



SPAS AND HOT TUBS

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Most spas and hot tubs require regenerative blowers to provide the pressure and flow needed to agitate the water. Sizing a blower can be as simple as following these steps:

1. Determine the number of jets orifices in the spa.
2. Calculate the total area of all the orifices.
Total area = (No. of holes) x 3.1416 x radius²
3. Select the proper blower by finding the number and size of the orifices (or jets), making sure that the maximum depth for the blower is not exceeded.

EXAMPLE

Select a blower for a 6' x 6' spa with a depth of three feet, that has (50) 3/16" orifices:

1. Number and size of orifices = 50 x 3/16"
2. Total area of orifices = 50 x 3.1416 x .0942² = 1.39 in.²
3. From the Blower Selection Chart 1.39 in.² is greater than the minimum requirement for a VFC40 blower. The depth of 36" is within the maximum limit for water depth. Therefore, the VFC40 blower should be selected.

ORIFICE AREA CHART	
Orifice Size	Area (in. ²)
1/8" (0.125)	0.012
5/32" (0.156)	0.019
3/16" (0.188)	0.028
7/32" (0.219)	0.038
1/4" (0.250)	0.049

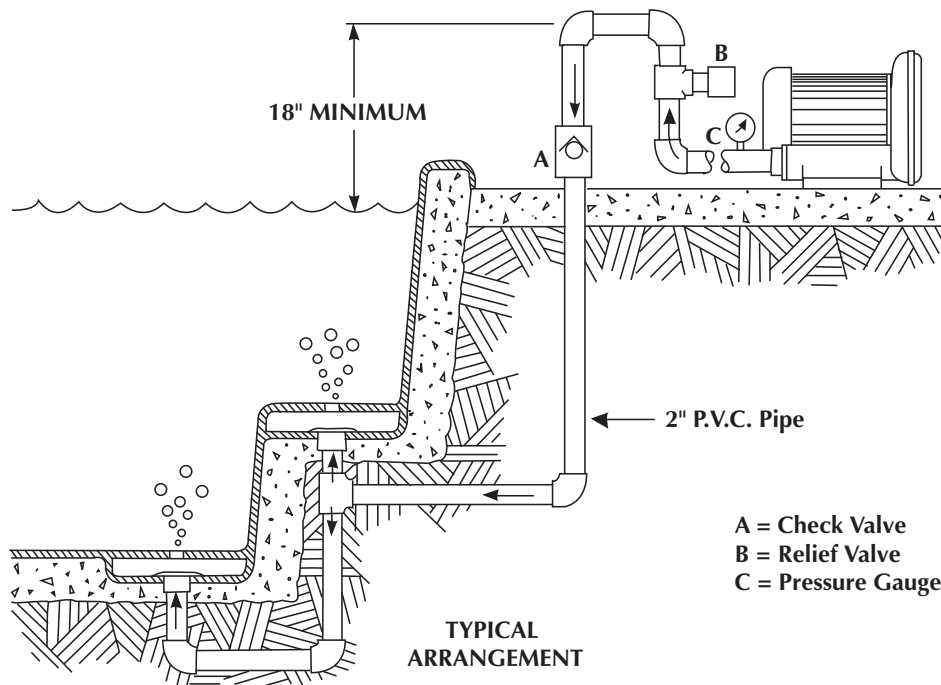
SPA SURFACE AREA CHART (FT. ²)			
Spa Depth	VFC40	BLOWER MODEL	
		VFC50	VFC60
30"	64	105	140
36"	52	98	128
42"	46	92	117
48"	-	86	111

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FUJI ELECTRIC
APPLICATIONS

NOTES

1. Two 45° ells are preferred to one 90° ell.
2. Install a loop at least 18" above the water level.
3. If back-pressure on the blower is excessive, it may be necessary to add more orifices, or to enlarge the existing orifices.
4. A check valve with a very low pressure drop should be placed in an accessible location, close to the spa.
5. Piping to the spa should be 2" or greater. On runs longer than 50', the first 25' should be 2 1/2" minimum. Due to the discharge temperature from some blowers (depending on operating conditions) PVC pipe may not be a satisfactory material.



BLOWER SELECTION CHART

Model	Maximum water depth	Number of jets	Orifice size	Minimum number of orifices	Minimum total hole area (in. ²)
VFC40	42"	3 - 7	1/8"	98	1.2
			5/32"	63	
			3/16"	43	
			7/32"	32	
			1/4"	25	
VFC50	64"	8 - 13	1/8"	162	2.0
			5/32"	105	
			3/16"	72	
			7/32"	53	
			1/4"	41	
VFC60	84"	12 - 17	1/8"	244	3.0
			5/32"	157	
			3/16"	109	
			7/32"	80	
			1/4"	61	