Sizing a Bore

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

When you have a constant flow rate:

To find the correct bore when you have a constant flow rate locate the chart that has the correct valve / pipe size for you system. Then under the nominal flow column find the flow rate that is closest to the required flow the bore is list in the first column of that row.

A 3" valve requires a constant flow of 200 gpm. Using the 3" chart the closest nominal flow rate is 185 gpm; correct bore size for the valve is 2.00".

3" Valve / Pipe Size

Bore Size	Flow- gpm		
	Min	Max	Nominal
2.29	122	477	265
2.20	106	418	235
2.00	85	335	185
1.80	67	258	140
1.60	52	198	110
1.40	40	150	85
1.20	30	110	60
1.00	20	75	40

When you have a flow range:

Find the sizing chart that has the correct valve / pipe size for your system. Look for flow range (of your system) that falls between the Min and Max limits. If your flow range falls between more then one bore size, you will need to use the flow rate that system will operate at most of the time. Locate that flow rate under the nominal flow column. Use the bore size that corresponds with the flow range and nominal flow rate.

An 8" system has a flow range 450-1300 gpm. Using the 8" chart you can see that that more then bore size falls in that range. The system will operate at 850 gpm most of the time. The nominal flow closest to that is 858 gpm; so the correct bore for the system is 4.40".

8" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
6.00	832	3315	1849
5.80	763	3035	1700
5.60	681	2715	1548
5.40	624	2476	1395
5.20	573	2276	1272
5.00	517	2057	1147
4.80	473	1878	1047
4.60	427	1700	948
4.40	**386**	**1536**	**858**
4.20	348	1377	775
4.00	312	1238	700

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

2" Valve / Pipe Size

Bore Size	Flow – gpm		
	Min	Max	Nominal
1.55	57	218	123
1.50	52	200	114
1.40	43	165	92
1.20	30	115	63
1.00	20	75	44
.80	14	50	27

2-1/2" Valve / Pipe Size

Bore Size	Flow – gpm		
	Min	Max	Nominal
1.87	82	326	177
1.60	57	218	118
1.40	43	159	87
1.20	30	114	60
1.00	20	77	41
.80	13	48	26

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

3" Valve / Pipe Size

Bore Size	Flow- gpm		
	Min	Max	Nominal
2.29	122	477	265
2.20	106	418	235
2.00	85	335	185
1.80	67	258	140
1.60	52	198	110
1.40	40	150	85
1.20	30	110	60
1.00	20	75	40

4" Valve / Pipe Size

Bore Size	Flow- gpm		
	Min	Max	Nominal
3.00	207	818	445
2.80	173	678	385
2.60	142	559	305
2.40	117	458	255
2.20	97	382	210
2.00	80	310	170
1.80	65	250	135
1.60	50	195	108
1.40	40	150	82
1.20	30	110	60

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

6" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
4.60	495	1958	1100
4.40	440	1738	975
4.20	385	1515	845
4.00	335	1315	745
3.80	300	1195	665
3.60	270	1058	585
3.40	235	917	515
3.20	205	800	445
3.00	180	700	390
2.80	155	600	335
2.60	135	519	290
2.40	115	438	240

8" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
6.00	832	3315	1849
5.80	763	3035	1700
5.60	681	2715	1548
5.40	624	2476	1395
5.20	573	2276	1272
5.00	517	2057	1147
4.80	473	1878	1047
4.60	427	1700	948
4.40	386	1536	858
4.20	348	1377	775
4.00	312	1238	700

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

10" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
7.50	1300	5197	2895
7.00	1080	4298	2395
6.50	885	3518	1945
6.00	735	2919	1645
5.50	605	2400	1345
5.00	495	1958	1100
4.50	395	1558	865
4.00	315	1238	685
3.50	240	939	520
3.00	180	700	380

12" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
9.00	1855	7398	4195
8.50	1580	6297	3495
8.00	1355	5398	3000
7.50	1155	4596	2595
7.00	985	3918	2195
6.50	845	3359	1870
6.00	700	2800	1570
5.50	585	2319	1300
5.00	485	1917	1070
4.50	390	1538	865

Flomatic Corporation, 15 Pruyn's Island, Glens Falls, New York 12801
Phone: 518-761-9797 Fax: 518-761-9798 www.flomatic.com

CONTROL VALVES

Orifice Plate Sizing Guide

Flomatic Corporation

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

14" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
10.00	2355	9396	5190
9.50	2030	8096	4495
9.00	1755	7000	3895
8.50	1505	5997	3395
8.00	1305	5196	2895
7.50	1155	4599	2490
7.00	965	3839	2145
6.50	825	3278	1845
6.00	705	2797	1545
5.50	595	2338	1300
5.00	485	1919	1070
4.50	390	1538	855

16" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
11.50	3110	12390	7000
11.00	2710	10795	6095
10.50	2410	9595	5395
10.00	2110	8395	4695
9.50	1860	7395	4195
9.00	1660	6590	3645
8.50	1460	5795	3245
8.00	1260	5000	2845
7.50	1120	4395	2445
7.00	960	3790	2145
6.50	820	3235	1800
6.00	710	2790	1545
5.50	580	2290	1290

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

18" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
13.00	5225	15495	9000
12.00	4125	12290	7090
11.50	3725	11000	6395
11.00	3325	9845	5695
10.50	2960	8800	5090
10.00	2610	7845	4545
9.50	2360	6200	3600
9.00	2110	6195	3590
8.50	1860	5500	3190
8.00	1660	4845	2795
7.50	1410	4245	2445
7.00	1260	3645	2090

20" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
14.00	6000	17900	10450
13.50	5350	15900	9450
13.00	4850	14450	8450
12.50	4350	12850	7450
12.00	3950	11650	6650
11.50	3425	10500	6050
11.00	3225	9450	5450
10.50	2925	8550	5000
10.00	2615	7650	4450
9.50	2315	6050	3550
9.00	2010	6050	3550
8.50	1810	5350	3150

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

24" Valve / Pipe Size

Bore Size	Flow - gpm		
	Min	Max	Nominal
17.00	8550	25450	15000
16.00	7550	21450	12450
15.00	6150	18350	10450
14.50	5750	17000	9750
14.00	5225	15550	9000
13.50	4825	14350	8250
13.00	4425	13150	7550
12.50	4025	12050	6900
12.00	3715	11050	6350
11.50	3415	10050	5750
11.00	3115	9150	5250
10.50	2810	8250	4750
10.00	2510	7450	4350

Note: This is a guide and all orifice plate sizing information should be given to factory for the final determination.

WARRANTY: Danfoss Flomatic valves are guaranteed against defects of materials or workmanship when used for the services recommended. If in any recommended service, a defect develops due to material or workmanship, and the device is returned, freight prepaid, to Danfoss Flomatic within 12 months from the date of purchase, it will be repaired or replaced free of charge. Danfoss Flomatics' liability shall be limited to our agreement to repair or replace the valve only.

Flomatic Corporation, 15 Pruyn's Island, Glens Falls, New York 12801
Phone: 518-761-9797 Fax: 518-761-9798 www.flomatic.com