

# PMT-U Sizing Table



Inlet Diameter		Throat Diameter		Beta Ratio	Overall Length		Outlet Diameter		ΔP = Differential Pressure of 100" wc (24.864 kPa)						
(inches)	(mm)	(inches)	(mm)		(inches)	(mm)	(inches)	(mm)	Water Flow at 60 F (16 C)					ΔH = Headloss	
									US GPM	US MGD	LPS	m <sup>3</sup> /d	R <sub>D</sub> (10 <sup>-3</sup> )	in. wc	kPa
3.000	76.2	1.500	38.1	0.5000	10.00	254.0	2.50	63.5	111.42	0.160	7.03	607.34	105	4.4	1.08
3.000	76.2	1.800	45.7	0.6000	9.00	228.6	2.60	66.0	160.52	0.231	10.13	875.00	151	3.7	0.92
3.000	76.2	2.100	53.3	0.7000	7.80	198.1	2.70	68.6	222.41	0.320	14.03	1212.33	209	3.1	0.77
4.000	101.6	2.000	50.8	0.5000	13.40	340.4	3.30	83.8	198.08	0.285	12.50	1079.72	140	4.4	1.08
4.000	101.6	2.400	61.0	0.6000	12.00	304.8	3.50	88.9	285.37	0.411	18.00	1555.55	202	3.7	0.92
4.000	101.6	2.800	71.1	0.7000	10.40	264.2	3.60	91.4	395.39	0.569	24.95	2155.26	279	3.1	0.77
6.000	152.4	3.000	76.2	0.5000	20.00	508.0	5.00	127.0	445.68	0.642	28.12	2429.38	210	4.4	1.08
6.000	152.4	3.600	91.4	0.6000	17.90	454.7	5.20	132.1	642.08	0.925	40.51	3499.99	302	3.7	0.92
6.000	152.4	4.200	106.7	0.7000	15.60	396.2	5.40	137.2	889.62	1.281	56.13	4849.33	419	3.1	0.77
8.000	203.2	4.000	101.6	0.5000	23.10	586.7	6.70	170.2	792.31	1.141	49.99	4318.89	280	4.4	1.08
8.000	203.2	4.800	121.9	0.6000	20.10	510.5	7.00	177.8	1141.48	1.644	72.02	6222.20	403	3.7	0.92
8.000	203.2	5.600	142.2	0.7000	17.00	431.8	7.20	182.9	1581.55	2.277	99.78	8621.02	559	3.1	0.77
10.000	254.0	5.000	127.0	0.5000	28.80	731.5	8.30	210.8	1237.99	1.783	78.10	6748.26	350	4.4	1.08
10.000	254.0	6.000	152.4	0.6000	25.10	637.5	8.70	221.0	1783.56	2.568	112.53	9722.19	504	3.7	0.92
10.000	254.0	7.000	177.8	0.7000	21.30	541.0	9.10	231.1	2471.17	3.558	155.91	13470.35	698	3.1	0.77
12.000	304.8	6.000	152.4	0.5000	34.60	878.8	10.00	254.0	1782.70	2.567	112.47	9717.50	420	4.4	1.08
12.000	304.8	7.200	182.9	0.6000	30.10	764.5	10.50	266.7	2568.33	3.698	162.04	13999.95	605	3.7	0.92
12.000	304.8	8.400	213.4	0.7000	25.50	647.7	10.90	276.9	3558.49	5.124	224.51	19397.30	838	3.1	0.77
14.000	355.6	7.000	177.8	0.5000	40.30	1023.6	11.70	297.2	2426.46	3.494	153.09	13226.60	490	4.4	1.08
14.000	355.6	8.400	213.4	0.6000	35.10	891.5	12.20	309.9	3495.78	5.034	220.55	19055.49	705	3.7	0.92
14.000	355.6	9.800	248.9	0.7000	29.70	754.4	12.70	322.6	4843.50	6.975	305.58	26401.88	977	3.1	0.77
16.000	406.4	8.000	203.2	0.5000	46.10	1170.9	13.40	340.4	3169.25	4.564	199.95	17275.56	560	4.4	1.08
16.000	406.4	9.600	243.8	0.6000	40.10	1018.5	14.00	355.6	4565.92	6.575	288.06	24888.80	806	3.7	0.92
16.000	406.4	11.200	284.5	0.7000	34.00	863.6	14.50	368.3	6326.20	9.110	399.12	34484.09	1117	3.1	0.77
18.000	457.2	9.000	228.6	0.5000	51.90	1318.3	15.00	381.0	4011.08	5.776	253.06	21864.38	630	4.4	1.08
18.000	457.2	10.800	274.3	0.6000	45.10	1145.5	15.70	398.8	5778.74	8.321	364.58	31499.89	907	3.7	0.92
18.000	457.2	12.600	320.0	0.7000	38.20	970.3	16.30	414.0	8006.60	11.530	505.14	43643.93	1257	3.1	0.77
