ECONOMICAL CENTRAL DUCTED SPLIT SYSTEM 24VAC CONTROL

42,000 BTU/H UNITARY HEAT PUMP SPLIT SYSTEM

SUBMITTAL DATA: TUD42AH2/D-D(U) TUD42W2/D-D(U)

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

SYSTEMTYPE: HEAT PUMP



TUD42W2/D-D(U)



TUD42AH2/D-D(U)

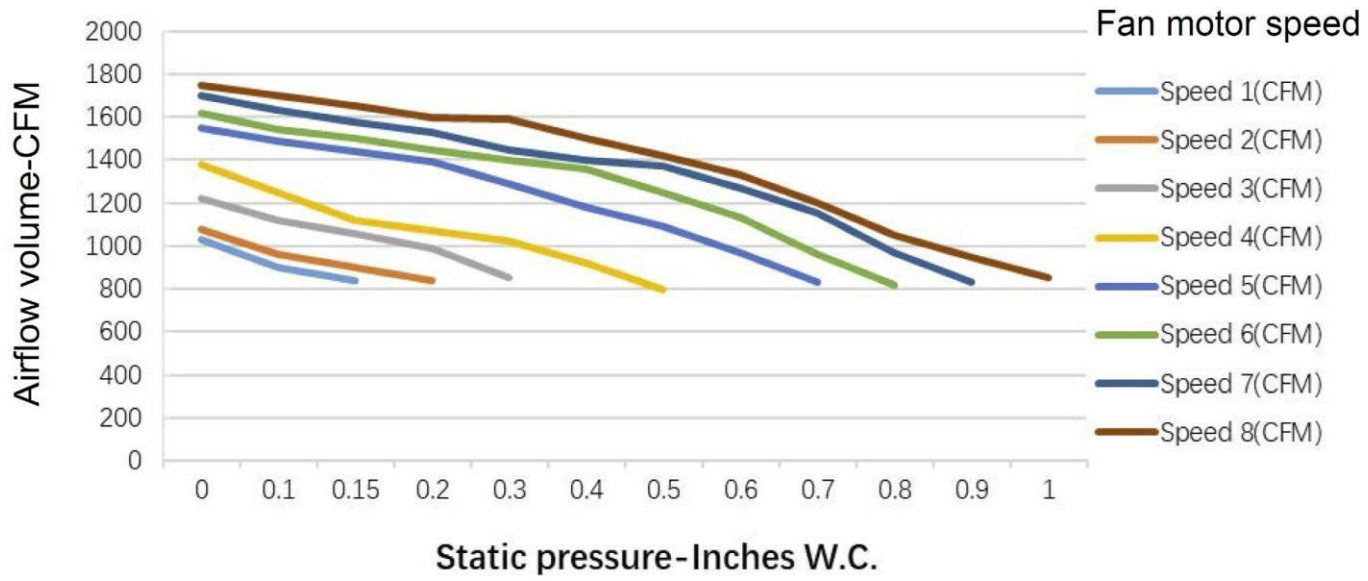
GENERAL FEATURES

- High Efficiency DC Inverter Technology
- Universal 24V communication
- Flexible installation and space saving
- Match with TOSOT or Competitive Indoor Unit
- Designed for New Construction or Replacement Market
- High efficiency airfoil blade, Low noise design
- 8 Speed Fan Motor
- Low Ambient Cooling down to 5°F(-15°C)
- Low Ambient Heating down to 5°F(-15°C)
- Indoor Coil has /Aluminum Fin with Acetal-Resin Coating (Blue Fin - 500Hr Salt Spray Rating)
- Designed for both commercial and residential use

