ECONOMICAL CENTRAL DUCTED SPLIT SYSTEM 24VAC CONTROL

60,000 BTU/H UNITARY HEAT PUMP SPLIT SYSTEM

SUBMITTAL DATA: TUD60AH2/D-D(U) TUD60W2/D-D(U)

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

SYSTEM TYPE:
HEAT PUMP



TUD60W2/D-D(U)



TUD60AH2/D-D(U)

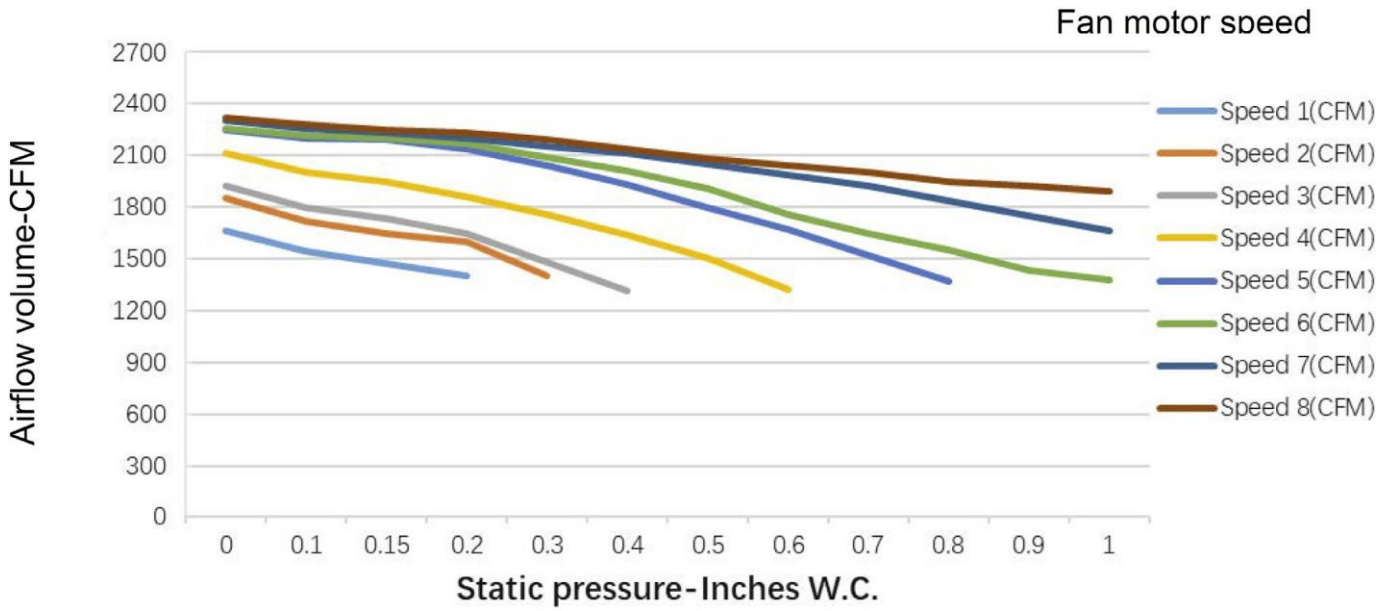
GENERAL FEATURES

- 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	54,000
	Min-Max Capacity		Btu/h	14,300-54,000
Heating	Rated Capacity @ 47°F		Btu/h	54,000
	Rated Capacity @ 17°F		Btu/h	30,000
	Min-Max Capacity		Btu/h	13,100-54,000
SEER2 / EER2				15.2 / 10.0
HSPF2 / COP				7.8 / 2.82
AHRI Number				211078858
Cooling Temperature Range			°F / °C	5 – 115 / -15 – 46
Heating Temperature Range			°F / °C	5 – 75 / -15 – 24
INDOOR UNIT				**TUD60AH2/D-D(U)**
Fan Motor Type				ECM
Fan Motor FLA			A	6.0
Air Flow(Rated)			CFM	1,500
Static Pressure (Rated / Maximum)			In w.c	0.1 / 1.0
Sound Pressure Level (Cooling / Heating)			dB(A)	54
Dehumidification			pt/hr	14.41
Condensate Drain Size (OD)			In	3 / 4
Unit Dimension (WxHxD)			In	24-13/16 x 52 x 21 1/4
Weight (Net / Gross)			lbs	189 / 203
Electric Heater (Optional)			kW	5, 8, 10, 15, 20
Coil Type (Blue Fin)				Copper Tube / Aluminum Fin
OUTDOOR UNIT				**TUD60W2/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	3.0
Sound Pressure Level (Cooling / Heating)			dB(A)	62 (58 – 64)
Unit Dimension (WxHxD)			In	39 x 37-13/16 x 14-9/16
Weight (Net / Gross)			Lbs	200 / 223
Refrigerant Charge - R410A			oz	197.5
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	32.0 / 32.0
	MCA / MOCP		A	38.5 / 60
Indoor Unit	Rated Current (Cooling / Heating)		A	2.76 / 2.76
	MCA / MOCP		A	7.5 / 15
Main Power Wire Size			AWG	Size Per Local Code

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FAN PERFORMANCE: TUD60AH2/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	1660	1540	1470									
Speed 2-CFM	1850	1720	1650	1600								
Speed 3-CFM	1920	1800	1730	1650	1480							
Speed 4-CFM	2110	2000	1950	1860	1760	1640	1500					
Speed 5-CFM	2250	2200	2190	2140	2040	1930	1800	1670	1520			
Speed 6-CFM	2260	2220	2200	2170	2090	2010	1910	1760	1650	1550		
Speed 7-CFM	2300	2260	2230	2200	2150	2115	2050	1990	1920	1790	1650	1470
Speed 8-CFM	2320	2280	2250	2230	2190	2140	2080	2040	2000	1950	1920	1890

