

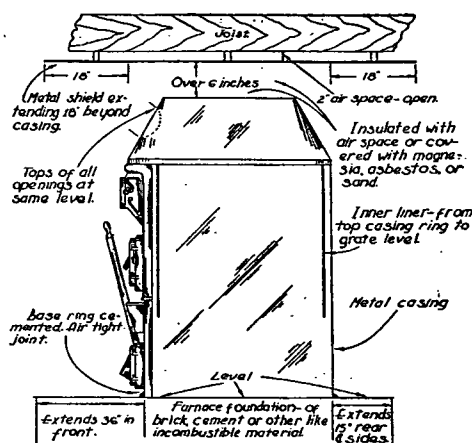


FIG. 3. DETAILS OF FURNACE BONNET, CASING, AND FOUNDATION
(FROM N.W.A.H. & A.C.A. MANUAL 5, THIRD EDITION)

The selected types of boots are shown in Fig. 2, and their resistances expressed in equivalent elbows are shown in Table 5. It is essential that free areas be maintained throughout fittings.

Figs. 3 and 4 show recommended practice as given by the N.W.A.H. & A.C.A. For construction, design features, and ratings of gravity furnaces see Chapter 15.

Carrying Capacity

The Btu carrying capacities of the selected warm air and return air combinations are shown in Tables 6, 7 and 8.

The selected types of return air ducts and fittings are shown in Fig. 5.

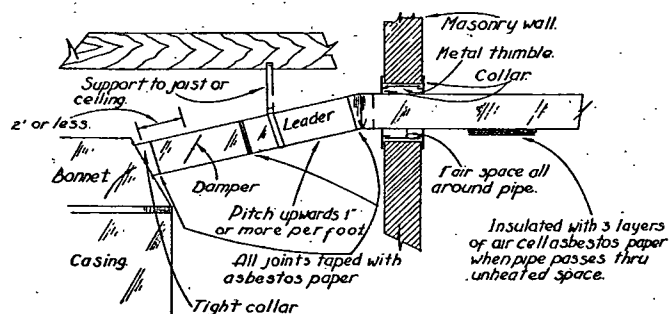


FIG. 4. DETAILS OF BONNET AND LEADER OF GRAVITY WARM-AIR FURNACE
(FROM N.W.A.H. & A.C.A. MANUAL 5, THIRD EDITION)

Gravity Warm Air Systems

TABLE 6. WARM AIR CARRYING CAPACITY, BTU DELIVERED, FIRST STORY REGISTERS^a
Length of Leader Pipe—in Feet

COMBINATION NO.	NO. OF ELBOWS	4 Ft	6 Ft	8 Ft	10 Ft	12 Ft	14 Ft	16 Ft	18 Ft	20 Ft	22 Ft	24 Ft
1	1	6,020	5,850	5,680	5,510	5,340	5,170	5,000	4,830	4,660	4,490	4,320
2	1	7,620	7,400	7,180	6,970	6,760	6,540	6,320	6,110	5,890	5,680	5,460
3	1	9,400	9,140	8,870	8,600	8,340	8,070	7,810	7,540	7,270	7,010	6,740
4	1	13,350	12,970	12,590	12,210	11,830	11,450	11,080	10,700	10,320	9,950	9,560
5	1	17,520	17,020	16,530	16,040	15,550	15,050	14,550	14,050	13,560	13,060	12,560
1	2	5,850	5,660	5,490	5,330	5,160	5,000	4,840	4,670	4,510	4,340	4,180
2	2	7,360	7,150	6,940	6,730	6,520	6,320	6,110	5,910	5,700	5,500	5,290
3	2	9,090	8,840	8,580	8,320	8,060	7,800	7,550	7,290	7,040	6,780	6,520
4	2	12,910	12,540	12,170	11,800	11,430	11,060	10,690	10,320	9,950	9,580	9,210
5	2	16,940	16,450	15,990	15,500	15,040	14,550	14,080	13,600	13,120	12,650	12,180
1	3	5,620	5,460	5,310	5,150	4,990	4,830	4,670	4,510	4,350	4,190	4,030
2	3	7,120	6,910	6,710	6,510	6,310	6,110	5,900	5,700	5,500	5,300	5,100
3	3	8,780	8,530	8,280	8,030	7,780	7,530	7,290	7,040	6,800	6,550	6,300
4	3	12,450	12,100	11,750	11,400	11,050	10,700	10,350	10,000	9,650	9,300	8,950
5	3	16,360	15,900	15,440	14,970	14,510	14,050	13,600	13,130	12,660	12,200	11,750
1	4	5,420	5,260	5,110	4,960	4,800	4,650	4,500	4,350	4,190	4,040	3,890
2	4	6,860	6,660	6,460	6,270	6,080	5,890	5,690	5,500	5,300	5,110	4,910
3	4	8,460	8,200	7,950	7,740	7,500	7,260	7,020	6,780	6,550	6,310	6,070
4	4	12,010	11,670	11,330	10,990	10,650	10,310	9,970	9,630	9,290	8,950	8,610
5	4	15,770	15,320	14,880	14,420	13,990	13,540	13,100	12,650	12,200	11,750	11,310
1	5	5,240	5,090	4,940	4,790	4,640	4,500	4,350	4,200	4,050	3,910	3,760
2	5	6,650	6,440	6,250	6,060	5,880	5,690	5,500	5,320	5,130	4,940	4,750
3	5	8,180	7,950	7,730	7,490	7,260	7,030	6,800	6,560	6,330	6,100	5,860
4	5	11,610	11,290	10,950	10,620	10,300	9,970	9,640	9,320	8,990	8,660	8,320
5	5	15,250	14,800	14,380	13,950	13,520	13,090	12,650	12,230	11,800	11,370	10,940