SYSTEM PERFORMANCE			
Cooling	Rated Capacity @ 95°F	Btu/h	40,000
	Min-Max Capacity	Btu/h	10,200-40,000
Heating	Rated Capacity @ 47°F	Btu/h	40,000
	Rated Capacity @ 17°F	Btu/h	25,000
	Min-Max Capacity	Btu/h	9,800-40,000
SEER2 / EER2			15.5 / 10.0
HSPF2 / COP			7.8 / 2.82
AHRI Number			211078856
Cooling Temperature Range		°F / °C	5 – 115 / -15 – 46
Heating Temperature Range		°F / °C	5 – 75 / -15 – 24
INDOOR UNIT			**TUD42AH2/D-D(U)**
Fan Motor Type			ECM
Fan Motor FLA		A	3.40
Air Flow(Rated)		CFM	1,230
Static Pressure (Rated / Maximum)		In w.c	0.1 / 1.0
Sound Pressure Level (Cooling / Heating)		dB(A)	53
Dehumidification		pt/hr	10.33
Condensate Drain Size (OD)		In	3 / 4
Unit Dimension (WxHxD)		In	21 1/4 x 48 3/16 x 21 1/4
Weight (Net / Gross)		lbs	154 / 167
Electric Heater (Optional)		kW	5, 8, 10
Coil Type (Blue Fin)			Copper Tube / Aluminum Fin
OUTDOOR UNIT			**TUD42W2/D-D(U)**
Compressor Type			Inverter Rotary
Compressor RLA		A	16
Fan Motor Type			ECM
Fan Motor Output Power		HP	1/6
Fan Motor		A	2.5
Sound Pressure Level (Cooling / Heating)		dB(A)	62 (58 – 64)
Unit Dimension (WxHxD)		In	37-1/8 x 39-1/2 x 14-9/16
Weight (Net / Gross)		Lbs	152 / 163
Refrigerant Charge - R410A		oz	123.5
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	0.32
Pipe Length (Min - Max)		ft	10 – 164
Max. Pipe Elevation		ft	100
ELECTRICAL			
Power Supply (Voltage Operating Range)			208/230V / 1Ph / 60 Hz
Outdoor Unit	Rated Current (Cooling / Heating)	A	22.0/20.8
	MCA / MOCP	A	26.5 / 40.0
Indoor Unit	Rated Current (Cooling / Heating)	A	1.82 / 1.82
	MCA / MOCP	A	4 / 15
Main Power Wire Size		AWG	Size Per Local Code

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FAN PERFORMANCE: TUD42AH2/D-D(U)



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	1100	1000										
Speed 2-CFM	1300	1200	1100	1010								
Speed 3-CFM	1380	1260	1200	1100	950							
Speed 4-CFM	1710	1650	1600	1560	1480	1400	1230	1150	1080			
Speed 5-CFM	1775	1725	1675	1635	1560	1495	1405	1315	1205	1075		
Speed 6-CFM	1840	1800	1750	1710	1640	1590	1500	1420	1330	1220	1080	900
Speed 7-CFM	1870	1830	1810	1800	1760	1690	1620	1520	1440	1350	1250	1150
Speed 8-CFM	1900	1860	1840	1830	1790	1720	1650	1550	1470	1380	1280	1180

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FEATURES SUMMARY: TUD42AH2/D-D(U) TUD42W2/D-D(U)

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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EXTENDED RATINGS: TUD42AH2/D-D(U) TUD42W2/D-D(U)

