IMI FLOW DESIGN

Brass Model UA

Venturi Balancing Data:

Flow (gpm) versus Differential Pressure (in W.C.)

Engineering GREAT Solutions

IMI Hydronic Engineering

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Using the Differential Pressure (D.P.) Tables

1. **The recommended ranges are shown in bold.**
2. Generally, the recommended low DP signal is 24" so it can be read on most instuments.
3. The upper limit is an effort to minimize the permanent pressure drop. However, any model can be operated above the limit if the permanent drop is acceptable.
4. The following equation has been approximated from the differential pressure table:

   $INWC = (B \bullet gpm)^2$
5. The permanent pressure loss can be calculated in the standard way from the valve's CV and flow rate:

   $PSID = (gpm/Cv)^2$

Venturi No.	B	Cv
1	24.4	0.283
2	11.1	0.771
3	4.86	2.15
4	2.21	4.79
5	1.78	5.95
6	0.819	17.5
7	0.467	18.4
8	0.217	68.5

Flow Rate (gpm)	1	2	3	4	5	6	7	8
0.1	7.3							
0.2	**27.1**	5.5						
0.3	**58.6**	12.1						
0.4	**101.2**	**21.2**						
0.5	**154.7**	**32.7**	6.7					
0.6	**218.8**	**46.7**	9.5					
0.65	**254.7**	**54.6**	11.1					
0.7	**293.3**	**63.1**	12.8					
0.8	378.0	**81.9**	16.6					
0.9	472.8	**103.1**	20.9					
0.95	524.0	**114.6**	23.2					
1.0		**126.7**	**25.6**					
1.1		**152.6**	**30.8**	5.4				
1.2		**180.9**	**36.5**	6.5	5.1			
1.3		**211.5**	**42.6**	7.6	6.0			
1.4		**244.4**	**49.1**	8.9	6.9			
1.5		**279.6**	**56.2**	10.2	7.9			
1.6		317.2	**63.6**	11.6	9.0			
1.7		357.1	**71.6**	13.2	10.1			
1.8		399.2	**79.9**	14.8	11.3			
1.9		443.7	**88.7**	16.5	12.6			
2.0		490.4	**98.0**	18.4	13.9			
2.2			**117.9**	**22.3**	16.7			
2.4			**139.5**	**26.7**	19.8			
2.6			**162.8**	**31.4**	**23.2**	5.0		
2.8			**188.0**	**36.6**	**26.8**	5.8		
3.0			**214.8**	**42.1**	**30.7**	6.7		
3.2			**243.4**	**48.0**	**34.8**	7.6		

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Flow Rate (gpm)	1	2	3	4	5	6	7	8
3.4			**273.7**	**54.4**	**39.2**	8.5		
3.6			305.7	**61.1**	**43.9**	9.5		
3.8			339.4	**68.2**	**48.7**	10.6		
4.0			374.8	**75.8**	**53.9**	11.7		
4.2			412.0	**83.7**	**59.3**	12.8	5.3	
4.4			450.8	**92.1**	**64.9**	14.1	5.7	
4.6			491.3	**100.9**	**70.8**	15.3	6.2	
4.8			533.5	**110.0**	**77.0**	16.7	6.7	
5.0				**119.6**	**83.4**	18.0	7.3	
5.2				**129.6**	**90.1**	19.5	7.8	
5.4				**140.0**	**97.0**	21.0	8.4	
5.6				**150.8**	**104.1**	22.5	9.0	
5.8				**162.0**	**111.5**	**24.1**	9.6	
6.0				**173.6**	**119.2**	**25.7**	10.2	
6.2				**185.7**	**127.1**	**27.4**	10.8	
6.4				**198.1**	**135.2**	**29.2**	11.5	
6.6				**211.0**	**143.6**	**31.0**	12.2	
6.8				**224.2**	**152.2**	**32.9**	12.9	
7.0				**237.9**	**161.1**	**34.8**	13.6	
7.5				**274.0**	**184.4**	**39.8**	15.4	
8.0				312.6	**209.2**	**45.1**	17.4	
8.5				353.8	**235.6**	**50.8**	19.5	
9.0				397.7	**263.5**	**56.8**	21.6	
9.5				444.2	**292.9**	**63.1**	**23.9**	
10.0				493.3	323.8	**69.7**	**26.3**	5.1
11.0					390.2	**83.9**	**31.4**	6.2
12.0					462.7	**99.4**	**36.9**	7.3
13.0					541.1	**116.2**	**42.8**	8.6
14.0						**134.3**	**49.2**	9.9
15.0						**153.6**	**55.9**	11.4
16.0						**174.2**	**63.0**	12.9
17.0						**196.0**	**70.5**	14.5
18.0						**219.2**	**78.4**	16.2
19.0						**243.5**	**86.7**	18.0
20.0						**269.1**	**95.3**	20.0
21.0						**296.0**	**104.4**	22.0
22.0						324.1	**113.8**	**24.1**
23.0						353.4	**123.6**	**26.3**
24.0						384.0	**133.7**	**28.5**
25.0						415.8	**144.3**	**30.9**

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Flow Rate (gpm)	1	2	3	4	5	6	7	8
26.0						448.8	**155.2**	**33.4**
27.0						483.1	**166.4**	**36.0**
28.0						518.5	**178.1**	**38.6**
29.0							**190.1**	**41.4**
30.0							**202.4**	**44.2**
31.0							**215.1**	**47.1**
32.0							**228.2**	**50.2**
33.0							**241.6**	**53.3**
34.0							**255.3**	**56.5**
35.0							**269.5**	**59.8**
36.0							**283.9**	**63.2**
37.0							**298.7**	**66.7**
38.0							313.9	**70.3**
39.0							329.4	**74.0**
40.0							345.3	**77.7**
41.0							361.5	**81.6**
42.0							378.0	**85.5**
43.0							394.9	**89.6**
44.0							412.1	**93.7**
45.0							429.7	**97.9**
46.0							447.6	**102.3**
47.0							465.8	**106.7**
48.0							484.4	**111.2**
49.0							503.3	**115.7**
50.0								**120.4**
52.0								**130.0**
54.0								**140.0**
56.0								**150.4**
58.0								**161.1**
60.0								**172.2**
62.0								**183.6**
64.0								**195.4**
66.0								**207.6**
68.0								**220.1**
70.0								**233.0**
72.0								**246.2**
74.0								**259.8**
76.0								**273.8**
78.0								**288.1**
80.0								**302.7**
82.0								317.8

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Flow Rate (gpm)	1	2	3	4	5	6	7	8
84.0								333.1
86.0								348.9
88.0								365.0
90.0								381.4
92.0								398.2
94.0								415.4
96.0								432.9
98.0								450.8
100.0								469.0
102.0								487.6
104.0								506.5