

VENTING MULTIPLE APPLIANCES

NOTES FOR MULTIPLE APPLIANCE VENTING (SEE TABLES 13.1, 14.1 AND 14.2)

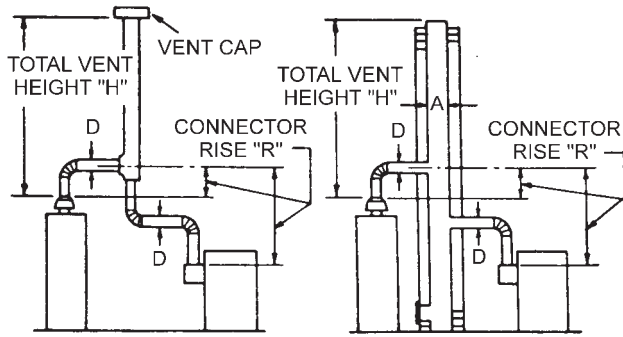


FIGURE 3

FIGURE 4

Double-Wall or Asbestos Cement Type B Vents or Single-Wall Metal Vents Serving Two or More Appliances. (See 13.1 & 14.1)

Masonry Chimney Serving Two or More Appliances. (See 14.2)

1. Maximum Vent Connector Length 1-1/2 feet for every inch of connector diameter. Greater lengths require increase in size, rise or total vent height, to obtain full capacity.
2. Each 90-degree turn in excess of the first two reduces the connector capacity by 10 percent.
3. Each 90-degree turn in the common vent reduces capacity by 10 percent.
4. Where possible, locate vent closer to or directly over smaller appliance connector.
5. Connectors must be equal to or larger than draft hood outlets.
6. If both connectors are same size, common vent must be at least one size larger, regardless of tabulated capacity.
7. Common vent must be equal to or larger than largest connector.
8. Interconnection fittings must be same size as common vent.
9. Use sea level input rating when calculating vent size for high altitude installation.
10. Designation "NR" in Tables 13.1, 14.1 & 14.2 indicates not recommended.

CAPACITY OF TYPE B DOUBLE-WALL VENT

13.1

Total Vent Height "H"	Connector Rise "R"	Vent Connector Diameter-D													
		3"	4"	5"	6"	7"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Maximum Appliance Input Rating in Thousands of Btu Per Hour															
6'	1'	26	46	72	104	142	185	289	416	577	755	955	1180	1425	1700
	2'	31	55	86	124	168	220	345	496	653	853	1080	1335	1610	1920
	3'	35	62	96	139	189	248	386	556	740	967	1225	1510	1830	2180
8'	1'	27	48	76	109	148	194	303	439	601	805	1015	1255	1520	1810
	2'	32	57	90	129	175	230	358	516	696	910	1150	1420	1720	2050
	3'	36	64	101	145	198	258	402	580	790	1030	1305	1610	1950	2320
10'	1'	28	50	78	113	154	200	314	452	642	840	1060	1310	1585	1890
	2'	33	59	93	134	182	238	372	536	730	955	1205	1490	1800	2150
	3'	37	67	104	150	205	268	417	600	827	1080	1370	1690	2040	2430
15'	1'	30	53	83	120	163	214	333	480	697	910	1150	1420	1720	2050
	2'	35	63	99	142	193	253	394	568	790	1030	1305	1610	1950	2320
	3'	40	71	111	160	218	286	444	640	898	1175	1485	1835	2220	2640
20'	1'	31	56	87	125	171	224	347	500	740	965	1225	1510	1830	2190
	2'	37	66	104	149	202	265	414	596	840	1095	1385	1710	2070	2470
	3'	42	74	116	168	228	300	466	672	952	1245	1575	1945	2350	2800
30'	1'	33	59	93	134	182	238	372	536	805	1050	1330	1645	1990	2370
	2'	39	70	110	158	215	282	439	632	910	1190	1500	1855	2240	2670
	3'	44	79	124	178	242	317	494	712	1035	1350	1710	2110	2550	3040
40'	1'	35	62	97	140	190	248	389	560	850	1110	1405	1735	2100	2500
	2'	41	73	115	166	225	295	461	665	964	1260	1590	1965	2380	2830
	3'	46	83	129	187	253	331	520	748	1100	1435	1820	2240	2710	3230
60' to 100'	1'	37	66	104	150	204	266	417	600	926	1210	1530	1890	2280	2720
	2'	44	79	123	178	242	316	494	712	1050	1370	1740	2150	2590	3090
	3'	50	89	138	200	272	355	555	800	1198	1565	1980	2450	2960	3520

Total Vent Height "H"	Common Vent Diameter														
	3"	4"	5"	6"	7"	8"	10"	12"	14"	16"	18"	20"	22"	24"	
Combined Appliance Input Rating in Thousands of Btu Per Hour															
6'	—	65	103	147	200	260	410	588	815	1065	1345	1660	1970	2390	
8'	—	73	114	163	223	290	465	652	912	1190	1510	1860	2200	2680	
10'	—	79	124	178	242	315	495	712	995	1300	1645	2030	2400	2920	
15'	—	91	144	206	280	365	565	825	1158	1510	1910	2360	2790	3400	
20'	—	102	160	229	310	405	640	916	1290	1690	2140	2640	3120	3800	
30'	—	118	185	266	360	470	740	1025	1525	1990	2520	3110	3680	4480	
40'	—	131	203	295	405	525	820	1180	1715	2240	2830	3500	4150	5050	
60'	—	NR	224	324	440	575	900	1380	2010	2620	3320	4100	4850	5900	
80'	—	NR	NR	344	468	610	955	1540	2250	2930	3710	4590	5420	6600	
100'	—	NR	NR	NR	479	625	975	1670	2450	3200	4050	5000	5920	7200	

See Figure 3 and Notes for Multiple Appliance Vents.