20.000	508.0	10.000	254.0	0.5000	57.60	1463.0	16.70	424.2	4951.95	7.131	312.42	26993.06	700	4.4	1.08
20.000	508.0	12.000	304.8	0.6000	50.10	1272.5	17.50	444.5	7134.25	10.273	450.10	38888.75	1008	3.7	0.92
20.000	508.0	14.000	355.6	0.7000	42.50	1079.5	18.20	462.3	9884.69	14.234	623.63	53881.39	1396	3.1	0.77
24.000	609.6	12.000	304.8	0.5000	69.10	1755.1	20.10	510.5	7130.81	10.268	449.88	38870.00	839	4.4	1.08
24.000	609.6	14.400	365.8	0.6000	60.20	1529.1	21.00	533.4	10273.32	14.794	648.15	55999.80	1209	3.7	0.92
24.000	609.6	16.800	426.7	0.7000	51.00	1295.4	21.80	553.7	14233.96	20.497	898.02	77589.20	1676	3.1	0.77
30.000	762.0	15.000	381.0	0.5000	86.40	2194.6	25.10	637.5	11141.89	16.044	702.94	60734.38	1049	4.4	1.08
30.000	762.0	18.000	457.2	0.6000	75.20	1910.1	26.20	665.5	16052.06	23.115	1012.73	87499.69	1512	3.7	0.92
30.000	762.0	21.000	533.4	0.7000	63.70	1618.0	27.30	693.4	22240.56	32.026	1403.16	121233.13	2095	3.1	0.77
36.000	914.4	18.000	457.2	0.5000	103.70	2634.0	30.10	764.5	16044.32	23.104	1012.24	87457.50	1259	4.4	1.08
36.000	914.4	21.600	548.6	0.6000	90.20	2291.1	31.50	800.1	23114.97	33.286	1458.33	125999.56	1814	3.7	0.92
36.000	914.4	25.200	640.1	0.7000	76.40	1940.6	32.70	830.6	32026.41	46.118	2020.55	174575.71	2513	3.1	0.77
42.000	1066.8	21.000	533.4	0.5000	120.90	3070.9	35.20	894.1	21838.11	31.447	1377.77	119039.38	1469	4.4	1.08
42.000	1066.8	25.200	640.1	0.6000	105.30	2674.6	36.70	932.2	31462.05	45.305	1984.95	171499.40	2116	3.7	0.92
42.000	1066.8	29.400	746.8	0.7000	89.10	2263.1	38.20	970	43591.50	62.772	2750.20	237616.94	2932	3.1	0.77
48.000	1219.2	24.000	609.6	0.5000	138.20	3510.3	40.20	1021.1	28523.24	41.073	1799.54	155480.00	1679	4.4	1.08
48.000	1219.2	28.800	731.5	0.6000	120.30	3055.6	42.00	1067	41093.29	59.174	2592.58	223999.21	2419	3.7	0.92
48.000	1219.2	33.600	853.4	0.7000	101.90	2588.3	43.70	1110.0	56935.83	81.988	3592.09	310356.82	3351	3.1	0.77

This sizing table can be used as a guide to aid the user in choosing the proper PMT-U for a given application and reflects the most commonly-used sizes. Other sizes and special geometries are available, often at no additional cost. Depending on the details of your application, a more appropriate selection, or a more accurate estimation of the performance of a given selection, may be available. Wyatt Engineering encourages users to contact their local Wyatt-Badger representatives, or call us directly, for definitive sizing information.

**Incompressible Flow Relationships:**

$$\Delta P_N = 100 (Q_N / Q)^2$$

$$\Delta H_N = \Delta H (Q_N / Q)^{1.88}$$

$$Q_N = Q (\Delta P / 100)^{0.5}$$

**Examples:**

For a 12.00" x 7.200" PMT-U, find  
 ΔP at 5 000 US GPM  
 ΔH at 5 000 US GPM  
 Q<sub>N</sub> at 500" wc

**Solutions:**

Found using the "Incompressible Flow Relationships"  
 $\Delta P_N = 100 (5\ 000 / 2\ 568.33)^2 = 379.00"$  wc  
 $\Delta H_N = 3.7 (5\ 000 / 2\ 568.33)^{1.88} = 12.9"$  wc  
 $Q_N = 2\ 568.33 (500 / 100)^{0.5} = 5\ 742.96$  US GPM