ENGINEERING TABLES

DEPCO PUMP COMPANY

PIPE FRICTION – WATER 68° F / PRESSURE LOSS IN PSI PER 100 FEET OF PIPE AND TUBE

	NOMINAL SIZES – INSIDE DIAMETERS										
Gallons Per Minute	1/4" O.D. TUBE .206	1/4" PIPE .269	3/8" O.D. TUBE .305	1/4" PIPE .364	1/2" TUBE .430	3/8" PIPE .493	1/2" PIPE .622	3/4" PIPE .824	1" PIPE 1.049	1 1/4" PIPE 1.380	1 1/2" PIPE 1.610
.2	4.28	1.86	.591	.359	.134	.042	-	-	-	-	-
.5	26.7	10.5	3.92	2.39	.853	.539	.167	.033	-	-	-
1	107	37.2	14.8	8.28	3.38	1.85	.602	.155	.050	-	-
2	-	134	50.1	30.1	11.5	6.58	2.10	.526	.164	.044	-
3	-	-	102	64.1	23.2	13.9	4.33	1.09	.336	.090	.043
4	2" PIPE 2.067	-	169	111	38.5	23.9	7.42	1.83	.565	.150	.071
5		-	-	-	56.9	36.7	11.2	2.75	.835	.223	.104
6		2 1/2" PIPE 2.469	-	-	78.4	51.9	15.8	3.84	1.17	.309	.145
8	.073		-	-	130	91.1	27.7	6.60	1.99	.518	.241
10	.108		3" PIPE 3.068	-	-	-	42.4	9.99	2.99	.774	.361
15	.224	.094		-	-	-	93.2	21.6	6.36	1.63	.755
20	.375	.158		4" PIPE 4.026	-	-	-	37.8	10.9	2.78	1.28
25	.561	.234	.083		-	-	-	58.1	16.7	4.22	1.93
30	.786	.327	.114		5" PIPE 5.047	-	-	86.3	23.8	5.92	2.72
40	1.35	.556	.192	.052		-	-	-	41.5	10.2	4.65
50	2.03	.839	.288	.076		-	-	-	66.4	15.6	7.15
60	2.87	1.18	.406	.107	.035	-	-	-	92.8	22.2	10.2
70	3.84	1.59	.540	.143	.047	-	-	-	-	30.5	13.7
80	4.97	2.03	.687	.180	.060	-	-	-	-	39.0	17.6
90	6.20	2.53	.861	.224	.074	-	-	-	-	49.8	22.0
100	7.59	3.09	1.05	.272	.090	-	-	-	-	60.0	26.9

NOTE: Pipe sizes shown apply to standard weight schedule 40 pipe. Tube is standard copper tubing.

PIPE FRICTION – VISCOUS LIQUIDS / PRESSURE LOSS IN PSI PER 100 FEET OF PIPE & TUBE

Gallons Per Minute	Pipe Size Inches	VISCOSITY – SSU (SAYBOLT SECONDS UNIVERSAL)								
		100	500	1,000	2,500	5,000	10,000	25,000	50,000	100,000
3	3/4	3.7	19.1	38.2	96	191	382	-	-	-
	1	1.4	7.3	14.5	36.5	73	145	482	-	-
	1 1/4	.46	2.5	4.8	12.5	25	48	205	418	-
	1 1/2	.25	1.3	2.7	6.8	13.1	27	78	194	388
5	1	2.3	12.1	24.2	61	121	242	-	-	-
	1 1/4	.77	4.1	8.1	20.3	40.6	81	291	-	-
	1 1/2	.42	2.2	4.3	11.4	22	45	164	324	-
	2	.16	.81	1.6	4.0	8.1	15.8	40	80	161
10	1	4.9	24.2	48.5	121	242	485	-	-	-
	1 1/4	1.6	8.1	16.2	40.6	81	162	415	-	-
	1 1/2	.84	4.4	8.8	21.9	43.8	88	322	-	-
	2	.32	1.68	3.3	8.1	16.2	32	81	211	420
20	1 1/4	4.9	16.2	32.5	81	162	325	-	-	-
	1 1/2	2.3	8.8	17.5	43.8	88	175	438	-	-
	2	.64	3.2	6.4	16.1	32.1	64	204	415	-
	2 1/2	.31	1.65	3.3	7.9	16.2	32	88	176	348
50	1 1/2	12.5	21.9	43.8	110	219	438	-	-	-
	2	3.7	8.2	16.1	40.2	80	161	442	-	-
	2 1/2	1.6	4.1	7.9	19.7	39.5	79	209	418	-
	3	.65	1.7	3.3	8.0	16.9	34	107	214	428
100	2 1/2	5.3	8.1	15.8	39.5	79	158	452	-	-
	3	1.9	3.3	6.6	16.6	33.1	66	208	425	-
	4	.52	1.1	2.2	5.6	11.2	22	65	134	263
	6	.12	.21	.45	1.15	2.18	4.4	10.8	21.7	44

VISCOSITY CONVERSION

Saybolt Universal SSU	Stokes	Centi-Stokes	Poises	Centi-Poises	Engler Seconds	Redwood #1 Seconds	Typical Liquids at Room Temperature
31	.010	1.00	.008	.8	54	29	Water
35	.025	2.56	.020	2.05	59	32.1	Kerosene
50	.074	7.40	.059	5.92	80	44.3	No. 2 Fuel Oil
80	.157	15.7	.126	12.6	125	69.2	No. 4 Fuel Oil
100	.202	20.2	.162	16.2	150	85.6	Transformer Oil
200	.432	43.2	.346	34.6	295	170	Hydraulic Oil
300	.654	65.4	.522	52.2	470	254	SAE 10W Oil
500	1.10	110	.88	88.0	760	423	SAE 10 Oil
1,000	2.16	220	1.73	173	1,500	896	SAE 20 Oil
2,000	4.40	440	3.52	352	3,000	1,690	SAE 30 Oil
5,000	10.8	1,080	8.80	880	7,500	4,230	SAE 50 Oil
10,000	21.6	2,160	17.0	1,760	15,000	8,460	SAE 60-70 Oil
50,000	108	10,800	88	8,800	75,000	46,660	Molasses B
100,000	216	21,600	173	17,300	150,000	88,160	Molasses C

* Poise and Centipoise are given for oil of .8 spec. gravity. Relationship: Centistokes X Specific Gravity = Centipoise. Centipoise = (SSU x Specific Gravity)/ 4.62