ECONOMICAL CENTRAL DUCTED SPLIT SYSTEM 24VAC CONTROL

30,000 BTU/H UNITARY HEAT PUMP SPLIT SYSTEM

SUBMITTAL DATA: TUD30AH2/D-D(U) TUD30W2/D-D(U)

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

SYSTEM TYPE:
HEAT PUMP



TUD30W2/D-D(U)



TUD30AH2/D-D(U)

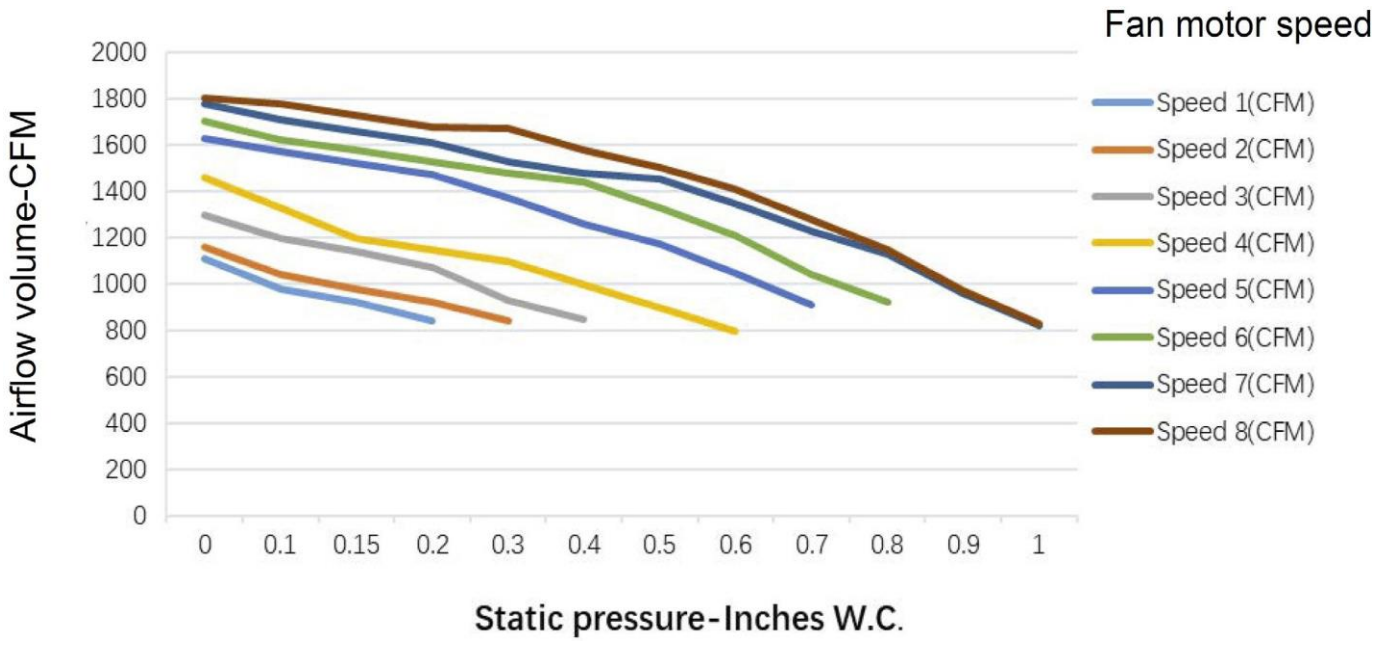
GENERAL FEATURES

- 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	28,600
	Min-Max Capacity	Btu/h	7,600-28,600
Heating	Rated Capacity @ 47°F	Btu/h	28,600
	Rated Capacity @ 17°F	Btu/h	18,600
	Min-Max Capacity	Btu/h	6,800-28,600
SEER2 / EER2			15.2 / 10.0
HSPF2 / COP			7.8 / 2.93
AHRI Number			211078854
Cooling Temperature Range		°F / °C	5 – 115 / -15 – 46
Heating Temperature Range		°F / °C	5 – 75 / -15 – 24
INDOOR UNIT			**TUD30AH2/D-D(U)**
Fan Motor Type			1/2
Fan Motor FLA		A	2.5
Air Flow(Rated)		CFM	900
Static Pressure (Rated / Maximum)		In w.c	0.1 / 1.0
Sound Pressure Level (Cooling / Heating)		dB(A)	51
Dehumidification		pt/hr	7.52
Condensate Drain Size (OD)		In	3 / 4
Unit Dimension (WxHxD)		In	18-1/8 × 43-1/2 × 21-1/4
Weight (Net / Gross)		lbs	125.7 / 134.5
Electric Heater (Optional)		kW	5, 8
Coil Type (Blue Fin)			Copper Tube / Aluminum Fin
OUTDOOR UNIT			**TUD30W2/D-D(U)**
Compressor Type			Inverter Rotary
Compressor RLA		A	12.0
Fan Motor Type			ECM