^a Additional values for 6 and 7 elbows are given in Manual 5, N.W.A.H. & A.C.A.

TABLE 7. WARM AIR CARRYING CAPACITY, BTU DELIVERED, SECOND STORY REGISTERS^a
Length of Leader Pipe—in Feet

COMBINATION NO. ^{a, b}	NO. OF ELBOWS	4 Ft	6 Ft	8 Ft	10 Ft	12 Ft	14 Ft	16 Ft	18 Ft	20 Ft	22 Ft	24 Ft
11-22	1	8,370	8,140	7,900	7,670	7,430	7,190	6,950	6,710	6,470	6,240	6,000
12-24	1	10,040	9,760	9,470	9,180	8,900	8,620	8,330	8,050	7,770	7,480	7,200
14	1	11,710	11,380	11,050	10,720	10,390	10,060	9,720	9,390	9,060	8,730	8,400
15	1	13,200	12,750	12,300	11,840	11,380	10,920	10,460	10,000	9,540	9,080	8,620
16	1	14,920	14,390	13,850	13,310	12,770	12,230	11,690	11,150	10,610	10,070	9,530
11-22	2	7,940	7,720	7,500	7,280	7,050	6,830	6,600	6,370	6,150	5,930	5,700
12-24	2	9,540	9,270	9,000	8,730	8,460	8,190	7,920	7,650	7,380	7,110	6,840
14	2	11,120	10,810	10,500	10,180	9,870	9,550	9,230	8,920	8,610	8,300	7,990
15	2	12,400	11,970	11,540	11,110	10,680	10,250	9,820	9,390	8,960	8,530	8,100
16	2	13,980	13,470	12,960	12,450	11,940	11,430	10,920	10,410	9,900	9,390	8,880
11-22	3	7,530	7,320	7,110	6,900	6,680	6,470	6,250	6,040	5,830	5,620	5,400
12-24	3	9,030	8,780	8,520	8,270	8,010	7,750	7,500	7,240	6,990	6,730	6,470
14	3	10,530	10,240	9,940	9,650	9,350	9,050	8,750	8,450	8,150	7,850	7,550
15	3	12,030	11,700	11,370	11,040	10,710	10,380	10,050	9,720	9,390	9,060	8,730
16	3	13,530	13,180	12,830	12,480	12,130	11,780	11,430	11,080	10,730	10,380	10,030
11-22	4	7,120	6,920	6,720	6,520	6,310	6,110	5,900	5,700	5,500	5,300	5,100
12-24	4	8,530	8,290	8,050	7,810	7,570	7,330	7,080	6,840	6,600	6,360	6,120
14	4	9,950	9,670	9,390	9,110	8,830	8,550	8,260	7,980	7,700	7,420	7,140
15	4	11,370	11,000	10,630	10,260	9,890	9,520	9,150	8,780	8,410	8,040	7,670
16	4	12,790	12,390	11,990	11,590	11,190	10,790	10,390	9,990	9,590	9,190	8,790
11-22	5	6,700	6,510	6,320	6,130	5,940	5,750	5,560	5,370	5,180	4,990	4,800
12-24	5	8,040	7,810	7,580	7,350	7,130	6,900	6,670	6,440	6,220	5,990	5,760
14	5	9,370	9,110	8,850	8,580	8,310	8,050	7,780	7,510	7,250	6,980	6,720
15	5	10,700	10,400	10,100	9,800	9,500	9,200	8,900	8,600	8,300	8,000	7,700
16	5	12,030	11,700	11,370	11,040	10,710	10,380	10,050	9,720	9,390	9,060	8,730

^a When floor registers are used, see Fig. 2.

^b No. 21 for Btu values multiply 11-22 values by 0.83.

^c No. 23 for Btu values multiply 12-24 values by 0.83.