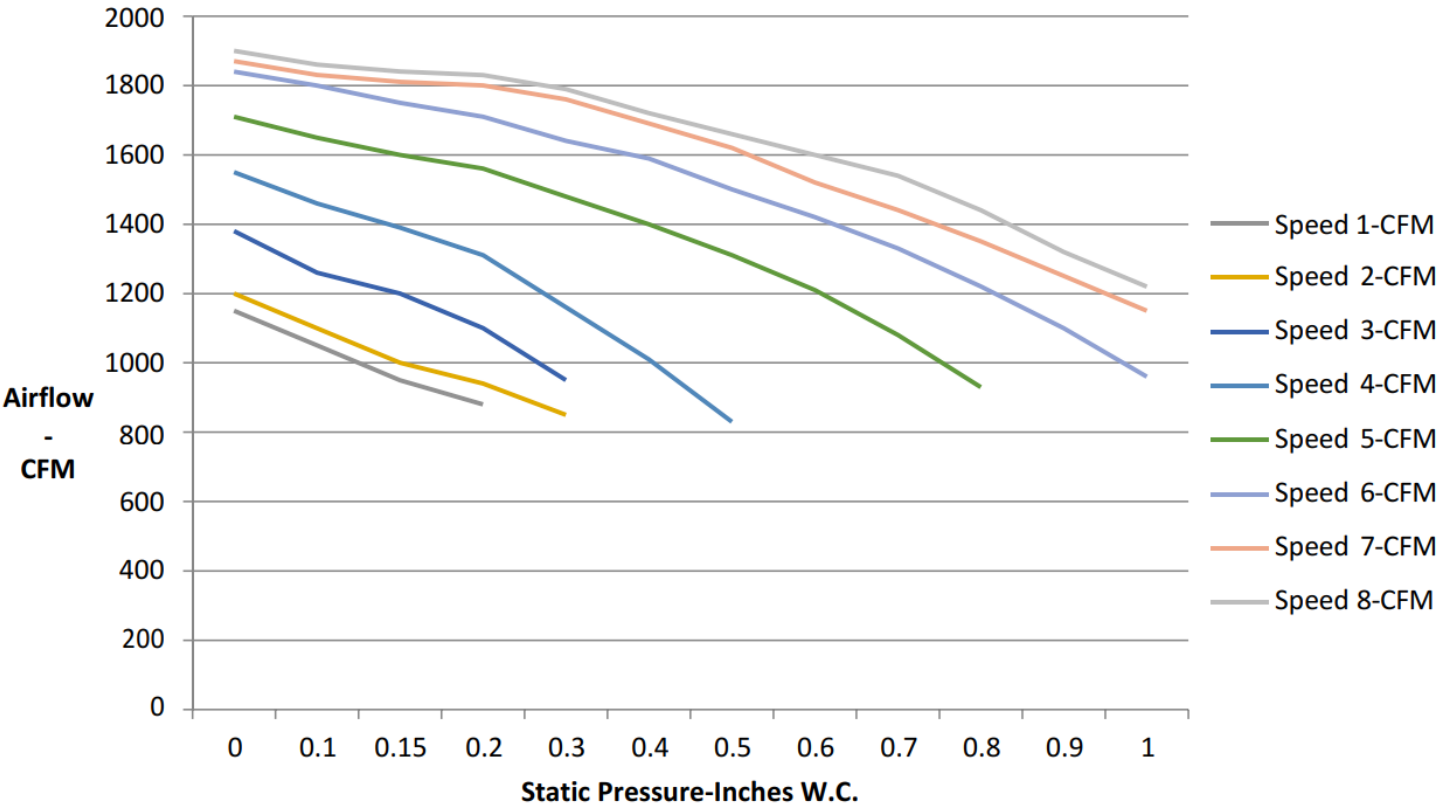
GENERAL FEATURES

- High Efficiency DC Inverter Technology
- Compact and Quiet 52 dB(A) Side Discharge Outdoor Unit
- Zero Lot Line Design
- Match with TOSOT or Competitive Indoor Unit
- Designed for New Construction or Replacement Market
- 24VAC Thermostat Compatible
- 8 Speed Fan Motor
- Low Ambient Cooling down to 5°F(-15°C)
- Low Ambient Heating down to -22°F(-30°C)
- Outdoor Coil has Copper Tube/Aluminum Fin with Acetal-Resin Coating (Golden Fin – 1,500Hr Salt Spray Rating)
- Indoor Coil has Copper Tube/Aluminum Fin with Acetal-Resin Coating (Blue Fin - 500Hr Salt Spray Rating)