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)				
		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)
MAX OUTPUT*	5°F	34,000	23,800	70%	11.41	2,980	37,000	25,900	70%	12.27	3,015	40,000	28,000	70%	13.11	3,050
	10°F	34,000	23,800	70%	11.22	3,030	37,000	25,900	70%	12.07	3,065	40,000	28,000	70%	12.90	3,100
	15°F	34,000	23,800	70%	11.18	3,040	37,000	25,900	70%	12.03	3,075	40,000	28,000	70%	12.86	3,110
	20°F	34,000	23,800	70%	11.15	3,050	37,000	25,900	70%	11.99	3,085	40,000	28,000	70%	12.82	3,120
	25°F	34,000	23,800	70%	11.11	3,060	37,000	25,900	70%	11.95	3,095	40,000	28,000	70%	12.78	3,130
	30°F	34,000	23,800	70%	11.07	3,070	37,000	25,900	70%	11.92	3,105	40,000	28,000	70%	12.74	3,140
	35°F	34,000	23,800	70%	11.00	3,090	37,000	25,900	70%	11.84	3,125	40,000	28,000	70%	12.66	3,160
	40°F	34,000	23,800	70%	10.93	3,110	37,000	25,900	70%	11.76	3,145	40,000	28,000	70%	12.58	3,180
	45°F	34,000	23,800	70%	10.86	3,130	37,000	25,900	70%	11.69	3,165	40,000	28,000	70%	12.50	3,200
	50°F	34,000	23,800	70%	10.76	3,160	37,000	25,900	70%	11.58	3,195	40,000	28,000	70%	12.38	3,230
	55°F	34,000	23,800	70%	10.66	3,190	37,000	25,900	70%	11.47	3,225	40,000	28,000	70%	12.27	3,260
	60°F	34,000	23,800	70%	10.56	3,220	37,000	25,900	70%	11.37	3,255	40,000	28,000	70%	12.16	3,290
	65°F	34,800	24,700	71%	10.71	3,250	37,400	26,350	70%	11.39	3,285	40,000	28,000	70%	12.05	3,320
	70°F	36,490	25,940	71%	11.13	3,280	38,745	27,370	71%	11.69	3,315	41,000	28,811	70%	12.24	3,350
	75°F	37,380	26,640	71%	10.96	3,410	39,690	28,170	71%	11.52	3,445	42,000	29,703	71%	12.07	3,480
	80°F	38,270	27,250	71%	10.90	3,510	40,635	28,790	71%	11.46	3,545	43,000	30,332	71%	12.01	3,580
	85°F	36,000	25,700	71%	9.84	3,660	38,000	27,070	71%	10.28	3,695	42,000	29,855	71%	11.44	3,670
	90°F	36,000	25,750	72%	9.47	3,800	38,000	27,140	71%	9.91	3,835	41,000	29,255	71%	10.68	3,840
	95°F	36,000	25,785	72%	9.16	3,930	38,000	27,210	72%	9.58	3,965	40,000	28,650	72%	10.00	4,000
	100°F	33,860	24,860	73%	8.50	3,983	35,540	26,080	73%	8.85	4,017	37,225	27,300	73%	9.19	4,052
	105°F	31,720	23,930	75%	7.86	4,035	33,090	24,940	75%	8.13	4,070	34,450	25,950	75%	8.39	4,105
	110°F	29,700	23,010	77%	7.27	4,088	30,730	23,805	77%	7.46	4,122	31,775	24,600	77%	7.64	4,157
	115°F	27,550	22,090	80%	6.65	4,140	28,275	22,670	80%	6.77	4,175	29,000	23,250	80%	6.89	4,210

*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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EXTENDED RATINGS: TUD42AH2/D-D(U) TUD42W2/D-D(U)

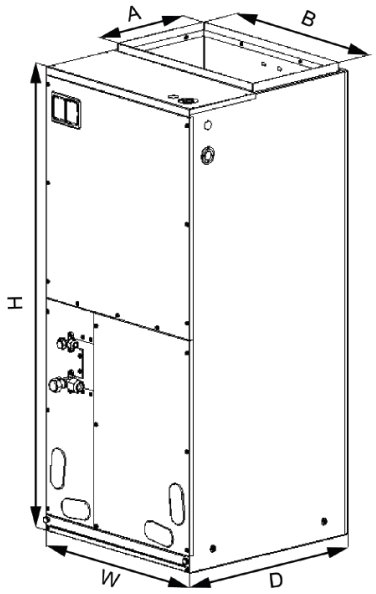
HEATING PERFORMANCE

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)		
		TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)
MAX OUTPUT*	5°F	23,500	1.79	3,850	21,737	1.65	3,865	19,975	1.51	3,880
	10°F	23,900	1.92	3,640	22,308	1.79	3,660	20,717	1.65	3,680
	15°F	24,400	2.09	3,420	22,980	1.96	3,445	21,560	1.82	3,470
	17°F	25,000	2.30	3,190	23,750	2.16	3,220	22,500	2.03	3,250
	20°F	26,000	2.14	3,553	24,700	2.02	3,583	23,400	1.90	3,613
	25°F	27,753	2.25	3,608	26,623	2.14	3,643	25,494	2.03	3,680
	30°F	29,606	2.37	3,654	28,647	2.27	3,695	27,688	2.17	3,735
	35°F	31,560	2.51	3,690	30,771	2.41	3,735	29,982	2.32	3,780
	40°F	34,000	2.58	3,856	33,320	2.50	3,900	32,640	2.42	3,945
	45°F	37,000	2.70	4,010	36,260	2.62	4,060	35,520	2.54	4,100
	47°F	40,000	2.82	4,160	39,600	2.76	4,205	39,200	2.70	4,250
	50°F	41,300	2.90	4,180	40,960	2.84	4,225	40,620	2.79	4,270
	55°F	42,600	2.96	4,213	42,320	2.92	4,245	42,040	2.87	4,290
	60°F	44,000	3.00	4,300	43,780	2.96	4,330	43,560	2.93	4,360
	65°F	44,000	3.16	4,085	43,780	3.12	4,114	43,560	3.08	4,142
	70°F	44,000	3.32	3,880	43,780	3.28	3,908	43,560	3.24	3,935
	75°F	44,000	3.50	3,686	43,780	3.46	3,712	43,560	3.41	3,740