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FEATURES SUMMARY: TUD60AH2/D-D(U) TUD60W2/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: TUD60AH2/D-D(U) TUD60W2/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	38,250	26,600	70%	10.54	3,630	41,625	28,800	69%	11.36	3,665	45,000	31,000	69%	12.16	3,700
	10°F	38,250	26,600	70%	10.42	3,670	41,625	28,800	69%	10.24	4,065	45,000	31,000	69%	12.03	3,740
	15°F	38,250	26,600	70%	10.31	3,710	41,625	28,800	69%	10.21	4,075	45,000	31,000	69%	11.90	3,780
	20°F	38,250	26,600	70%	10.20	3,750	41,625	28,800	69%	10.19	4,085	45,000	31,000	69%	11.78	3,820
	25°F	38,250	26,600	70%	10.07	3,800	41,625	28,800	69%	10.16	4,095	45,000	31,000	69%	11.63	3,870
	30°F	38,250	26,600	70%	9.99	3,830	41,625	28,800	69%	10.14	4,105	45,000	31,000	69%	11.54	3,900
	35°F	38,250	26,600	70%	9.88	3,870	41,625	28,800	69%	10.09	4,125	45,000	31,000	69%	11.42	3,940
	40°F	38,250	26,600	70%	9.81	3,900	41,625	28,800	69%	10.04	4,145	45,000	31,000	69%	11.34	3,970
	45°F	38,250	26,600	70%	9.66	3,960	41,625	28,800	69%	9.99	4,165	45,000	31,000	69%	11.17	4,030
	50°F	38,250	26,600	70%	9.54	4,010	41,625	28,800	69%	9.92	4,195	45,000	31,000	69%	11.03	4,080
	55°F	38,250	26,600	70%	9.47	4,040	41,625	28,800	69%	9.85	4,225	45,000	31,000	69%	10.95	4,110
	60°F	38,250	26,600	70%	9.28	4,120	41,625	28,800	69%	9.78	4,255	45,000	31,000	69%	10.74	4,190
	65°F	39,150	27,790	71%	9.37	4,180	42,075	29,395	70%	9.82	4,285	45,000	31,000	69%	10.59	4,250
	70°F	43,610	30,850	71%	10.19	4,280	46,305	32,310	70%	10.73	4,315	49,000	33,800	69%	11.26	4,350
	75°F	47,170	26,900	70%	10.53	4,480	50,085	34,900	69%	11.09	4,515	53,000	36,640	69%	11.65	4,550
	80°F	50,730	35,750	70%	10.84	4,680	53,865	37,550	70%	11.42	4,715	57,000	39,370	69%	12.00	4,750
	85°F	48,600	34,000	70%	9.92	4,900	51,600	35,700	69%	10.45	4,940	54,000	37,400	69%	10.99	4,915
	90°F	48,600	33,870	70%	9.49	5,120	51,600	35,660	69%	10.00	5,158	54,000	37,450	69%	10.54	5,125
	95°F	48,600	33,750	69%	9.12	5,330	51,600	35,625	69%	9.56	5,365	54,000	37,500	69%	10.00	5,400
	100°F	46,685	33,625	72%	9.10	5,130	49,205	35,250	72%	9.53	5,165	51,275	36,875	72%	9.86	5,200
	105°F	44,770	33,500	75%	9.08	4,930	46,810	34,875	75%	9.43	4,965	48,550	36,250	75%	9.71	5,000
	110°F	42,955	33,375	78%	9.08	4,730	44,515	34,500	78%	9.34	4,765	45,925	35,625	78%	9.57	4,800
	115°F	41,040	33,250	81%	9.06	4,530	42,120	34,125	81%	9.23	4,565	43,200	35,000	81%	9.39	4,600