Fan Motor Output Power		HP	1/12
Fan Motor		A	1.5
Sound Pressure Level (Cooling / Heating)		dB(A)	56 (52 – 58)
Unit Dimension (WxHxD)		In	36 11/32 x 29 3/8 x 14 9/16
Weight (Net / Gross)		Lbs	119 / 127
Refrigerant Charge - R410A		oz	77.6
Coil Type (Golden Fin)			Copper Tube / Aluminum Fin
REFRIGERANT PIPING			
Line Set Size (Liquid - Gas)		in	3/8 - 3/4
Pre-Charge Lengh		ft	30
Additional Charge		oz/ft	0.32
Pipe Length (Min - Max)		ft	10 – 100
Max. Pipe Elevation		ft	50
ELECTRICAL			
Power Supply (Voltage Operating Range)			208/230V / 1Ph / 60 Hz
Outdoor Unit	Rated Current (Cooling / Heating)	A	15.3 / 16.0
	MCA / MOCP	A	20.5 / 35.0
Indoor Unit	Rated Current (Cooling / Heating)	A	1.50 / 1.50
	MCA / MOCP	A	4 / 15
Main Power Wire Size		AWG	Size Per Local Code

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FAN PERFORMANCE: TUD30AH2/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	980										
Speed 2-CFM	1160	1040	980									
Speed 3-CFM	1300	1200	1140	1070								
Speed 4-CFM	1460	1330	1200	1150	1100	1000	900					
Speed 5-CFM	1630	1570	1520	1470	1370	1260	1090	900				
Speed 6-CFM	1700	1620	1580	1530	1480	1440	1330	1210	1040	920		
Speed 7-CFM	1780	1710	1660	1610	1530	1480	1450	1350	1230	1130	960	
Speed 8-CFM	1800	1780	1730	1680	1670	1580	1500	1410	1280	1150	970	