SYSTEM PERFORMANCE				
Cooling	Rated Capacity @ 95°F		Btu/h	24,000
	Min-Max Capacity		Btu/h	12,000 – 24,000
Heating	Rated Capacity @ 47°F		Btu/h	24,000
	Rated Capacity @ 17°F		Btu/h	18,000
	Min-Max Capacity		Btu/h	12,000 – 30,000
SEER / EER				20 / 12.5
HSPF / COP				10.5 / 4.2
SEER2 / EER2				17 / 12
HSPF2				9
AHRI Number				206414272
Cooling Temperature Range			°F/°C	5 ~ 129 / -15 ~ 54
Heating Temperature Range			°F/°C	-22 ~ 75 / -30 ~ 24
INDOOR UNIT				**TUD24-24AH2ADU**
Fan Motor Output Power			W	373
Fan Motor FLA			A	3
Air Flow (Min - Max)			CFM	1,000
Static Pressure (Rated / Maximum)			In w.c	0.15 / 1.0
Sound Pressure Level (Cooling / Heating)			dB(A)	47
Dehumidification			pt/hr	9.68
Condensate Drain Size (OD)			in	3 / 4
Unit Dimension (WxHxD)			in	21 1/4 x 48 1/4 x 21 1/4
Package Dimension (WxHxD)			in	26 x 50 7/16 x 23 3/4
Weight (Net / Gross)			lbs	156 / 169
Electric Heater (Optional)			kW	5, 8, 10, 15
OUTDOOR UNIT				**TU36-24WADU**
Compressor Type				Inverter Rotary
Compressor RLA			A	16
Fan Motor Output Power (2)			W	149
Fan Motor (2)			A	1.5
Sound Pressure Level (Cooling / Heating)			dB(A)	52 (45 - 56)
Unit Dimension (WxHxD)			in	32 1/4 x 37 x 18 1/8
Package Dimension (WxHxD)			in	38 3/8 × 42 11/16 × 22 9/16
Weight (Net / Gross)			lbs	217 / 240
Refrigerant Charge - R410A			oz	148
Coil Type (Blue Fin)				Copper Tube / Aluminum Fin
REFRIGERANT PIPING				
Line Set Size (Liquid - Gas)			in	3/8 - 3/4
Pre-Charge Lengh			ft	31
Additional Charge			oz/ft	0.32
Pipe Length (Min - Max)			ft	10 – 98
Max. Pipe Elevation			ft	49
ELECTRICAL				
Power Supply				208/230V / 1Ph / 60 Hz
Outdoor Unit	Rated Current (Cooling / Heating)		A	21 / 25
	MCA / MOCP		A	24 / 35
Indoor Unit	Rated Current (Cooling / Heating)		A	3 / 3
	MCA / MOCP		A	4 / 15
Main Power Wire Size			AWG	Size Per Local Code
LIMITED WARRANTY	10 Year Parts, 10 Years Compressor - Residential & Commercial			

TOSOT

FAN PERFORMANCE: TUD24-24AH2ADU



Static Pressure Inches W.C.	0	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Speed 1-CFM	1030	900	840									
Speed 2-CFM	1080	960	900	840								
Speed 3-CFM	1220	1120	1060	990	850							
Speed 4-CFM	1390	1290	1240	1180	1070	960						
Speed 5-CFM	1580	1490	1440	1390	1290	1180	1090	970	830			
Speed 6-CFM	1720	1640	1600	1550	1450	1360	1250	1130	960			
Speed 7-CFM	1800	1730	1680	1630	1550	1460	1370	1270	1150	970	830	
Speed 8-CFM	1850	1820	1790	1740	1660	1580	1500	1410	1340	1200	1080	930