*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: TUD60AH2/D-D(U) TUD60W2/D-D(U)

HEATING PERFORMANCE

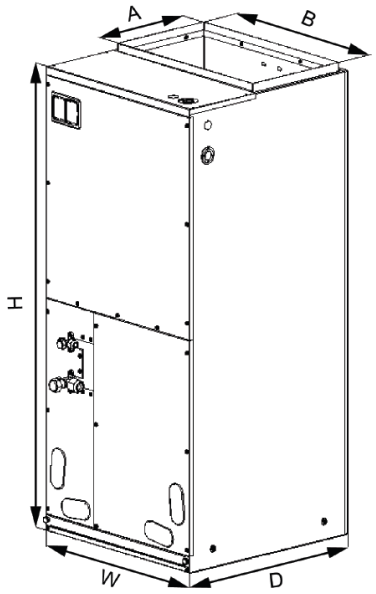
Outdoor Ambient Temperature (DB)		Return Air Temperature								
		70°F (DB) / 59°F (WB)			75°F (DB) / 63°F (WB)			80°F (DB) / 67°F (WB)		
		TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)
MAX OUTPUT*	5°F	31,500	1.78	5,200	29,138	1.64	5,215	26,775	1.50	5,230
	10°F	30,900	1.88	4,810	28,825	1.75	4,830	26,750	1.62	4,850
	15°F	30,400	2.02	4,410	28,613	1.89	4,435	26,825	1.76	4,460
	17°F	30,000	2.20	4,000	28,500	2.07	4,030	27,000	1.95	4,060
	20°F	31,800	2.27	4,100	30,210	2.14	4,130	28,620	2.02	4,160
	25°F	34,200	2.34	4,290	32,813	2.22	4,327	31,425	2.11	4,362
	30°F	36,700	2.41	4,470	35,515	2.31	4,514	34,330	2.21	4,555
	35°F	39,300	2.48	4,647	38,318	2.39	4,692	37,335	2.31	4,737
	40°F	44,210	2.64	4,900	43,326	2.57	4,945	42,442	2.49	4,991
	45°F	49,110	2.79	5,150	48,128	2.72	5,190	47,146	2.64	5,236
	47°F	54,000	2.94	5,380	53,460	2.89	5,425	52,920	2.84	5,470
	50°F	55,630	3.02	5,400	55,175	2.97	5,445	54,717	2.92	5,490
	55°F	57,260	3.10	5,420	56,890	3.05	5,465	56,513	3.01	5,510
	60°F	59,000	3.18	5,440	58,705	3.15	5,470	58,410	3.11	5,500
	65°F	59,000	3.35	5,168	58,705	3.31	5,195	58,410	3.28	5,225
	70°F	59,000	3.52	4,910	58,705	3.49	4,935	58,410	3.45	4,964
	75°F	59,000	3.71	4,665	58,705	3.67	4,688	58,410	3.63	4,716