TECHNICAL DATA VENTING

CAPACITY OF A SINGLE-WALL METAL PIPE OR TYPE B ASBESTOS CEMENT VENT

14.1 Vent Connector Capacity

Total Vent Height "H"	Connector Rise "R"	Vent Connector Diameter-D					
		3"	4"	5"	6"	7"	8"
6'-8'	1'	21	40	68	102	146	205
	2'	28	53	86	124	178	235
	3'	34	61	98	147	204	275
15'	1'	23	44	77	117	179	240
	2'	30	56	92	134	194	265
	3'	35	64	102	155	216	298
30' and up	1'	25	49	84	129	190	270
	2'	31	58	97	145	211	295
	3'	36	68	107	164	232	321

Common Vent Capacity

Total Vent Height "H"	Common Vent Diameter						
	4"	5"	6"	7"	8"	10"	12"
6'	48	78	111	155	205	320	NR
8'	55	89	128	175	234	365	505
10'	59	95	136	190	250	395	560
15'	71	115	168	228	305	480	690
20'	80	129	186	260	340	550	790
30'	NR	147	215	300	400	650	940
50'	NR	NR	NR	360	490	810	1190

See Figure 3 and Notes for Multiple Appliance Vents.

EXAMPLE OF MULTIPLE VENT DESIGN USING DATA FROM TABLE 13.1 & 13.2

Double Wall Type B Vent

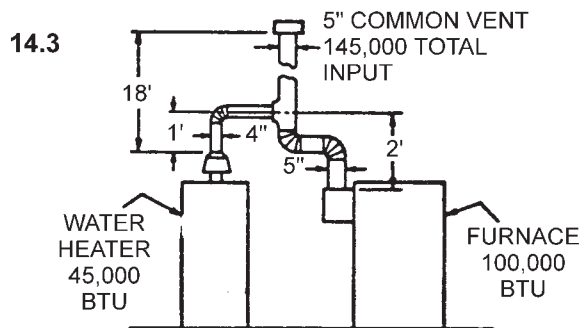


FIGURE 5

EXAMPLE: Connect a 45,000 Btu water heater with a 1 foot connector rise "R" and a 100,000 Btu furnace with a 2 foot connector rise "R" to a common vent with a minimum total vent height "H" of 18 feet. See Figure 5.

CAPACITY OF A MASONRY CHIMNEY AND SINGLE-WALL VENT CONNECTORS

14.2 Single-Wall Vent Connector Capacity

Total Vent Height "H"	Rise Connector "R"	Vent Connector Diameter-D					
		3"	4"	5"	6"	7"	8"
6'-8'	1'	21	39	66	100	140	200
	2'	28	52	84	123	172	231
	3'	34	61	97	142	202	269
15'	1'	23	43	73	112	171	225
	2'	30	54	88	132	189	256
30' and up	3'	34	63	101	151	213	289
	1'	24	47	80	124	183	250
	2'	31	57	93	142	205	282
	3'	35	65	105	160	229	312

Common Chimney Capacity

Total Vent Height "H"	Minimum Internal Area of Chimney-"A"					
	19	28	38	50	78	113
6'	45	71	102	142	245	NR
8'	52	81	118	162	277	405
10'	56	89	129	175	300	450
15'	66	105	150	210	360	540
20'	74	120	170	240	415	640
30'	NR	135	195	275	490	740
50'	NR	NR	NR	325	600	910

See Table 12.3 Page AOSTD63100 for Masonry Chimney Liner Sizes. See Figure 4 and Notes for Multiple Appliance Vents.

1. WATER HEATER VENT CONNECTOR SIZE EXAMPLE OF MULTIPLE VENT DESIGN

Using Table 12-1 read down Total Vent Height "H" column to 15 feet and read across 1 foot connector rise "R" line to Btu rating equal to or higher than water heater input rating. This figure shows 53,000 Btu and is in the column for four-inch connector. Since this is in excess of the water heater input it is not necessary to find the maximum input for an 18 foot minimum total vent height. Use a four-inch connector.

2. FURNACE VENT CONNECTOR SIZE

Under Vent Connector Tables read down Total Vent Height "H" column to 15 foot and read across 2 foot Connector Rise "R" line. Note 5 inch vent size shows 99,000 Btu per hour or less than furnace input. However, with 20 foot Total Height read across 2 foot connector rise line. Note 5 inch vent size shows 104,000 Btu per hour. Since 18 foot height is 3/5th of difference between 15 and 20 foot heights take difference between 99,000 and 104,000 or 5,000 and add 3/5ths of this to 15 foot figure of 99,000, $99,000 + 3,000 = 102,000$ which is maximum input for 18 foot Total Vent Height. Therefore a 5-inch connector would be the correct size for the furnace, providing the furnace had a five-inch or smaller draft hood outlet.

3. COMMON VENT SIZE

Total input to Common Vent is 145,000 Btu. Note that for 15 foot Total Vent Height "H" maximum Btu for 5 inch vent is 144,000. For 20 foot Total Vent Height "H" maximum Btu for 5 inch vent is 160,000.

Therefore for 18 foot Total Vent Height maximum allowable input would be 3/5th of difference between 144,000 and 160,000 = $3/5 \times 16,000$ or 9,600. $144,000 + 9,600 = 153,600$ which is greater than total input to common vent. Therefore common vent can be 5 inch diameter pipe.