How to Calculate Jetting

Jetting Calculating jet sizing for Aquamist systems is quite easy as we will walk you through a few simple steps, then some examples. At the bottom of the page you will find some conversion factors if you are using other jets and systems.

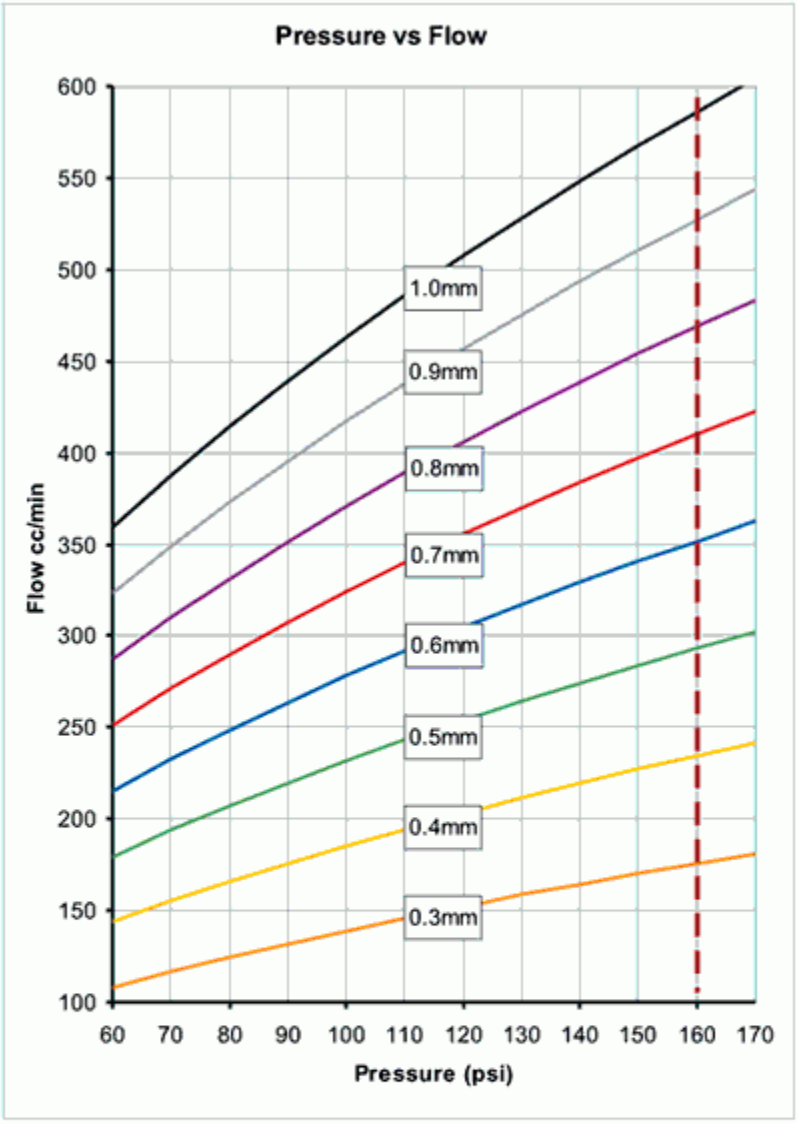
Example 1

1) First, you will need three pieces of information. Fuel injector size, number of cylinders(hopefully this one comes easy) and peak boost pressure.
2) Take the number of cylinders and multiply by the injector size. For example, let's use a 4 cylinder with 800cc injectors. This car would have a total of 3200cc of injectors.

   There is a general rule of thumb for injection. Three guidelines are below:
   For 100% water target 10% – 15% of fuel flow
   For 50/50 mix target 15% – 20% of fuel flow
   For 100% methanol target 20% – -25% of fuel flow
   For this example we will use a 50/50 mix. So find the range of jetting you need by the following:

3) Multiply your total fuel injector number from step 2 by 15% and 20%.
   3200cc x 15% = 480cc
   3200cc x 20% = 640cc
   NOTE: You will need to add 10% for pumping losses through the system.