*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

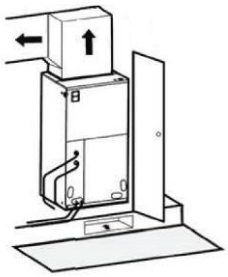
DIMENSIONS & CLEARANCES: TUD42AH2/D-D(U)

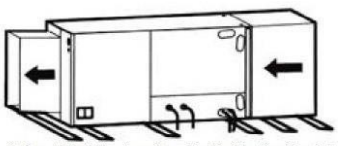


Dimensions	
A	11 5/8
B	20
H	48-3/16
W	21-1/4
D	21 1/4

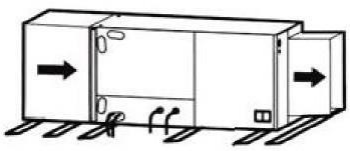
Filter Size	
Supplied	19 1/4 x 20 1/4 x 1/2
Filter Type	Metal mesh

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	





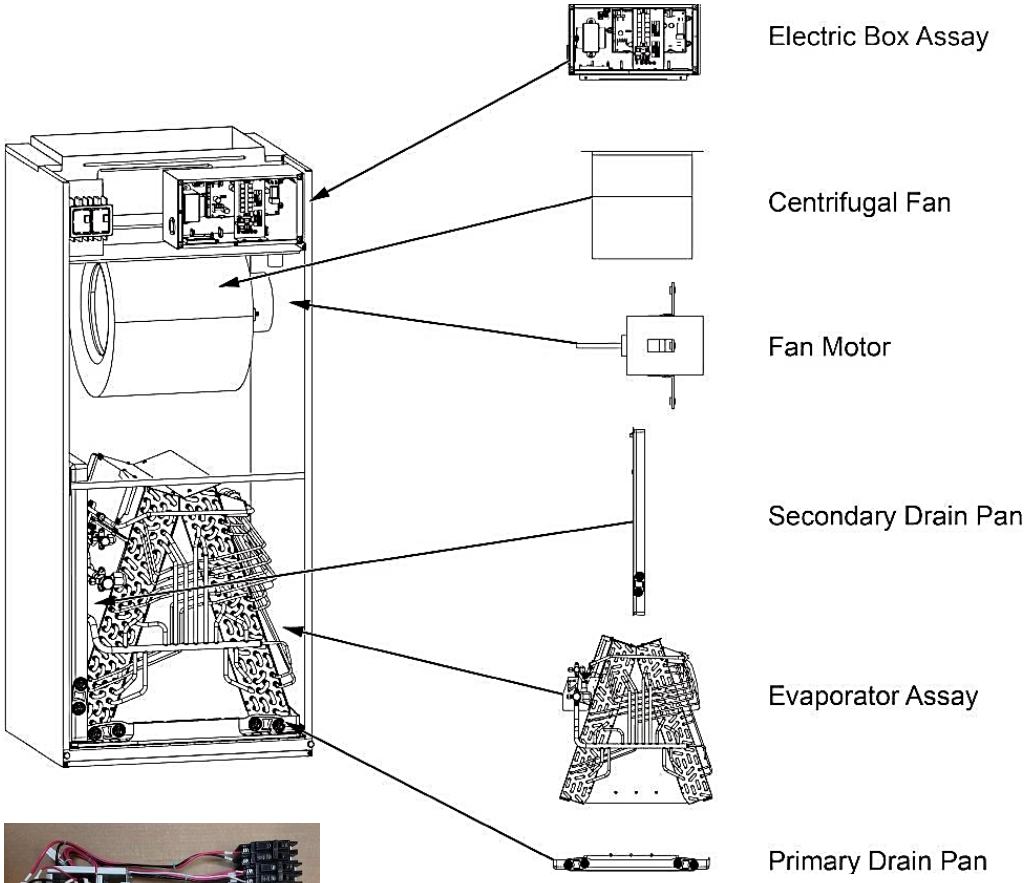
Horizontal Left Configuration - No Modification Needed

