

# FLOW CHART (0.90 COEFFICIENT)

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## FLOW CHART: FLOW (GPM) USING A 0.90 DISCHARGE COEFFICIENT

PSI	FEET	VEL FT/S	OUTLET SIZE (INCHES)																
			1	1-1/8	1-1/4	1-1/2	1-3/4	2	2-1/4	2-3/8	2-1/2	2-5/8	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/2
1	2.3	12.2	26.8	34.0	41.9	60.4	82.2	107	136	151	168	185	203	242	284	329	378	430	544
2	4.6	17.2	38.0	48.1	59.3	85.4	116	152	192	214	237	262	287	342	401	465	534	607	769
3	6.9	21.1	46.5	58.9	72.7	105	142	186	235	262	291	320	352	419	491	570	654	744	942
4	9.2	24.4	53.7	68.0	83.9	121	164	215	272	303	336	370	406	483	567	658	755	859	1,087
5	12	27.3	60.0	76.0	94	135	184	240	304	339	375	414	454	540	634	735	844	961	1,216
6	14	29.9	65.8	83.2	103	148	201	263	333	371	411	453	497	592	695	806	925	1,052	1,332
7	16	32.3	71.0	90	111	160	218	284	360	401	444	489	537	639	750	870	999	1,136	1,438
8	18	34.5	75.9	96	119	171	233	304	384	428	475	523	574	683	802	930	1,068	1,215	1,538
9	21	36.6	80.5	102	126	181	247	322	408	454	503	555	609	725	851	987	1,133	1,289	1,631
10	23	38.6	84.9	107	133	191	260	340	430	479	531	585	642	764	897	1,040	1,194	1,358	1,719
11	25	40.4	89.0	113	139	200	273	356	451	502	557	614	673	801	941	1,091	1,252	1,425	1,803
12	28	42.2	93	118	145	209	285	372	471	525	581	641	703	837	982	1,139	1,308	1,488	1,883
13	30	44.0	97	123	151	218	296	387	490	546	605	667	732	871	1,022	1,186	1,361	1,549	1,960
14	32	45.6	100	127	157	226	308	402	509	567	628	692	760	904	1,061	1,231	1,413	1,607	2,034
15	35	47.2	104	132	162	234	318	416	526	587	650	716	786	936	1,098	1,274	1,462	1,664	2,106
16	37	48.8	107	136	168	242	329	430	544	606	671	740	812	966	1,134	1,316	1,510	1,718	2,175
17	39	50.3	111	140	173	249	339	443	560	624	692	763	837	996	1,169	1,356	1,557	1,771	2,242
18	42	51.7	114	144	178	256	349	456	577	642	712	785	861	1,025	1,203	1,395	1,602	1,822	2,307
19	44	53.1	117	148	183	263	358	468	592	660	731	806	885	1,053	1,236	1,434	1,646	1,872	2,370