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FEATURES SUMMARY: TUD30AH2/D-D(U) TUD30W2/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: TUD30AH2/D-D(U) TUD30W2/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	24,310	17,017	70%	11.46	2,122	26,450	18,515	70%	12.30	2,150	28,600	20,020	70%	13.05	2,192
	10°F	24,310	17,017	70%	11.25	2,160	26,450	18,515	70%	12.08	2,190	28,600	20,020	70%	12.83	2,230
	15°F	24,310	17,017	70%	11.20	2,170	26,450	18,515	70%	12.00	2,205	28,600	20,020	70%	12.77	2,240
	20°F	24,310	17,017	70%	11.15	2,180	26,450	18,515	70%	11.97	2,210	28,600	20,020	70%	12.71	2,250
	25°F	24,310	17,017	70%	11.10	2,190	26,450	18,515	70%	11.91	2,220	28,600	20,020	70%	12.65	2,260
	30°F	24,310	17,017	70%	11.05	2,200	26,450	18,515	70%	11.86	2,230	28,600	20,020	70%	12.60	2,270
	35°F	24,310	17,017	70%	10.95	2,220	26,450	18,515	70%	11.76	2,250	28,600	20,020	70%	12.49	2,290
	40°F	24,310	17,017	70%	10.85	2,240	26,450	18,515	70%	11.65	2,270	28,600	20,020	70%	12.38	2,310
	45°F	24,310	17,017	70%	10.76	2,260	26,450	18,515	70%	11.55	2,290	28,600	20,020	70%	12.27	2,330
	50°F	24,310	17,017	70%	10.62	2,290	26,450	18,515	70%	11.40	2,320	28,600	20,020	70%	12.12	2,360
	55°F	24,310	17,017	70%	10.48	2,320	26,450	18,515	70%	11.26	2,350	28,600	20,020	70%	11.97	2,390
	60°F	24,310	17,017	70%	10.34	2,350	26,450	18,515	70%	11.11	2,380	28,600	20,020	70%	11.82	2,420
	65°F	25,230	17,910	71%	10.60	2,380	27,115	19,105	70%	11.25	2,410	29,000	20,300	70%	11.84	2,450
	70°F	26,700	19,000	71%	11.08	2,410	28,350	20,080	71%	11.62	2,440	30,000	21,130	70%	12.10	2,480
	75°F	26,700	19,080	71%	11.13	2,400	28,350	20,260	71%	11.67	2,430	30,000	21,250	71%	12.15	2,470
	80°F	26,700	19,100	72%	11.17	2,390	28,350	20,300	72%	11.71	2,420	30,000	21,270	71%	12.20	2,460
	85°F	25,740	18,570	72%	10.17	2,530	27,170	19,550	72%	10.61	2,560	28,600	20,540	72%	11.26	2,540
	90°F	25,740	18,600	72%	9.68	2,660	27,170	19,650	72%	10.06	2,700	28,600	20,670	72%	10.55	2,710
	95°F	25,740	18,720	73%	9.23	2,790	27,170	19,760	73%	9.61	2,825	28,600	20,800	73%	10.00	2,860
	100°F	25,100	18,740	75%	8.73	2,875	26,320	19,640	75%	9.04	2,910	27,550	20,550	75%	9.35	2,945
	105°F	24,400	18,760	77%	8.24	2,960	25,480	19,730	77%	8.51	2,995	26,500	20,300	77%	8.75	3,030
	110°F	23,900	18,870	79%	7.85	3,045	24,730	19,400	78%	8.03	3,080	25,550	20,050	78%	8.20	3,115
	115°F	23,275	18,810	81%	7.44	3,130	23,900	19,300	81%	7.55	3,165	24,500	19,800	81%	7.66	3,200

*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: TUD30AH2/D-D(U) TUD30W2/D-D(U)

HEATING PERFORMANCE

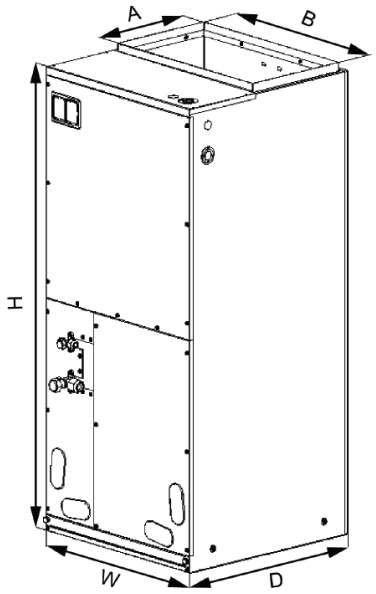
Outdoor Ambient Temperature (DB)		Return Air Temperature								
		70°F (DB) / 59°F (WB)			75°F (DB) / 63°F (WB)			80°F (DB) / 67°F (WB)		
		TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)
MAX OUTPUT*	5°F	24,310	17,017	70%	11.46	2,122	26,450	18,515	70%	12.30
	10°F	24,310	17,017	70%	11.25	2,160	26,450	18,515	70%	12.08
	15°F	24,310	17,017	70%	11.20	2,170	26,450	18,515	70%	12.00
	17°F	24,310	17,017	70%	11.15	2,180	26,450	18,515	70%	11.97
	20°F	24,310	17,017	70%	11.10	2,190	26,450	18,515	70%	11.91
	25°F	24,310	17,017	70%	11.05	2,200	26,450	18,515	70%	11.86
	30°F	24,310	17,017	70%	10.95	2,220	26,450	18,515	70%	11.76
	35°F	24,310	17,017	70%	10.85	2,240	26,450	18,515	70%	11.65
	40°F	24,310	17,017	70%	10.76	2,260	26,450	18,515	70%	11.55
	45°F	24,310	17,017	70%	10.62	2,290	26,450	18,515	70%	11.40
	47°F	24,310	17,017	70%	10.48	2,320	26,450	18,515	70%	11.26
	50°F	24,310	17,017	70%	10.34	2,350	26,450	18,515	70%	11.11
	55°F	25,230	17,910	71%	10.60	2,380	27,115	19,105	70%	11.25
	60°F	26,700	19,000	71%	11.08	2,410	28,350	20,080	71%	11.62
	65°F	26,700	19,080	71%	11.13	2,400	28,350	20,260	71%	11.67
	70°F	26,700	19,100	72%	11.17	2,390	28,350	20,300	72%	11.71
	75°F	25,740	18,570	72%	10.17	2,530	27,170	19,550	72%	10.61

