

# Hydraulic

## Limited Detail SAE Size ΔP and Velocity Chart Combined

Pressure Drop and Flow Through Each Foot Length of Inch Tube at Stated Velocity																									
Size inch		ft/sec		ft/sec		ft/sec		ft/sec		ft/sec		ft/sec		ft/sec		ft/sec		ft/sec		Δp Fittings					
OD	Wall	ID	psi	gpm	psi	gpm	psi	gpm	psi	gpm	psi	gpm	psi	gpm	psi	gpm	psi	gpm	psi	gpm	90° Elbow	90° Tee	90° Flow	Sharp 90°	45°
0.125	0.028	0.069	4.621	0.012	9.242	0.023	18.484	0.047	36.968	0.093	46.211	0.117	69.316	0.175	92.421	0.233	115.526	0.291	138.632	0.350	164.611	5.450	17.354	23.796	2.38
0.125	0.035	0.055	7.273	0.007	14.546	0.015	29.092	0.030	58.184	0.059	72.730	0.074	109.095	0.111	145.460	0.148	181.825	0.185	218.190	0.222	264.600	5.450	17.396	23.867	2.39
0.188	0.028	0.132	1.263	0.043	2.525	0.085	5.051	0.171	10.101	0.341	12.627	0.426	18.940	0.640	25.254	0.853	31.567	1.066	37.880	1.279	16.190	5.450	17.164	23.475	2.35
0.188	0.035	0.118	1.580	0.034	3.160	0.068	6.320	0.136	12.641	0.273	15.801	0.341	23.701	0.511	31.601	0.682	39.502	0.852	47.402	1.022	16.239	5.450	17.207	23.547	2.35
0.250	0.028	0.194	0.585	0.092	1.169	0.184	2.338	0.368	4.677	0.737	5.846	0.921	8.769	1.382	11.691	1.842	14.614	2.303	17.537	2.764	15.371	5.450	16.978	23.160	2.32
0.250	0.035	0.180	0.679	0.079	1.358	0.159	2.716	0.317	5.432	0.634	6.730	0.793	10.186	1.190	13.581	1.586	16.976	1.983	20.371	2.379	16.023	5.450	17.020	23.231	2.32
0.250	0.049	0.152	0.952	0.057	1.905	0.113	3.809	0.226	7.618	0.452	9.523	0.566	14.284	0.848	19.045	1.131	23.806	1.414	28.568	1.697	16.101	5.450	17.104	23.374	2.34
0.250	0.065	0.120	1.528	0.035	3.056	0.070	6.111	0.141	12.223	0.282	15.278	0.352	22.918	0.529	30.557	0.705	38.196	0.881	45.835	1.057	16.822	5.450	17.201	23.536	2.35
0.312	0.028	0.256	0.336	0.160	0.671	0.321	1.343	0.642	2.686	1.283	3.357	1.604	5.036	2.406	6.714	3.208	8.393	4.010	10.071	4.813	15.755	5.450	16.702	22.845	2.28
0.312	0.035	0.242	0.376	0.143	0.751	0.287	1.503	0.573	3.005	1.147	3.757	1.434	5.635	2.100	7.513	2.867	9.392	3.584	11.270	4.301	15.804	5.450	16.834	22.916	2.29
0.312	0.049	0.214	0.480	0.112	0.961	0.224	1.922	0.448	3.843	0.897	4.804	1.121	7.206	1.681	9.608	2.242	12.010	2.802	14.412	3.363	15.902	5.450	16.918	23.058	2.31
0.312	0.065	0.182	0.664	0.081	1.328	0.162	2.657	0.324	5.314	0.649	6.642	0.811	9.963	1.216	13.284	1.622	16.605	2.027	19.926	2.432	16.015	5.450	17.014	23.221	2.32
0.375	0.028	0.319	0.216	0.249	0.432	0.498	0.865	0.996	1.730	1.993	2.162	2.491	3.243	3.736	4.324	4.982	5.405	6.227	6.846	7.473	15.524	5.450	16.602	22.524	2.25