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EXTENDED RATINGS: TUD24-24AH2ADU / TU36-24WADU

COOLING PERFORMANCE

Outdoor Ambient Temperature (DB)		Return Air Temperature																			
		70°F (DB) / 59°F (WB)					75°F (DB) / 63°F (WB)					80°F (DB) / 67°F (WB)					90°F (DB) / 73°F (WB)				
		TC (Btu/h)	SC (Btu/h	SHR	EER	Power Input (W)	TC (Btu/h)	SC (Btu/h	SHR	EER (Btu/ (h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h	SHR	EER (Btu/ (h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h	SHR	EER (Btu/ (h·W))	Power Input (W)
MAX OUTPUT*	5°F	20400	16023	78.54%	20.40	1000	22200	17551	79.02%	21.14	1050	24000	19078	79.49%	21.82	1100	25300	20178	79.75%	21.94	1153
	10°F	20400	16052	78.69%	19.81	1030	22200	17569	79.10%	20.56	1080	24000	19085	79.52%	21.24	1130	25300	20185	79.78%	21.39	1183
	15°F	20400	16125	79.04%	19.07	1070	22200	17569	79.13%	19.91	1115	24000	19012	79.22%	20.69	1160	25300	20112	79.49%	20.86	1213
	20°F	20400	16098	78.91%	18.38	1110	22200	17565	79.11%	19.30	1150	24000	19032	79.30%	20.17	1190	25300	20132	79.57%	20.35	1243
	25°F	20400	16256	79.69%	17.74	1150	22200	17695	79.71%	18.73	1185	24000	19134	79.73%	19.67	1220	25300	20234	79.98%	19.87	1273
	30°F	20400	16012	78.49%	17.29	1180	22200	17534	78.95%	18.27	1215	24000	19056	79.40%	19.20	1250	25300	20156	79.67%	19.42	1303
	35°F	20400	16103	78.94%	16.86	1210	22200	17612	79.30%	17.83	1245	24000	19120	79.67%	18.75	1280	25300	20220	79.92%	18.98	1333
	40°F	20400	16065	78.75%	16.32	1250	22200	17558	79.06%	17.34	1280	24000	19050	79.38%	18.32	1310	25300	20150	79.64%	18.56	1363
	45°F	20400	16203	79.43%	15.81	1290	22200	17667	79.57%	16.88	1315	24000	19130	79.71%	17.91	1340	25300	20230	79.96%	18.16	1393
	50°F	20400	16014	78.50%	15.45	1320	22200	17427	78.50%	16.51	1345	24000	18840	78.50%	17.52	1370	25300	19940	78.81%	17.78	1423
	55°F	20400	16158	79.21%	15.11	1350	22200	17604	79.29%	16.17	1372.5	24000	19050	79.38%	17.20	1395	25300	20150	79.64%	17.47	1448