*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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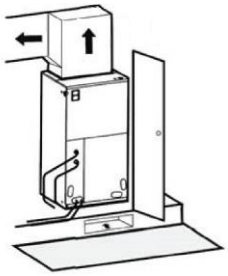
DIMENSIONS & CLEARANCES: TUD60AH2/D-D(U)

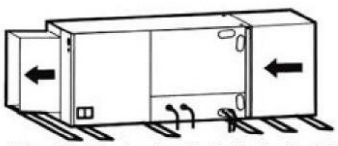


Dimensions	
A	11 5/8
B	20
H	52
W	24-13/16
D	21 1/4

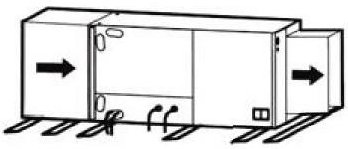
Filter Size	
Supplied	24 x 20 x 1/2
Filter Type	Metal mesh

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	





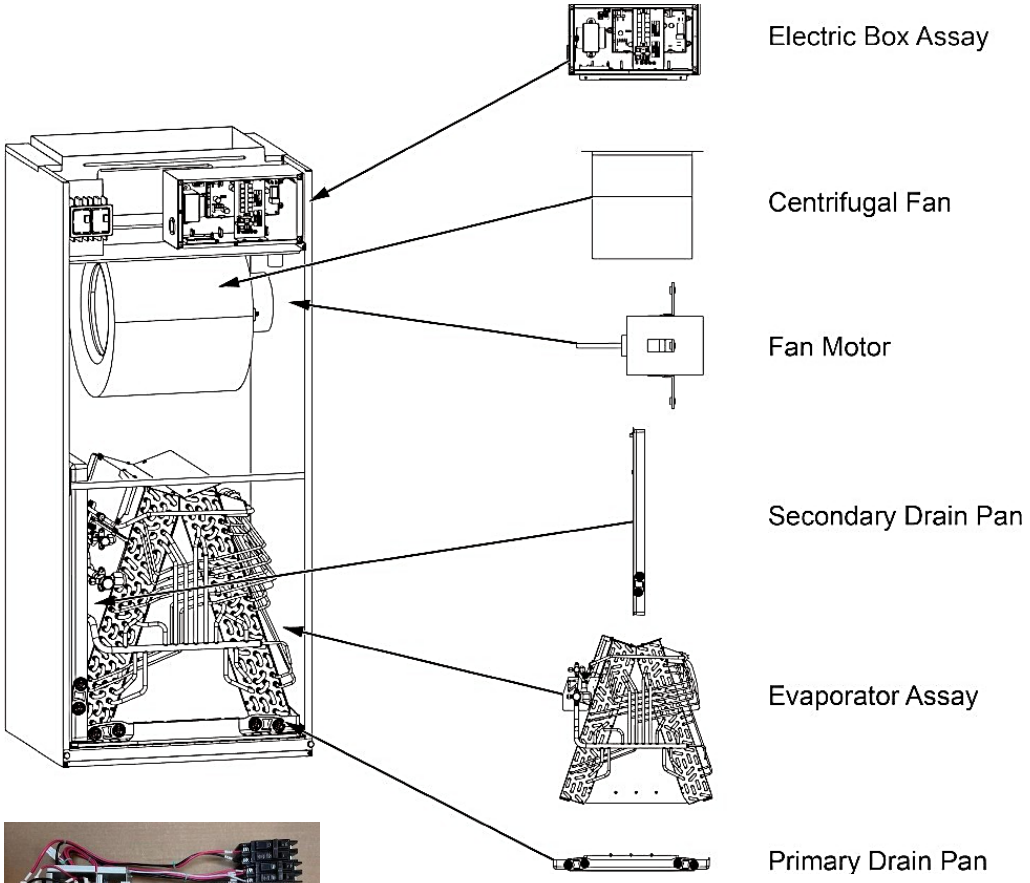
Horizontal Left Configuration - No Modification Needed