20	46	54.5	120	152	188	270	368	480	608	677	750	827	908	1,081	1,268	1,471	1,688	1,921	2,431
22	51	57.2	126	159	197	283	386	504	637	710	787	868	952	1,133	1,330	1,543	1,771	2,015	2,550
24	55	59.7	132	166	206	296	403	526	666	742	822	906	995	1,184	1,389	1,611	1,850	2,104	2,663
26	60	62.2	137	173	214	308	419	548	693	772	856	943	1,035	1,232	1,446	1,677	1,925	2,190	2,772
28	65	64.5	142	180	222	320	435	568	719	801	888	979	1,074	1,279	1,501	1,740	1,998	2,273	2,877
30	69	66.8	147	186	230	331	450	588	744	829	919	1,013	1,112	1,323	1,553	1,801	2,068	2,353	2,978
32	74	69.0	152	192	237	342	465	607	769	857	949	1,046	1,149	1,367	1,604	1,860	2,136	2,430	3,075
34	79	71.1	157	198	245	352	479	626	793	883	978	1,079	1,184	1,409	1,653	1,918	2,201	2,505	3,170
36	83	73.1	161	204	252	362	493	644	815	909	1,007	1,110	1,218	1,450	1,701	1,973	2,265	2,577	3,262
38	88	75.2	165	209	259	372	507	662	838	934	1,034	1,140	1,252	1,489	1,748	2,027	2,327	2,648	3,351
40	92	77.1	170	215	265	382	520	679	860	958	1,061	1,170	1,284	1,528	1,793	2,080	2,388	2,717	3,438
42	97	79.0	174	220	272	391	533	696	881	981	1,087	1,199	1,316	1,566	1,838	2,131	2,447	2,784	3,523
44	102	80.9	178	225	278	401	545	712	902	1,004	1,113	1,227	1,347	1,603	1,881	2,182	2,504	2,849	3,606
46	106	82.7	182	230	285	410	558	728	922	1,027	1,138	1,255	1,377	1,639	1,923	2,231	2,561	2,913	3,687
48	111	84.5	186	235	291	419	570	744	942	1,049	1,163	1,282	1,407	1,674	1,965	2,279	2,616	2,976	3,767
50	116	86.2	190	240	297	427	581	759	961	1,071	1,186	1,308	1,436	1,709	2,005	2,326	2,670	3,037	3,844
52	120	87.9	194	245	302	436	593	774	980	1,092	1,210	1,334	1,464	1,742	2,045	2,372	2,722	3,098	3,920
54	125	89.6	197	250	308	444	604	789	999	1,113	1,233	1,359	1,492	1,776	2,084	2,417	2,774	3,157	3,995
56	129	91.2	201	254	314	452	615	804	1,017	1,133	1,256	1,384	1,519	1,808	2,122	2,461	2,825	3,214	4,068
58	134	92.8	204	259	319	460	626	818	1,035	1,153	1,278	1,409	1,546	1,840	2,160	2,505	2,875	3,271	4,140
60	139	94.4	208	263	325	468	637	832	1,053	1,173	1,300	1,433	1,573	1,872	2,197	2,547	2,924	3,327	4,211