	60°F	20400	16243	79.62%	14.84	1375	22200	17682	79.64%	15.89	1397.5	24000	19120	79.67%	16.90	1420	25300	20220	79.92%	17.18	1473
	65°F	20400	16320	80.00%	14.57	1400	22200	17760	80.00%	15.58	1425	24000	19200	80.00%	16.55	1450	25300	20300	80.24%	16.83	1503
	70°F	20400	16219	79.50%	13.97	1460	22200	17697	79.70%	15.05	1475	24000	19175	79.90%	16.11	1490	25300	20275	80.14%	16.40	1543
	75°F	20400	16279	79.80%	13.42	1520	22200	17716	79.80%	14.56	1525	24000	19152	79.80%	15.69	1530	25300	20252	80.05%	15.98	1583
	80°F	20400	16217	79.50%	12.67	1610	22450	17902	79.72%	13.56	1655	24500	19587	79.95%	14.41	1700	25800	20687	80.18%	14.72	1753
	85°F	20400	16218	79.50%	11.93	1710	22700	18047	79.50%	12.68	1790	25000	19875	79.50%	13.37	1870	26300	20975	79.75%	13.68	1923
	90°F	20400	16257	79.69%	11.40	1790	22700	18104	79.75%	11.95	1900	25000	19950	79.80%	12.44	2010	26300	21050	80.04%	12.75	2063
	95°F	20400	16320	80.00%	11.03	1850	22700	18160	80.00%	11.35	2000	25000	20000	80.00%	11.63	2150	26300	21100	80.23%	11.94	2203
	100°F	20400	16245	79.63%	9.76	2090	22450	17873	79.61%	10.37	2165	24500	19500	79.59%	10.94	2240	25800	20600	79.84%	11.25	2293
	105°F	20400	16116	79.00%	9.07	2250	22200	17538	79.00%	9.67	2295	24000	18960	79.00%	10.26	2340	25300	20060	79.29%	10.57	2393
	110°F	20400	16362	80.21%	8.41	2425	22200	17796	80.17%	8.98	2472.5	24000	19230	80.13%	9.52	2520	25300	20330	80.36%	9.83	2573
	115°F	20400	16524	81.00%	7.85	2600	22200	17982	81.00%	8.38	2650	24000	19440	81.00%	8.89	2700	25300	20540	81.19%	9.19	2753
	120°F	20400	16250	79.66%	7.42	2750	22200	17875	80.45%	7.91	2805	24000	19500	81.25%	8.39	2860	25300	20600	81.42%	8.69	2913
	122°F	20400	16283	79.82%	7.06	2890	22200	17802	80.16%	7.51	2955	24000	19321	80.50%	7.95	3020	25300	20421	80.72%	8.23	3073
	125°F	20400	16542	81.09%	6.69	3050	22200	17784	80.18%	7.23	3070	24000	19025	79.27%	7.77	3090	25300	20125	79.55%	8.05	3143
	129°F	20400	16345	80.12%	6.20	3290	22200	17903	80.60%	6.76	3285	24000	19460	81.08%	7.32	3280	25300	20560	81.26%	7.59	3333

