

TABLE 8. CAPACITY AND SIZING TABLE—FIRST STORY
For Warm Air and Return Air Stack, Branch, and Registers

EQUIV. LENGTH OF FITTINGS AND REGISTERS	HORIZONTAL LENGTH FURNACE TO REGISTER		FIRST STORY ROOM HEAT LOSS—BTUH							
	Ducts*	Insulated Attic Ducts								
Col. a	Col. b	Col. c	Col. d	Col. e	Col. f	Col. g	Col. h	Col. i	Col. j	
Up to 70 Eq. Ft.	Up to 7	Up to 5	7,200	12,500	16,000	19,100	25,000	32,000	80,000	
	8-12	6-9	6,700	11,700	15,000	18,000	23,400	30,000	75,000	
	13-17	10-13	6,100	10,800	14,000	17,000	21,600	28,000	70,000	
	18-25	14-18	5,600	9,900	13,000	16,000	19,800	26,000	65,000	
	26-35	19-25	4,800	8,500	11,000	14,200	17,000	22,600	56,500	
71 to 100 Eq. Ft.	36-45	26-35	4,100	7,400	9,900	12,500	14,800	19,500	49,500	
	46-55	36-45	3,500	6,400	8,700	11,000	12,800	17,400	43,500	
	.....	46-55	3,000	5,500	7,700	9,600	11,000	15,400	38,500	
	Up to 7	Up to 5	5,500	9,900	13,100	16,300	19,800	25,200	65,500	
	8-12	6-9	5,100	9,200	12,300	15,400	18,400	24,600	61,500	
101 to 130 Eq. Ft.	13-17	10-13	4,800	8,600	11,600	14,500	17,200	23,200	58,000	
	18-25	14-18	4,500	8,100	10,900	13,700	16,200	21,800	54,500	
	26-35	19-25	3,900	7,100	9,700	12,200	14,200	19,400	48,500	
	36-45	26-35	3,400	6,200	8,500	10,800	12,400	17,000	43,500	
	46-55	36-45	3,000	5,400	7,500	9,500	10,800	15,000	37,500	
131 to 165 Eq. Ft.	.....	46-55	2,600	4,600	6,500	8,300	9,200	13,000	33,500	
	Up to 7	Up to 5	4,600	8,500	11,300	14,300	17,000	22,600	56,200	
	8-12	6-9	4,300	7,900	10,600	13,500	15,800	21,200	52,600	
	13-17	10-13	4,100	7,400	10,000	12,700	14,800	20,000	50,200	
	18-25	14-18	3,800	6,900	9,400	11,900	13,800	18,500	47,300	
166 to 200 Eq. Ft.	26-35	19-25	3,300	6,100	8,400	10,500	12,200	16,800	42,000	
	36-45	26-35	3,000	5,300	7,400	9,300	10,600	14,800	37,000	
	46-55	36-45	2,700	4,700	6,500	8,300	9,400	13,000	32,400	
	.....	46-55	2,300	4,000	5,400	7,000	8,000	10,800	27,000	
	Up to 7	Up to 5	4,100	7,300	9,800	12,300	14,600	19,600	49,200	
201 to 230 Eq. Ft.	8-12	6-9	3,800	6,900	9,100	11,700	13,800	18,200	45,800	
	13-17	10-13	3,600	6,400	8,600	11,000	12,900	17,200	41,900	
	18-25	14-18	3,400	6,000	8,100	10,300	12,000	16,200	40,300	
	26-35	19-25	2,900	5,300	7,200	9,100	10,600	14,400	36,000	
	36-45	26-35	2,600	4,700	6,400	8,100	9,600	12,800	31,800	
231 to 260 Eq. Ft.	46-55	36-45	2,300	4,200	5,600	7,100	8,400	11,200	28,100	
	.....	46-55	2,000	3,600	4,700	6,000	7,200	9,400	23,500	
	Up to 7	Up to 5	3,800	6,500	8,800	11,000	13,000	17,600	44,100	
	8-12	6-9	3,500	6,100	8,200	10,500	12,200	16,400	41,500	
	13-17	10-13	3,300	5,700	7,700	9,900	11,400	15,400	38,800	
261 to 290 Eq. Ft.	18-25	14-18	3,100	5,400	7,200	9,300	10,800	14,400	36,000	
	26-35	19-25	2,700	4,800	6,400	8,300	9,600	12,800	32,000	
	36-45	26-35	2,400	4,300	5,700	7,300	8,600	11,400	28,200	
	46-55	36-45	2,100	3,800	5,000	6,400	7,600	10,000	24,700	
	.....	46-55	1,700	3,000	3,900	5,100	6,000	7,800	19,500	
Combination Number			41	42	43	44	45	46	47	
Stacks No. Size			1 10x3 1/4	1 10x3 1/4	1 12x3 1/4	1 14x3 1/4	2 10x3 1/4	2 12x3 1/4	—	
Rectangular Branch Size			3x8	4x8	5x8	6x8	8x8	10x8	15x8	
Round Branch Size (Diam)			5	6	7	8	9	10	12	
Number of Joist Spaces and Minimum Depth-Return Air			1 at 3	1 at 3	1 at 4	1 at 5	1 at 6 or 2 at 3	1 at 7 or 2 at 4	1 at 9 or 2 at 5	
Registers: Low Wall, High Wall or Baseboard			10x6	10x6	12x6	14x6	(2)10x6 or (1)24x6	(2)12x6 or (1)30x6	—	
Registers: Floor-Warm Air			8x10	8x10	9x12	9x12 or longer	10x12	12x14	—	
Registers: Floor-Return Air			6x10 or 4x14	6x10 or 4x14	6x12 or 6x14	6x14	6x30	6x30	8x30	
Trunk Duct Increase, Inches			1	2	3	4	5	7	12	