0.375	0.035	0.305	0.237	0.228	0.473	0.455	0.946	0.911	1.892	1.822	2.365	2.277	3.548	4.146	4.730	4.554	5.913	5.693	7.095	6.831	15.583	5.450	16.644	22.595	2.26
0.375	0.049	0.277	0.287	0.188	0.573	0.376	1.147	0.751	2.294	1.503	2.867	1.878	4.301	2.817	5.735	3.756	7.168	4.695	8.602	5.634	15.481	5.450	16.728	22.738	2.27
0.375	0.065	0.245	0.367	0.147	0.733	0.294	1.466	0.588	2.932	1.175	3.665	1.469	5.498	2.204	7.331	2.939	9.163	3.673	10.996	4.408	15.794	5.450	16.825	22.901	2.29
0.500	0.035	0.430	0.119	0.453	0.238	0.905	0.476	1.810	0.952	3.621	1.190	4.526	1.785	6.789	2.380	9.052	5.214	11.315	7.174	13.578	15.545	5.450	16.268	21.960	2.20
0.500	0.049	0.402	0.136	0.396	0.272	0.791	0.545	1.582	1.089	3.165	1.361	3.956	2.042	5.934	2.723	7.911	3.404	9.889	7.804	11.867	15.543	5.450	16.353	22.102	2.21
0.500	0.065	0.370	0.161	0.335	0.321	0.670	0.643	1.340	1.286	2.681	1.607	3.351	2.411	5.026	3.214	6.702	4.018	8.377	8.656	10.053	15.555	5.450	16.449	22.265	2.23
0.500	0.083	0.334	0.197	0.273	0.394	0.546	0.789	1.092	1.578	2.185	1.972	2.731	2.958	4.096	3.944	5.461	4.938	6.377	5.917	8.192	15.581	5.450	16.557	22.448	2.24
0.625	0.035	0.555	0.071	0.754	0.143	1.508	0.286	3.016	0.571	6.032	0.714	7.540	1.071	11.310	1.429	15.079	3.790	18.849	5.215	22.619	14.706	5.450	15.893	21.324	2.13
0.625	0.049	0.527	0.079	0.680	0.158	1.360	0.317	2.719	0.634	5.439	0.792	6.798	1.188	10.197	1.584	13.596	4.043	16.995	5.563	20.395	14.804	5.450	15.977	21.466	2.15
0.625	0.065	0.495	0.090	0.600	0.180	1.200	0.359	2.399	0.718	4.798	0.898	5.998	1.347	8.996	1.796	11.995	4.373	14.994	6.016	17.993	14.917	5.450	16.073	21.629	2.16
0.625	0.083	0.459	0.104	0.516	0.209	1.031	0.418	2.063	0.835	4.126	1.044	5.157	1.566	7.735	2.089	10.314	4.806	12.892	6.612	15.471	15.581	5.450	16.181	21.812	2.18
0.625	0.095	0.435	0.116	0.463	0.233	0.926	0.465	1.853	0.930	3.705	1.163	4.632	1.744	6.948	2.325	9.264	5.139	11.579	7.071	13.895	15.527	5.450	16.253	21.934	2.19
0.750	0.035	0.680	0.048	1.132	0.095	2.264	0.190	4.527	0.381	9.055	0.476	11.318	0.714	16.978	0.952	22.637	3.940	28.296	4.045	33.955	14.828	5.450	15.517	20.688	2.07
0.750	0.049	0.652	0.052	1.041	0.104	2.081	0.207	4.162	0.414	8.324	0.518	10.406	0.776	15.608	1.205	20.811	3.099	26.014	4.264	31.217	14.866	5.450	15.601	20.830	2.08
0.750	0.065	0.620	0.057	0.941	0.114	1.882	0.229	3.764	0.458	7.527	0.572	9.409	0.859	14.114	1.145	18.818	3.300	23.523	4.540	28.228	14.478	5.450	15.697	20.993	2.10