*Maximum Output values are not based on AHRI test conditions

LEGEND:	W - Watts
	DB - Dry Bulb
	TC - Total Capacity
	SC - Sensible Capacity
	SHR - Sensible Heat Ratio
	COP - Coeffecient of Performance

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TOSOT

EXTENDED RATINGS: TUD24-24AH2ADU / TU36-24WADU

HEATING PERFORMANCE

Outdoor Ambient Temperature (DB)		Return Air Temperature											
		70°F (DB) / 59°F (WB)			75°F (DB) / 63°F (WB)			80°F (DB) / 67°F (WB)			90°F (DB) / 73°F (WB)		
		TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	SHRPower Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	SHRPower Input (W)
MAX OUTPUT*	-22°F	18700	1.40	3920	18700	1.40	3920	18700	1.40	3920	20000	1.48	3973
	-20°F	20500	1.52	3960	20450	1.51	3960	20400	1.51	3960	21700	1.58	4013
	-15°F	22000	1.61	4000	22000	1.61	4000	22000	1.61	4000	23300	1.68	4053
	-10°F	23000	1.64	4100	23000	1.64	4100	23000	1.64	4100	24300	1.71	4153
	-5°F	24000	1.67	4200	24000	1.67	4200	24000	1.67	4200	25300	1.74	4253
	0°F	24000	1.85	3800	24000	1.85	3800	24000	1.85	3800	25300	1.92	3853
	5°F	24000	2.10	3350	24000	2.10	3350	24000	2.10	3350	25300	2.18	3403
	10°F	24000	2.20	3200	24000	2.20	3195	24000	2.21	3190	25300	2.29	3243
	15°F	24000	2.31	3050	24000	2.31	3045	24000	2.31	3040	25300	2.40	3093
	17°F	24000	2.43	2900	24000	2.43	2900	24000	2.43	2900	25300	2.51	2953
	20°F	24000	2.61	2700	24000	2.61	2700	24000	2.61	2700	25300	2.69	2753
	25°F	24000	2.81	2500	24000	2.81	2500	24000	2.81	2500	25300	2.90	2553
	30°F	24000	3.06	2300	24000	3.06	2300	24000	3.06	2300	25300	3.15	2353
	35°F	24000	3.20	2200	24000	3.20	2200	24000	3.20	2200	25300	3.29	2253
	40°F	24000	3.32	2120	24000	3.32	2120	24000	3.32	2120	25300	3.41	2173
	45°F	24000	3.43	2050	24500	3.50	2050	25000	3.57	2050	26300	3.67	2103
	47°F	26000	3.85	1980	26000	3.85	1980	26000	3.85	1980	27300	3.94	2033
	50°F	26800	3.89	2020	26750	3.89	2015	26700	3.89	2010	28000	3.98	2063
	55°F	27400	3.90	2060	27400	3.91	2055	27400	3.92	2050	28700	4.00	2103
	60°F	28000	3.91	2100	28000	3.91	2100	28000	3.91	2100	29300	3.99	2153
	65°F	28000	3.83	2140	28000	3.95	2080	28000	4.06	2020	29300	4.14	2073
	70°F	28000	3.76	2180	28000	3.96	2070	28000	4.19	1960	29300	4.27	2013
	75°F	28000	3.71	2210	28000	3.99	2055	28000	4.32	1900	29300	4.40	1953
	80°F												
	86°F												

*Maximum Output values are not based on AHRI test conditions

LEGEND:	W - Watts
	DB - Dry Bulb
	TC - Total Capacity
	SC - Sensible Capacity
	SHR - Sensible Heat Ratio
	COP - Coeffecient of Performance

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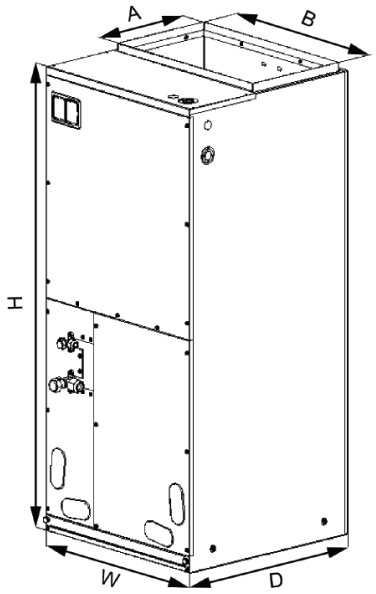
TOSOT

FEATURES SUMMARY: TUD24-24AH2ADU / TU36-24WADU

SYSTEM FEATURES	
Compressor	Inverter
Ultra Low Frequency Torque Control	YES
Power Factor Correction	YES
Compressor Type	Rotary
Refrigerant Type	R410A
Outdooor Electronic Expansion Valve (EEV)	YES
Indoor TXV Control	YES
Basepan With Electric Heater	YES
Compressor With Electric Heater	YES
Fin Coating (Outdoor & Indoor)	Acrylic Resin
Intelligent Defrosting	YES
Intelligent Preheating	YES
Low Voltage Startup	YES
Memory/Power Failure Recovery	YES
Self Diagnosis	YES
Low Ambient Cooling	YES
24VAC Thermostat Compatible	YES
Indoor Fan Type	Centrifugal
Multi Fan Speeds	8 Speeds
Auxiliary Electrical Heater	Optional

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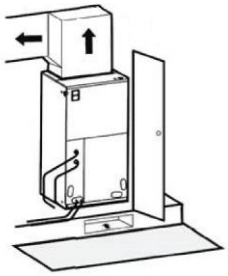
DIMENSIONS & CLEARANCES: TUD24-24AH2ADU