^a Uninsulated ducts in heated spaces and insulated ducts in unheated spaces.

^b Note: For return air a 14x3 1/4 in. stud space may be used instead of 10x3 1/4 in. stack. Where 12x3 1/4 in. or 14x3 1/4 in. stack is required, a 14x3 1/4 in. stud space may be used only when inside of stud space is smooth and without protruding plaster keys. The number of joist spaces for combination 47 is based on 2x8 in. joists. One space may be used with 2x10 in. joists.

The limiting factor for a duct combination is the stack capacity.

TABLE 9. CAPACITY AND SIZING TABLE—SECOND STORY
For Warm Air and Return Air Stack, Branch, and Registers

EQUIV. LENGTH OF FITTINGS AND REGISTERS	HORIZONTAL LENGTH FURNACE TO REGISTER		SECOND STORY ROOM HEAT LOSS—BTUH							
	Ducts ^a	Insulated Attic Ducts								
Col. a	Col. b	Col. c	Col. d	Col. e	Col. f	Col. g	Col. h	Col. i	Col. j	
Up to 70 Eq. Ft.	Up to 7	Up to 5	6,300	10,900	14,000	17,000	21,800	28,000	70,000	
	8-12	6-9	5,700	10,000	13,000	15,900	20,000	26,000	65,000	
	13-17	10-13	5,200	9,200	12,100	14,900	18,400	24,200	60,500	
	18-25	14-18	4,800	8,500	11,400	13,900	17,000	22,400	57,000	
	26-35	19-25	4,100	7,300	10,000	12,400	14,600	20,000	50,000	
71 to 100 Eq. Ft.	36-45	26-35	3,500	6,400	8,800	11,100	12,800	17,600	44,000	
	46-55	36-45	3,100	5,600	7,800	9,900	11,200	15,600	39,000	
	.....	46-55	2,800	5,000	6,800	9,000	10,000	13,600	34,000	
	Up to 7	Up to 5	5,000	9,000	11,900	14,800	18,000	23,900	59,500	
	8-12	6-9	4,600	8,200	11,000	13,900	16,400	22,600	55,000	
101 to 130 Eq. Ft.	13-17	10-13	4,300	7,600	10,300	13,000	15,200	20,600	51,500	
	18-25	14-18	4,000	7,100	9,600	12,200	14,200	19,200	48,000	
	26-35	19-25	3,400	6,200	8,400	10,800	12,400	16,800	42,000	
	36-45	26-35	3,000	5,400	7,500	9,600	10,800	15,000	37,500	
	46-55	36-45	2,700	4,700	6,700	8,500	9,400	13,400	33,500	
131 to 165 Eq. Ft.	.....	46-55	2,300	4,200	6,000	7,500	8,400	12,000	30,000	
	Up to 7	Up to 5	4,200	7,700	10,400	13,000	15,400	21,700	52,200	
	8-12	6-9	3,900	7,200	9,700	12,100	14,400	19,400	48,400	
	13-17	10-13	3,700	6,700	9,000	11,300	13,400	18,000	45,300	
	18-25	14-18	3,500	6,200	8,400	10,600	12,400	16,800	42,300	
166 to 200 Eq. Ft.	26-35	19-25	3,000	5,400	7,400	9,400	10,800	14,800	37,000	
	36-45	26-35	2,600	4,700	6,500	8,300	9,400	13,000	32,500	