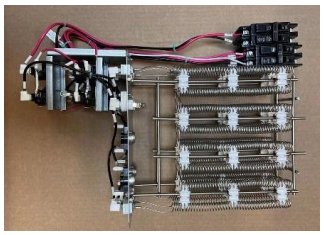


Horizontal Right Configuration - Must Relocate Drain Pan

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ACCESSORY HEATER AND GENERAL INFORMATION: TUD60AH2/D-D(U)



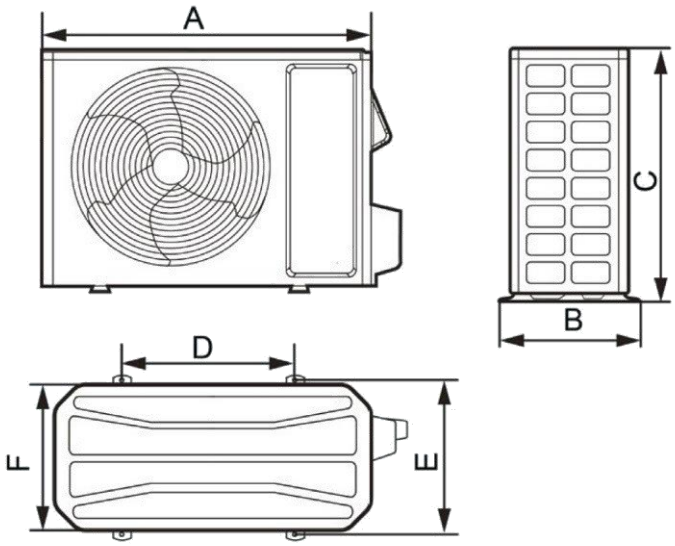


Model	Heat Kit Model	Electric Heat (kW)		Min. Circuit		Max.Fuse or Breaker	
		240V	208V	240V	208V	240V	208V
TUD60-24AH2ADU	TUD-Heat Kit-5KW	5	3.76	26	22.6	30	25
	TUD-HEAT KIT-8KW	8	6.00	41.7	36	45	40
	TUD-HEAT KIT-10KW	10	7.51	52	45	60	45
	TUD-HEAT KIT-15KW	15	11.25	52 & 26	45 & 22.6	60 & 30	45 & 25
	TUD-HEAT KIT-20KW	20	15.02	52 & 52	45 & 45	60 & 60	45 & 45

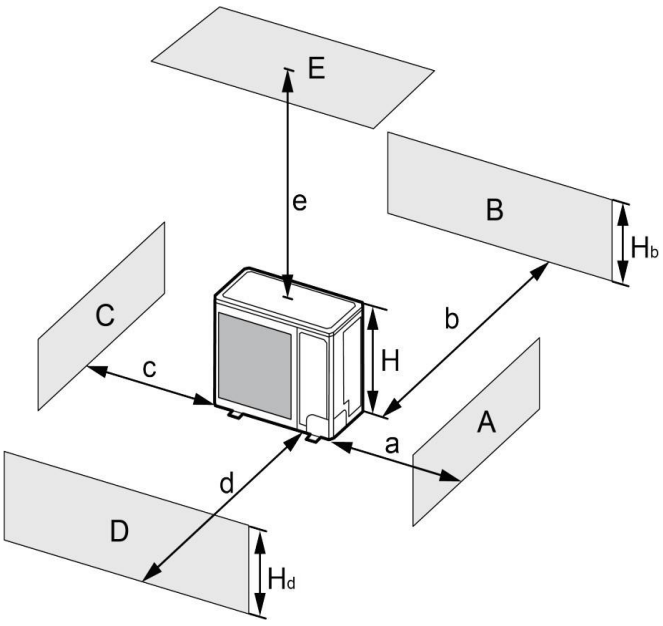
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DIMENSIONS & CLEARANCES: TUD60W2/D-D(U)



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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