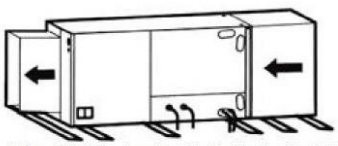


Dimensions	
A	11 5/8
B	20
H	48 1/4
W	21 1/4
D	21 1/4

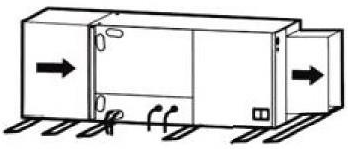
Filter Size	
Supplied*	19 1/4 x 20 1/4 x 1/2
Suggested	19 1/4 x 20 1/4 x 1
*Supplied filter is metal mesh	

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 and state 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 Capabilities	





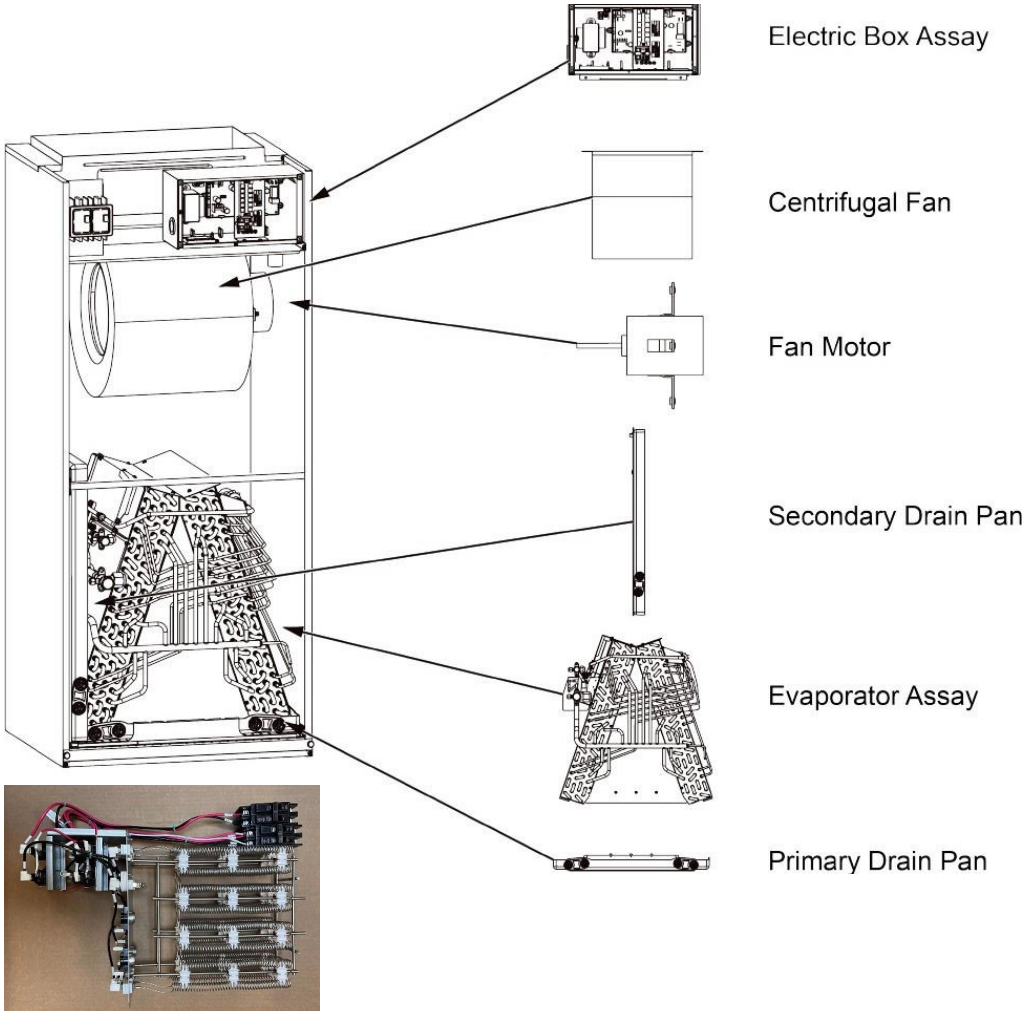
Horizontal Left Configuration - No Modification Needed