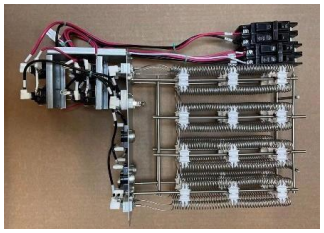


Horizontal Right Configuration - Must Relocate Drain Pan

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ACCESSORY HEATER AND GENERAL INFORMATION: TUD42AH2/D-D(U)

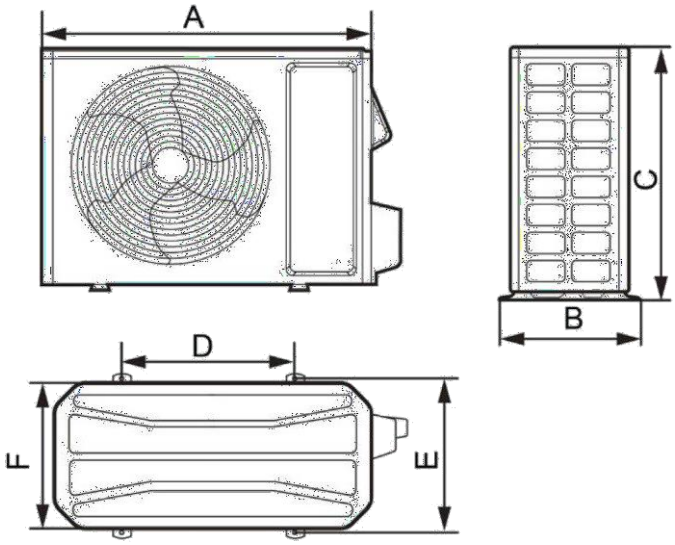




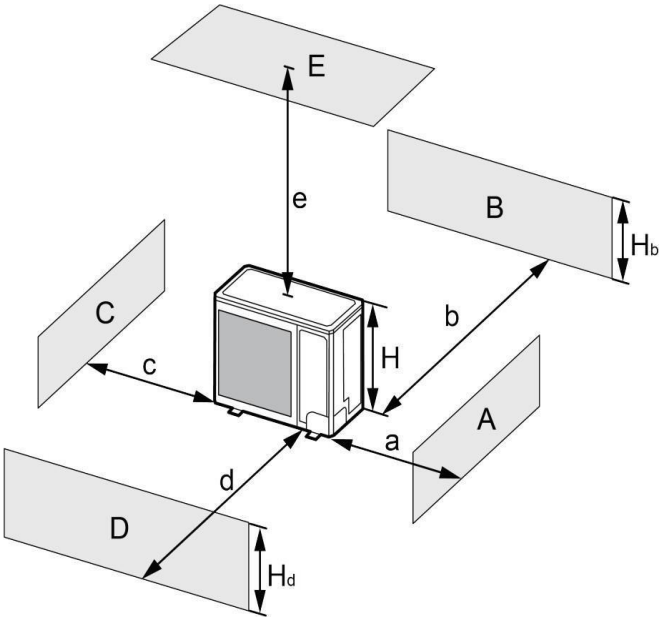
Model	Heat Kit Model	Electric Heat (kW)		Min. Circuit		Max.Fuse or Breaker	
		240V	208V	240V	208V	240V	208V
TUD42AH2/D-D(U)	TUD-HEAT KIT-5KW	5	3.76	26.0	22.6	30	25
	TUD-HEAT KIT-8KW	8	6.00	41.7	36.0	45	40
	TUD-HEAT KIT-10KW	10	7.51	52.0	45.0	60	45

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DIMENSIONS & CLEARANCES: TUD42W2/D-D(U)



Dimensions	
A	39
B	16-13/16
C	37-13/16
D	29-3/4
E	15-9/16
F	14-9/16



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	-	⩾8	-	⩾80	⩾40
		Hd > H	Prohibited				

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