	46-55	36-45	2,400	4,100	5,800	7,400	8,200	11,600	29,000	
	.....	46-55	2,000	3,600	4,800	6,500	7,200	9,600	24,000	
	Up to 7	Up to 5	3,800	6,800	9,100	11,400	13,600	18,200	45,500	
Combination Number	8-12	6-9	3,500	6,300	8,400	10,500	12,600	16,800	42,000	
	13-17	10-13	3,200	5,800	7,900	9,800	11,600	15,800	39,600	
	18-25	14-18	3,000	5,500	7,400	9,200	11,000	14,800	36,800	
	26-35	19-25	2,700	4,800	6,300	8,100	9,600	12,600	32,200	
	36-45	26-35	2,300	4,200	5,700	7,200	8,400	11,400	28,200	
Stacks No. Size	46-55	36-45	1,980	3,400	4,500	5,800	6,800	9,000	22,800	
	.....	46-55	1,800	3,300	4,300	5,400	6,000	8,000	21,500	
	Up to 7	Up to 5	3,500	6,100	8,200	10,300	12,200	16,400	41,000	
	8-12	6-9	3,200	5,700	7,600	9,500	11,400	15,200	38,300	
	13-17	10-13	2,900	5,300	7,100	8,900	10,600	14,200	35,800	
Rectangular Branch Size	18-25	14-18	2,700	5,000	6,700	8,300	10,000	13,400	33,400	
	26-35	19-25	2,500	4,400	5,700	7,400	8,800	11,400	29,000	
	36-45	26-35	2,100	3,900	5,100	6,500	7,800	10,200	25,800	
	46-55	36-45	1,900	3,400	4,500	5,800	6,800	9,000	22,800	
	.....	46-55	1,600	2,800	3,500	4,700	5,600	7,000	17,500	
Combination Number			41	42	43	44	45	46	47	
Stacks No. Size			1 10x3 1/4	1 10x3 1/4	1 12x3 1/4	1 14x3 1/4	2 10x3 1/4	2 12x3 1/4	—	
Rectangular Branch Size			3x8	4x8	5x8	6x8	8x8	10x8	15x8	
Round Branch Size (Diam)			5	6	7	8	9	10	12	
Number of Joist Spaces and Minimum Depth-Return Air			1 at 3	1 at 3	1 at 4	1 at 5	1 at 6 or 2 at 3	1 at 7 or 2 at 4	1 at 9 or 2 at 5	
Registers: Low Wall, High Wall or Baseboard:			10x6	10x6	12x6	14x6	(2)10x6 or (1)24x6	(2)12x6 or (1)30x6	—	
Registers: Floor, Warm Air			8x10	8x10	9x12	9x12 or longer	10x12	12x14	—	
Registers: Floor, Return Air			6x10 or 4x14	6x10 or 4x14	6x12 or 6x14	6x14	6x30	6x30	8x30	
Trunk Duct Increase, Inches			1	2	3	4	5	7	12	

^a Uninsulated ducts in heated spaces and insulated ducts in unheated spaces.

^b Note: For return air a 14x3 1/4 in. stud space may be used instead of 10x3 1/4 in. stack. Where 12x3 1/4 in. or 14x3 1/4 in. stack is required, a 14x3 1/4 in. stud space may be used only when inside of stud space is smooth and without protruding plaster keys. The number of joist spaces for combination 47 is based on 2x8 joists. One space may be used with 2x10 joists.

The limiting factor for a duct combination is the stack capacity.