*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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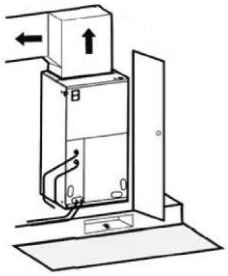
DIMENSIONS & CLEARANCES: TUD30AH2/D-D(U)

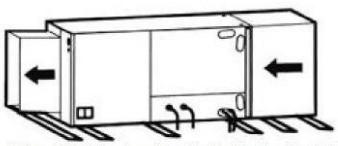


Dimensions	
A	11 5/8
B	16-3/4
H	43-1/2
W	18-1/8
D	21 1/4

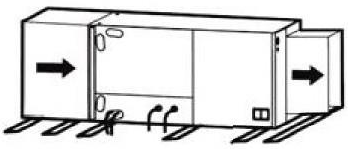
Filter Size	
Supplied	17 x 20 x 1/2
Filter Type	Metal mesh

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	





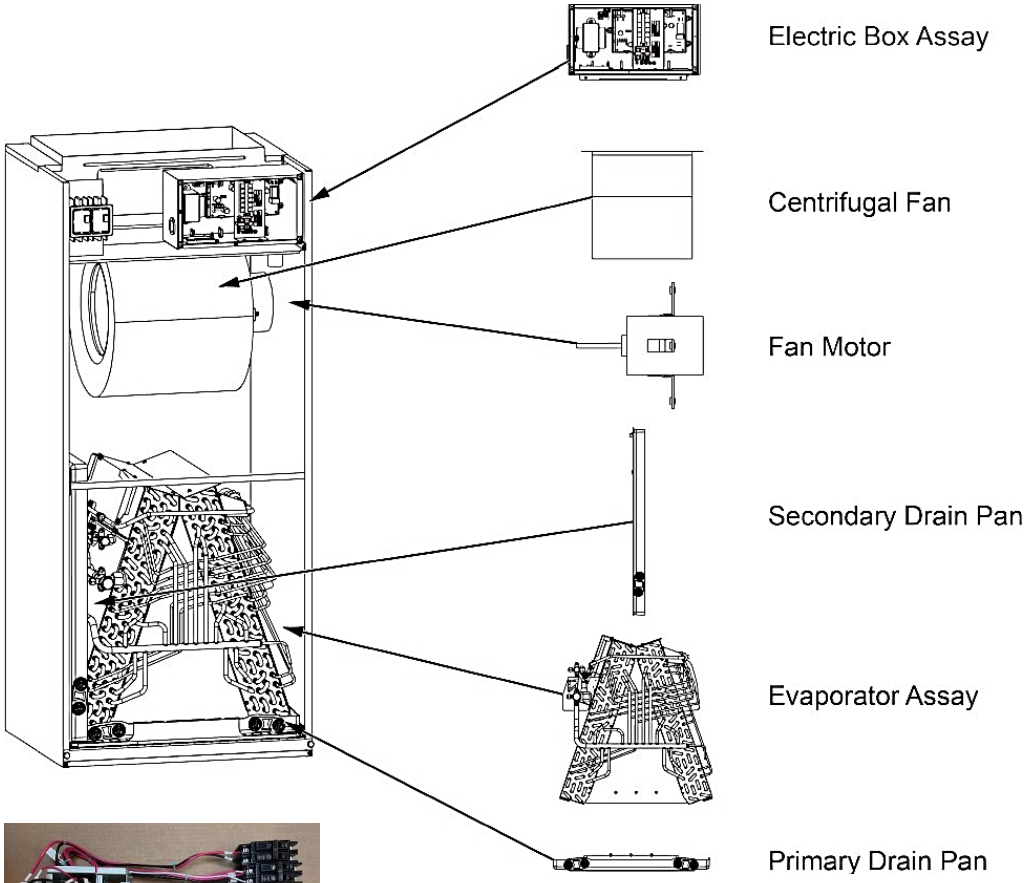
Horizontal Left Configuration - No Modification Needed

