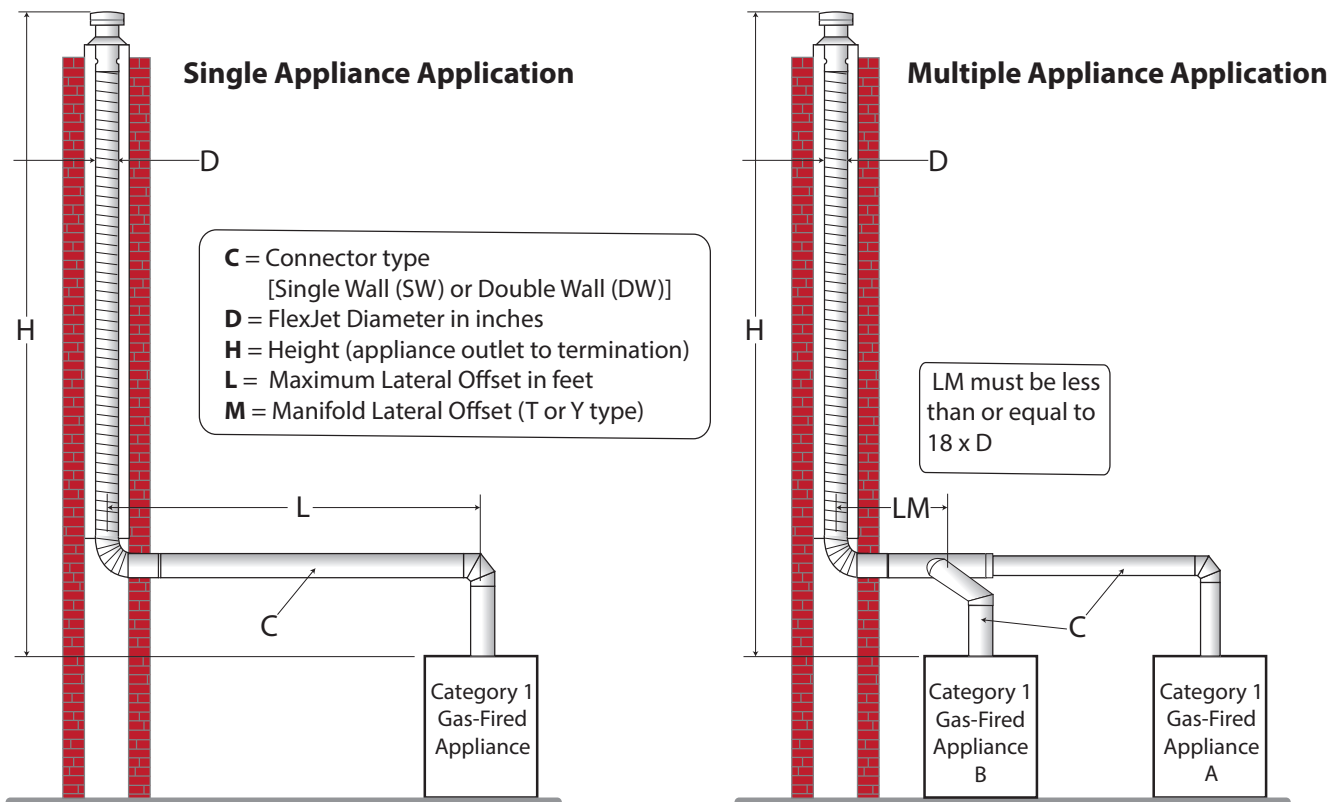


Sizing & Capacity Guidelines



General Guidelines

Per the National Fuel Gas Code (NFCG) and as specified in the NFPA 54/ANSI Z223.1 standard:

- You are required to follow the provided FlexJet installation instructions. (12.6.1.3)
- You are not permitted to use the space surrounding the chimney liner for the venting of other appliances (12.6.8.1) or for the intake of combustion air (12.6.8.2).
- Corrugated chimney liners, such as FlexJet, require a 20% reduction from NFPA 54 stipulated capacities (13.1.7 & 13.2.20). This reduction has been pre-calculated within the following sizing tables.
- One long radius 90° turn at the bottom of the liner is also factored into the sizing tables. For each additional offset or elbow up to 45° within the liner portion of the system, reduce the capacity by an additional 5%. Reduce capacity by an additional 10% for each elbow between 45° and 90°. (13.1.3 & 13.2.20)
- For multiple appliance applications, apply a 10% reduction to the listed capacity when using a manifold (LM) to combine vent connectors. The length of the vent manifold should not be greater than $18 \times D$. (13.2.4)

Using the Sizing Tables

- Use the diagrams and abbreviations listed above to interpret the table columns. Other table abbreviations include:
 - FAN = fan-assisted venting
 - NAT = naturally drafted venting
 - MIN & MAX = minimum & maximum
- Your goal is to find the smallest diameter of FlexJet that has the capacity to handle the rating limits of the system appliance(s).
- A usage example follows each table.

Single Appliance FlexJet Sizing

H	C	L	D																							
			3"			4"			5"			5.5"			6"			7"			8"					
			Appliance Input Rating Limits (x1000 BTU/h)																							
			FAN		NAT		FAN		NAT		FAN		NAT		FAN		NAT		FAN		NAT		FAN		NAT	
			MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX
15'	DW	2'	11	55	38	15	109	74	20	181	120	21	226	150	22	271	180	38	380	253	45	506	331			
		5'	22	52	36	30	104	70	39	175	114	44	220	144	49	264	174	64	370	240	76	496	322			
		10'	29	47	33	40	97	66	51	165	108	58	208	137	64	252	166	84	356	230	99	480	309			
	SW	2'	38	55	38	57	109	74	80	180	119	98	225	149	115	270	179	148	378	251	187	505	330			
		5'	51	50	35	75	102	69	102	173	112	123	217	143	144	261	174	182	367	238	231	493	320			
		10'	NA	NA	31	95	93	63	128	161	105	155	204	134	182	246	162	228	350	227	284	474	305			
25'	DW	2'	10	62	43	14	126	85	16	213	140	18	268	176	19	324	212	30	458	296	37	315	402			
		5'	21	59	41	29	21	82	37	207	134	42	261	170	46	315	206	60	448	289	71	603	394			
		10'	28	54	38	38	113	76	49	196	128	55	249	162	61	302	196	79	432	277	93	585	380			
	SW	2'	37	62	42	56	125	84	77	212	139	94	267	175	111	322	211	142	455	294	179	612	400			
		5'	50	57	40	73	119	80	99	205	132	119	258	168	139	312	204	175	444	286	220	599	391			
		10'	NA	NA	NA	92	109	74	124	191	126	149	244	159	174	296	192	218	424	273	271	577	375			
30'	DW	2'	9	65	45	13	133	90	14	226	148	16	286	186	18	346	224	27	490	315	33	661	428			
		5'	21	62	43	28	128	86	36	220	141	41	278	180	45	337	218	58	480	308	69	649	419			
		10'	27	56	40	37	120	82	48	210	137	54	267	173	59	324	209	77	464	297	91	630	406			
	SW	2'	37	64	45	55	131	89	76	225	146	93	284	185	109	343	223	139	488	314	175	658	426			
		5'	49	59	42	72	126	85	98	217	138	117	275	178	136	334	217	171	476	306	215	645	417			
		10'	NA	NA	NA	91	115	78	122	204	134	147	261	170	171	318	206	213	456	294	265	622	401			
35'	DW	2'	9	66	46	13	136	92	14	234	152	16	296	192	17	359	231	26	511	325	31	691	444			
		5'	21	63	NA	28	131	89	36	227	146	40	289	186	45	350	225	57	500	319	68	679	435			
		10'	27	57	NA	37	124	84	47	217	141	53	277	178	58	337	216	76	484	308	90	660	422			
	SW	2'	37	65	46	55	135	91	75	232	151	92	294	190	108	356	230	138	508	324	173	688	442			
		5'	49	60	NA	72	129	87	97	224	143	116	285	184	135	347	224	169	496	316	212	674	433			
		10'	NA	NA	NA	91	118	NAT	121	211	138	145	271	175	169	330	213	211	476	304	262	651	417			
45'	DW	2'	8	68	48	12	143	96	14	249	161	15	317	203	16	385	244	23	552	346	28	750	476			
		5'	20	65	NA	27	138	93	35	242	155	39	309	197	44	376	239	56	541	340	66	738	468			
		10'	26	60	NA	36	131	89	46	232	148	51	298	190	57	364	231	74	525	330	87	719	455			
	SW	2'	36	66	48	54	141	95	74	247	160	90	315	201	105	383	243	135	549	344	170	747	474			
		5'	48	63	NA	71	136	91	95	239	153	114	306	195	132	373	237	166	537	337	207	733	465			
		10'	NA	NA	NA	90	125	NA	119	226	145	142	291	186	164	356	227	206	517	325	256	709	450			