Horizontal Right Configuration - Must Relocate Drain Pan

TOSOT

ACCESSORY HEATER AND GENERAL INFORMATION: TUD24-24AH2ADU

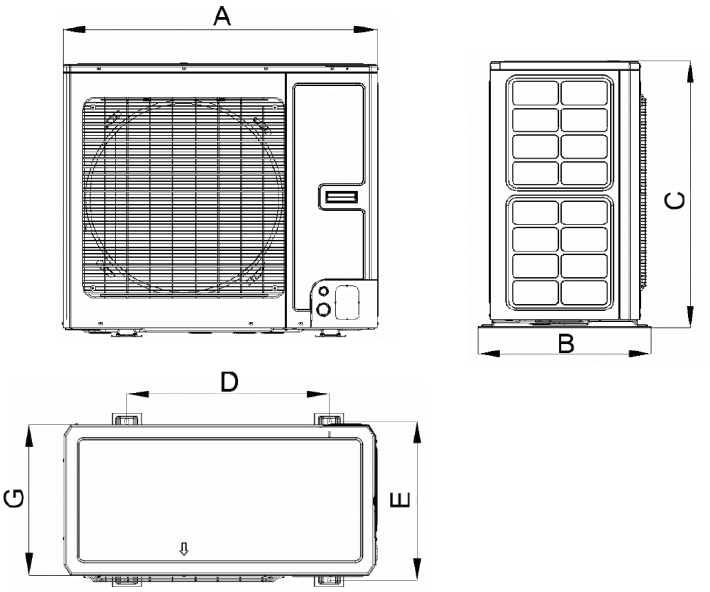


Heat Kit Model	Dimension WxHxL (inch)	Primary Heating Capacity(BTU)	Weight (lbs)	Electric Heat (kw)		Min. Circuit (A)		Max.Fuse or Breaker (A)	
				240V	208V	240V	208V	240V	208V
TUD-Heat Kit-5KW	12 x 5 x 17	12,800~17,000	3.3	5	3.76	26.0	22.6	30	25
TUD-Heat Kit-8KW		20,400~27,300	3.5	8	6	41.7	36.0	45	40
TUD-Heat Kit-10KW		25,600~43,100	3.6	10	7.51	52.0	45.0	60	45
TUD-Heat Kit-15KW	12 x 5 x 19	38,300~51,100	4.4	15	11.25	52 & 26	45 & 22.6	60 & 30	45 & 25

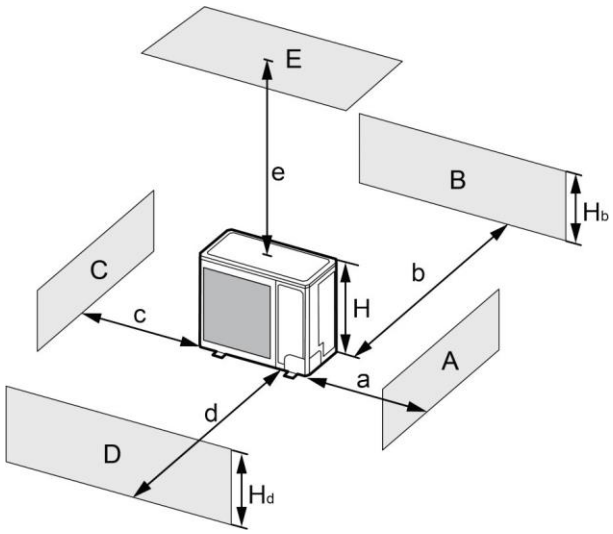
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DIMENSIONS & CLEARANCES: TU36-24WADU



Dimensions	
A	37
B	20 1/8
C	32 1/4
D	24
E	19 1/8
G	18 1/8



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	-	-	⩾10
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	-	⩾200	-	⩾80	⩾40
		Hd > H	Prohibited				

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