# FLOW CHART (0.80 COEFFICIENT)



FLOW CHART: FLOW (GPM) USING A 0.80 DISCHARGE COEFFICIENT

PITOT PSI	VEL		OUTLET SIZE (INCHES)																
	FEET	FT/S	1	1-1/8	1-1/4	1-1/2	1-3/4	2	2-1/4	2-3/8	2-1/2	2-5/8	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/2
1	2.3	12.2	23.9	30.2	37.3	53.7	73.1	95	121	135	149	164	180	215	252	292	336	382	483
2	4.6	17.2	33.7	42.7	52.7	75.9	103	135	171	190	211	233	255	304	356	413	475	540	683
3	6.9	21.1	41.3	52.3	64.6	93	127	165	209	233	258	285	313	372	437	506	581	661	837
4	9.2	24.4	47.7	60.4	74.6	107	146	191	242	269	298	329	361	430	504	585	671	764	966
5	12	27.3	53.4	67.5	83	120	163	213	270	301	334	368	404	480	564	654	750	854	1,081
6	14	29.9	58.5	74.0	91	132	179	234	296	330	365	403	442	526	617	716	822	935	1,184
7	16	32.3	63.1	80	99	142	193	253	320	356	395	435	477	568	667	773	888	1,010	1,279
8	18	34.5	67.5	85	105	152	207	270	342	381	422	465	510	607	713	827	949	1,080	1,367
9	21	36.6	71.6	91	112	161	219	286	362	404	447	493	541	644	756	877	1,007	1,145	1,450
10	23	38.6	75.5	96	118	170	231	302	382	426	472	520	571	679	797	924	1,061	1,207	1,528
11	25	40.4	79.1	100	124	178	242	317	401	446	495	545	599	712	836	970	1,113	1,266	1,603
12	28	42.2	83	105	129	186	253	331	419	466	517	570	625	744	873	1,013	1,163	1,323	1,674
13	30	44.0	86	109	134	194	264	344	436	485	538	593	651	774	909	1,054	1,210	1,377	1,742
14	32	45.6	89	113	140	201	273	357	452	504	558	615	675	804	943	1,094	1,256	1,429	1,808
15	35	47.2	92	117	144	208	283	370	468	521	578	637	699	832	976	1,132	1,300	1,479	1,872
16	37	48.8	95	121	149	215	292	382	483	538	597	658	722	859	1,008	1,169	1,342	1,527	1,933
17	39	50.3	98	125	154	221	301	394	498	555	615	678	744	886	1,039	1,205	1,384	1,574	1,992
18	42	51.7	101	128	158	228	310	405	513	571	633	698	766	911	1,069	1,240	1,424	1,620	2,050
19	44	53.1	104	132	163	234	319	416	527	587	650	717	787	936	1,099	1,274	1,463	1,664	2,106
20	46	54.5	107	135	167	240	327	427	540	602	667	735	807	961	1,127	1,307	1,501	1,708	2,161
22	51	57.2	112	142	175	252	343	448	567	631	700	771	846	1,007	1,182	1,371	1,574	1,791	2,267
24	55	59.7	117	148	183	263	358	468	592	659	731	806	884	1,052	1,235	1,432	1,644	1,871	2,367
26	60	62.2	122	154	190	274	373	487	616	686	761	838	920	1,095	1,285	1,491	1,711	1,947	2,464
28	65	64.5	126	160	197	284	387	505	639	712	789	870	955	1,136	1,334	1,547	1,776	2,020	2,557
30	69	66.8	131	165	204	294	400	523	662	737	817	901	988	1,176	1,381	1,601	1,838	2,091	2,647
32	74	69.0	135	171	211	304	413	540	683	761	844	930	1,021	1,215	1,426	1,654	1,898	2,160	2,734
34	79	71.1	139	176	217	313	426	557	704	785	870	959	1,052	1,252	1,470	1,705	1,957	2,226	2,818
36	83	73.1	143	181	224	322	439	573	725	808	895	987	1,083	1,289	1,512	1,754	2,014	2,291	2,899
38	88	75.2	147	186	230	331	451	588	745	830	919	1,014	1,113	1,324	1,554	1,802	2,069	2,354	2,979
40	92	77.1	151	191	236	340	462	604	764	851	943	1,040	1,141	1,358	1,594	1,849	2,122	2,415	3,056
42	97	79.0	155	196	242	348	474	619	783	872	967	1,066	1,170	1,392	1,634	1,895	2,175	2,475	3,132
44	102	80.9	158	200	247	356	485	633	801	893	989	1,091	1,197	1,425	1,672	1,939	2,226	2,533	3,205
46	106	82.7	162	205	253	364	496	647	819	913	1,012	1,115	1,224	1,457	1,710	1,983	2,276	2,590	3,278
48	111	84.5	165	209	258	372	506	661	837	933	1,033	1,139	1,250	1,488	1,746	2,025	2,325	2,645	3,348
50	116	86.2	169	214	264	380	517	675	854	952	1,055	1,163	1,276	1,519	1,782	2,067	2,373	2,700	3,417
52	120	87.9	172	218	269	387	527	688	871	971	1,076	1,186	1,301	1,549	1,818	2,108	2,420	2,753	3,485
54	125	89.6	175	222	274	395	537	701	888	989	1,096	1,208	1,326	1,578	1,852	2,148	2,466	2,806	3,551
56	129	91.2	179	226	279	402	547	714	904	1,007	1,116	1,231	1,351	1,607	1,886	2,188	2,511	2,857	3,616
58	134	92.8	182	230	284	409	557	727	920	1,025	1,136	1,252	1,374	1,636	1,920	2,226	2,556	2,908	3,680
60	139	94.4	185	234	289	416	566	739	936	1,043	1,155	1,274	1,398	1,664	1,952	2,264	2,599	2,958	3,743