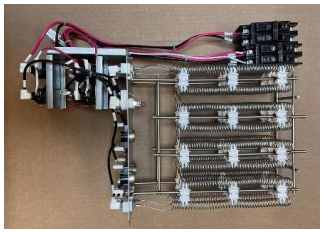


Horizontal Right Configuration - Must Relocate Drain Pan

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ACCESSORY HEATER AND GENERAL INFORMATION: TUD30AH2/D-D(U)



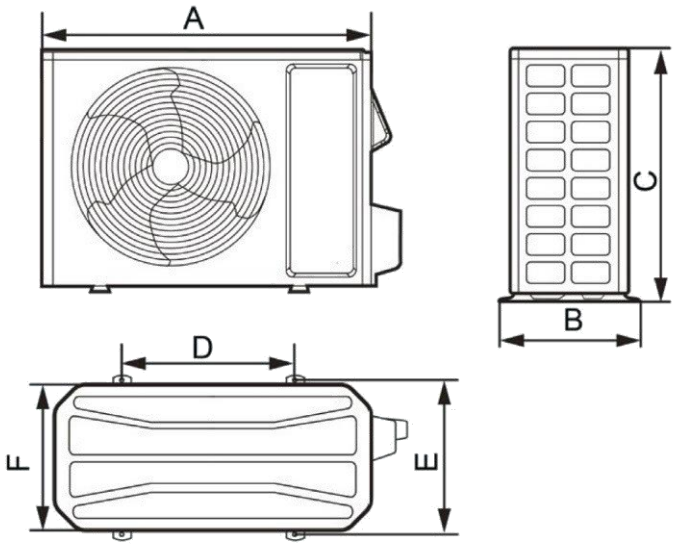


Model	Heat Kit Model	Electric Heat (kW)		Min. Circuit		Max.Fuse or Breaker	
		240V	208V	240V	208V	240V	208V
TUD30AH2/D-D(U)	TUD-HEAT KIT-5KW	5	3.76	26.0	22.6	30	25
	TUD-HEAT KIT-8KW	8	6.00	41.7	36.0	45	40

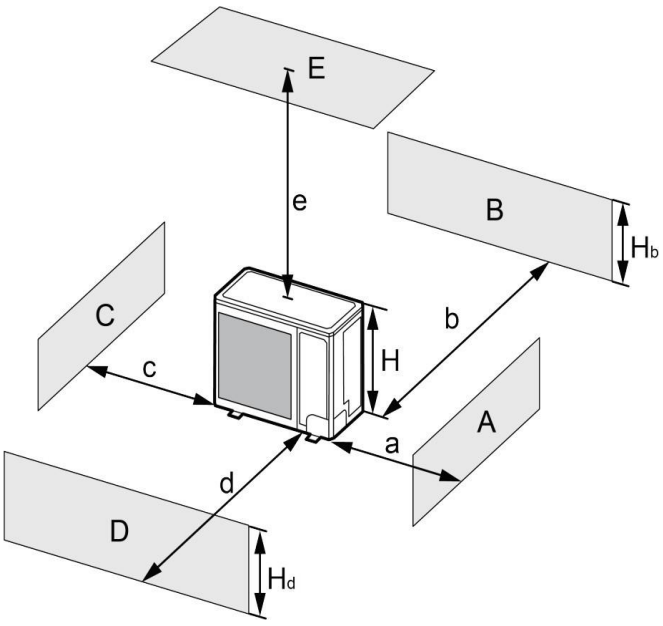
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DIMENSIONS & CLEARANCES: TUD30W2/D-D(U)



Dimensions	
A	36-5/16
B	16-13/16
C	29-3/8
D	24
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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