Sample Problem

100,000 BTU/h furnace with fan-assisted venting • 30' vent height • max connector length is 5' • chimney has a 2-turn offset

What size FlexJet is needed?

Solution Method

Looking across the 30' row and the 5' connector sub-rows, find the smallest diameter with the MIN below and MAX above 100,000 BTU/h. Remember to deduct 10% from the listed capacities due to the chimney offset.

Solution

A 4" diameter FlexJet will meet the criteria using either a single wall or double wall (B-vent) connector.

Multiple Appliances FlexJet Sizing

H	C	D																	
		4"			5"			5.5"			6"			7"			8"		
		Combined Appliance Input Rating Limits (x1000 BTU/h)																	
		FAN Only	FAN & NAT	NAT Only	FAN Only	FAN & NAT	NAT Only	FAN Only	FAN & NAT	NAT Only	FAN Only	FAN & NAT	NAT Only	FAN Only	FAN & NAT	NAT Only	FAN Only	FAN & NAT	NAT Only
15'	DW	100	90	73	156	131	115	191	157	140	226	182	165	342	282	224	445	355	292
	SW	97	86	70	151	127	112	186	152	136	220	177	160	333	274	219	435	347	286
25'	DW	116	104	88	184	157	138	227	189	168	270	221	198	409	341	268	537	434	350
	SW	111	100	84	178	152	135	220	183	163	262	214	192	398	332	261	524	423	342
30'	DW	122	110	94	195	168	148	242	203	181	289	238	213	438	367	288	576	468	376
	SW	116	106	90	189	162	144	235	196	175	280	229	206	426	357	279	562	456	367
35'	DW	125	113	97	202	175	154	252	212	188	301	249	222	457	385	301	603	492	292
	SW	119	109	93	195	168	150	243	204	182	291	239	214	444	374	291	588	479	382
45'	DW	131	119	104	216	188	165	271	230	202	325	271	239	494	420	326	656	541	424
	SW	124	114	99	208	180	161	261	220	195	314	260	229	480	407	316	640	526	413

Sample Problem

100,000 BTU/h furnace with fan-assisted venting • 40,000 BTU/h naturally drafted water heater • y-style manifold will be needed to join the connectors • 35' vent height • chimney has a 2-turn offset

What size FlexJet is needed?

Solution Method

Looking across the 35' row and at the intersections of this row with the FAN + NAT columns, find the smallest diameter with a capacity of at least 140,000 BTU/h. Remember to deduct 20% from the listed capacities due to the manifold and chimney offset.

Solution

A 5" diameter FlexJet with double wall connectors will meet the criteria ($175,000 \times 0.8 = 140,000$ BTU/h). Should you wish to factor in a safety margin, the 5.5" diameter FlexJet can handle the task with either a single wall or double wall connector.