0.750	0.083	0.584	0.065	0.835	0.129	1.670	0.258	3.339	0.516	6.679	0.645	8.348	0.968	12.522	1.290	16.697	3.556	20.871	4.893	25.045	14.604	5.450	15.805	21.176	2.12
0.750	0.095	0.560	0.070	0.768	0.140	1.535	0.281	3.070	0.562	6.141	0.702	7.676	1.052	11.514	1.403	15.352	3.748	19.191	5.156	23.029	14.788	5.450	15.877	21.298	2.13
0.750	0.109	0.532	0.078	0.693	0.155	1.386	0.311	2.771	0.622	5.542	0.777	6.928	1.166	10.392	1.555	13.856	3.996	17.319	5.498	20.783	14.844	5.450	15.962	21.421	2.14
0.875	0.035	0.805	0.034	1.586	0.068	3.172	0.136	6.345	0.272	12.690	0.340	15.862	0.509	23.793	1.611	31.724	2.381	39.655	3.276	47.586	13.829	5.450	15.141	20.052	2.01
0.875	0.049	0.777	0.036	1.478	0.073	2.956	0.146	5.911	0.292	11.822	0.364	14.778	0.547	22.167	1.684	29.556	2.489	36.945	3.424	44.334	13.927	5.450	15.225	20.194	2.02
0.875	0.065	0.745	0.040	1.359	0.079	2.717	0.159	5.434	0.317	10.869	0.396	13.586	0.595	20.379	1.775	27.171	2.623	33.964	3.609	40.757	14.069	5.450	15.321	20.357	2.04
0.875	0.083	0.709	0.044	1.230	0.088	2.461	0.175	4.922	0.350	9.844	0.438	12.304	0.657	18.457	1.889	24.609	2.793	30.761	3.840	36.913	14.156	5.450	15.429	20.504	2.05
0.875	0.095	0.685	0.047	1.149	0.094	2.297	0.188	4.594	0.375	9.188	0.469	11.486	0.703	17.228	1.972	22.971	2.913	28.714	4.008	34.457	14.250	5.450	15.502	20.662	2.07
0.875	0.109	0.657	0.051	1.057	0.102	2.113	0.204	4.226	0.408	8.453	0.510	10.566	0.765	15.849	2.077	21.132	3.069	26.414	4.223	31.697	14.348	5.450	15.586	20.805	2.08
1.000	0.035	0.930	0.025	2.117	0.051	4.234	0.102	8.468	0.203	16.937	0.254	21.171	0.811	31.756	1.345	42.342	1.988	52.927	2.735	63.512	13.950	5.450	14.765	19.114	1.94
1.000	0.049	0.902	0.027	1.992	0.054	3.983	0.108	7.966	0.216	15.932	0.270	19.915	0.845	29.873	1.398	39.830	2.065	49.788	2.842	59.745	13.989	5.450	14.849	19.519	1.96
1.000	0.065	0.870	0.029	1.853	0.058	3.705	0.116	7.411	0.233	14.822	0.291	18.527	0.884	27.791	1.462	37.054	2.161	46.318	2.973	55.582	13.621	5.450	14.945	19.721	1.97
1.000	0.083	0.834	0.032	1.703	0.063	3.405	0.127	6.810	0.253	13.620	0.316	17.026	0.932	25.538	1.542	34.051	2.278	42.564	3.154	51.077	13.727	5.450	15.054	19.905	1.99
1.000	0.095	0.810	0.034	1.606	0.067	3.212	0.134	6.424	0.268	12.848	0.335	16.060	0.966	24.090	1.599	32.120	2.363	40.150	3.241	48.179	13.811	5.450	15.126	20.027	2.00
1.000	0.109	0.782	0.036	1.497	0.072	2.994	0.144	5.987	0.288	11.975	0.360	14.969	1.010	22.453	1.731	29.937	2.469	37.422	3.397	44.906	13.910	5.450	15.210	20.169	2.02
1.000	0.120	0.760	0.038	1.414	0.076	2.828	0.152	5.655	0.305	11.311	0.381	14.138	1.047	21.207	1.671	28.277	2.559	35.346							