4) Subtract your peak boost pressure from the system running pressure on the chart and find the appropriate jetting range.



JET	60	70	80	90	100	110	120	130	140	150	160	170 PSI
0.3	108	116	124	132	139	146	152	158	164	170	176	181
0.4	144	155	166	176	185	194	203	211	219	227	234	242
0.5	194	207	220	232	243	254	264	274	284	293	302	179
0.6	215	233	249	264	278	292	305	317	329	340	352	362
0.7	251	271	290	308	324	340	355	370	384	397	410	423
0.8	287	310	332	352	371	389	406	423	439	454	469	483
0.9	323	349	373	396	417	437	457	475	493	511	527	544
1.0	359	388	414	440	463	486	508	528	548	567	586	604

FLOW RATE: CC/MIN

For the example being discussed we want to target 20% which would be 640cc. We will then need to add 10% for the pumping losses, so we are looking for 640cc x 1.1 = 704cc. We also know our peak boost is 30psi. The new Aquatec pumps run at 165psi, the older Shurflo pumps at 125psi. We have a brand new HFS-6 installed in our test car so we use the 165psi starting point.

We start at the 165psi line, and subtract our 30psi boost pressure. This means we need to look at a phantom line of 135psi. So we have our 704cc target, we look down the columns and estimate that between the 130 and 140 columns 704cc is going to fall around…….wait, it's off the chart. We need to use two jets. So, we split the 704cc in half and see that 352cc falls between the 130 and 140 columns right right between the .6mm and .7mm jet range. In this instance we will pick two .7mm jet as we can always trim the flow down with the gain (and trim on HFS-6) functions. Now, the hardest part is finding a spot for two injectors in the intake system.

IMPORTANT NOTE: It is best to test your jetting into a container and measure the flow. Since every build and configuration is different this will be your best measure of the system performance.

Example 2:
6 cylinder, 1000cc injectors, 35psi boost and we will run 100% methanol.
6 x 1000cc = 6000cc.
6000cc x .25 = 1500cc
1500cc x 10% for pumping losses = 1650cc.
1650 / 3 = 550cc for each jet.

Now we are getting into a gray area because the HFS series systems max out at about 1600cc of flow. Since we are calculating only 50cc more and the pumping losses pushed us over the top we should be fine.
From the chart we can see we will need 3 jets to get the job done. So we look down the 130psi line (165-35 peak boost = 130) and find the 550cc for each jet falls just above the 1.0mm jetting. We are at the limit of the system and jetting at this point, but the system should work OK. *The best test to see your actual flow is to measure the flow into a container through the system.*

Conversions from other systems
1 GPH = 63CC/MIN

GPH jets are calculated at 100psi. Since most systems vary the pressure to the jet to vary flow it's easiest to use a chart to find your actual GPH jetting rate.

Nozzle size	40 psi	60 psi	80 psi	100 psi	200 psi	300 psi	500 psi
M1	0.63	0.77	0.89	1.00	1.41	1.73	2.24
M2	1.26	1.55	1.79	2.00	2.83	3.46	4.47
M3	1.90	2.32	2.68	3.00	4.24	5.20	6.71
M4	2.53	3.10	3.58	4.00	5.66	6.93	8.94
M5	3.16	3.87	4.47	5.00	7.07	8.66	11.18
M10	6.32	7.75	8.94	10.00	14.14	17.32	22.36
M15	9.49	11.62	13.42	15.00	21.21	25.98	33.54
MW5	3.16	3.87	4.47	5.00	7.07	8.66	11.18
MW7	4.43	5.42	6.26	7.00	9.90	12.12	15.65
MW11	6.96	8.52	9.84	11.00	15.56	19.05	24.60
MW15	9.49	11.62	13.42	15.00	21.21	25.98	33.54

Even though your pump is rated at 250psi, in reality it probably never injects at that pressure, especially with bigger nozzles. Use 150-175psi for realistic numbers when estimating what jetting you may have now.

Notice that the M nozzle chart is not linear; it is a square function. So the jump in flow from 100-200psi is not the same as the 200-300psi flow change.