# FLOW CHART (0.70 COEFFICIENT)



FLOW CHART: FLOW (GPM) USING A 0.70 DISCHARGE COEFFICIENT

PSI	PITOT FEET	VEL FT/S	OUTLET SIZE (INCHES)																
			1	1-1/8	1-1/4	1-1/2	1-3/4	2	2-1/4	2-3/8	2-1/2	2-5/8	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/2
1	2.3	12.2	20.9	26.4	32.6	47.0	63.9	84	106	118	131	144	158	188	221	256	294	334	423
2	4.6	17.2	29.5	37.4	46.1	66.4	90	118	149	167	185	203	223	266	312	362	415	472	598
3	6.9	21.1	36.2	45.8	56.5	81	111	145	183	204	226	249	274	326	382	443	509	579	732
4	9.2	24.4	41.8	52.9	65.3	94	128	167	211	236	261	288	316	376	441	512	587	668	846
5	12	27.3	46.7	59.1	73	105	143	187	236	263	292	322	353	420	493	572	657	747	945
6	14	29.9	51.1	64.7	80	115	157	205	259	289	320	352	387	460	540	627	719	818	1,036
7	16	32.3	55.2	70	86	124	169	221	280	312	345	381	418	497	584	677	777	884	1,119
8	18	34.5	59.1	75	92	133	181	236	299	333	369	407	447	532	624	723	831	945	1,196
9	21	36.6	62.6	79	98	141	192	251	317	353	392	432	474	564	662	767	881	1,002	1,269
10	23	38.6	66.0	84	103	149	202	264	334	372	413	455	499	594	697	809	929	1,057	1,337
11	25	40.4	69.3	88	108	156	212	277	351	391	433	477	524	623	732	848	974	1,108	1,402
12	28	42.2	72	92	113	163	222	289	366	408	452	498	547	651	764	886	1,017	1,157	1,465
13	30	44.0	75	95	118	169	231	301	381	425	471	519	569	678	795	922	1,059	1,205	1,525
14	32	45.6	78	99	122	176	239	313	396	441	488	538	591	703	825	957	1,099	1,250	1,582
15	35	47.2	81	102	126	182	248	323	409	456	505	557	612	728	854	991	1,137	1,294	1,638
16	37	48.8	84	106	131	188	256	334	423	471	522	576	632	752	882	1,023	1,175	1,336	1,691
17	39	50.3	86	109	135	194	264	344	436	486	538	593	651	775	909	1,055	1,211	1,378	1,743
18	42	51.7	89	112	138	199	271	354	448	500	554	610	670	797	936	1,085	1,246	1,417	1,794
19	44	53.1	91	115	142	205	279	364	461	513	569	627	688	819	961	1,115	1,280	1,456	1,843
20	46	54.5	93	118	146	210	286	374	473	527	584	643	706	840	986	1,144	1,313	1,494	1,891
22	51	57.2	98	124	153	220	300	392	496	552	612	675	741	881	1,034	1,200	1,377	1,567	1,983
24	55	59.7	102	129	160	230	313	409	518	577	639	705	774	921	1,080	1,253	1,439	1,637	2,071
26	60	62.2	106	135	166	240	326	426	539	601	665	734	805	958	1,125	1,304	1,497	1,704	2,156
28	65	64.5	110	140	173	249	338	442	559	623	691	761	836	994	1,167	1,354	1,554	1,768	2,237
30	69	66.8	114	145	179	257	350	457	579	645	715	788	865	1,029	1,208	1,401	1,608	1,830	2,316
32	74	69.0	118	149	185	266	362	472	598	666	738	814	893	1,063	1,248	1,447	1,661	1,890	2,392
34	79	71.1	122	154	190	274	373	487	616	687	761	839	921	1,096	1,286	1,492	1,712	1,948	2,466
36	83	73.1	125	159	196	282	384	501	634	707	783	863	947	1,128	1,323	1,535	1,762	2,005	2,537
38	88	75.2	129	163	201	290	394	515	652	726	804	887	973	1,158	1,360	1,577	1,810	2,060	2,607
40	92	77.1	132	167	206	297	404	528	669	745	825	910	999	1,189	1,395	1,618	1,857	2,113	2,674
42	97	79.0	135	171	211	304	414	541	685	763	846	932	1,023	1,218	1,429	1,658	1,903	2,165	2,740
44	102	80.9	139	175	216	312	424	554	701	781	866	954	1,047	1,247	1,463	1,697	1,948	2,216	2,805
46	106	82.7	142	179	221	319	434	566	717	799	885	976	1,071	1,275	1,496	1,735	1,992	2,266	2,868
48	111	84.5	145	183	226	326	443	579	732	816	904	997	1,094	1,302	1,528	1,772	2,034	2,315	2,930
50	116	86.2	148	187	231	332	452	591	747	833	923	1,017	1,117	1,329	1,560	1,809	2,076	2,362	2,990
52	120	87.9	151	191	235	339	461	602	762	849	941	1,038	1,139	1,355	1,590	1,845	2,117	2,409	3,049
54	125	89.6	153	194	240	345	470	614	777	866	959	1,057	1,160	1,381	1,621	1,880	2,158	2,455	3,107
56	129	91.2	156	198	244	352	479	625	791	881	977	1,077	1,182	1,406	1,650	1,914	2,197	2,500	3,164
58	134	92.8	159	201	248	358	487	636	805	897	994	1,096	1,203	1,431	1,680	1,948	2,236	2,544	3,220
60	139	94.4	162	205	253	364	495	647	819	912	1,011	1,115	1,223	1,456	1,708	1,981	2,275	2,588	3,275