

PIPE SIZING
ASHRAE Fundamentals, 2005

Fluid type	Water at 1800F
Kinematic viscosity, ft ² /s	0.000038
Density, lb/ft ³	60.580
Heat capacity, Btu/US gal/°F	8.1267
ΔT, °F	20.0

Loop ID	ΔP, ft
System loop head	25.86
Boiler loop head	8.92

Section names	Thermal load, Btu/h	Flow rate, US gal/min	Pipe length, ft	Pipe material	Ø inch	Velocity V, ft/s	Friction loss, ft w.c./100ft	Fitting list	Sum of loss factors	Other pressure loss sources	Other source pressure loss, ft w.c.	Schedule 40 internal diameter, inch	Friction losses, ft w.c.	Fitting losses, ft w.c.	Total pressure losses, ft w.c.	Pipe water content, ft ³
Supply pipes to:		0.00		ASHRAE Chart	13	0.00	0.00					0.269	0.00	0.00	0.00	0.00
FC-2	287,480	29.48	25	ASHRAE Chart	2.00	2.82	1.66	2 elbows, shutoff valve, tee	3.57			2.067	0.42	0.43	0.84	0.58
SHU-110,111	263,480	27.02	50	ASHRAE Chart	2.00	2.58	1.40	tee	1.4			2.067	0.70	0.14	0.84	1.17
SHU-120	224,195	22.99	3	ASHRAE Chart	1.50	3.62	3.68	tee	1.6			1.610	0.11	0.32	0.43	0.04
SHU-119	210,546	21.59	3	ASHRAE Chart	1.50	3.40	3.26	tee	1.6			1.610	0.10	0.28	0.38	0.04
SHU-107,108,109	184,618	18.83	51	ASHRAE Chart	1.50	2.98	2.52	tee	1.6			1.610	1.28	0.21	1.50	0.72
SHU-117,118	161,762	16.59	19	ASHRAE Chart	1.50	2.61	1.94	tee	1.6			1.610	0.37	0.16	0.53	0.27
SHU-106	153,627	15.75	36	ASHRAE Chart	1.25	3.38	3.88	tee	1.7			1.380	1.40	0.29	1.69	0.37
SHU-102,103,104,105	115,269	11.82	36	ASHRAE Chart	1.25	2.54	2.21	tee	1.7			1.380	0.80	0.16	0.96	0.37
FC-1	96,531	9.90	30	ASHRAE Chart	1.00	3.67	6.40	tee	1.8			1.049	1.92	0.37	2.29	0.18
SHU-114,115,116	72,530	7.44	5	ASHRAE Chart	1.00	2.76	3.65	tee	1.8			1.049	0.18	0.21	0.39	0.03
SHU-101	35,952	3.69	91	ASHRAE Chart	75	2.22	3.21	tee, 4 elbows, shut off valve	9.18			0.824	2.92	0.68	3.60	0.34
Return pipes from:		0.00		ASHRAE Chart	75	0.00	0.00					0.824	0.00	0.00	0.00	0.00
FC-2	24,001	2.46	70	ASHRAE Chart	75	1.48	1.47					0.824	1.03	0.00	1.03	0.26
SHU-110,111	63,285	6.49	5	ASHRAE Chart	1.00	2.41	2.80					1.049	0.14	0.00	0.14	0.03
SHU-120	76,935	7.89	3	ASHRAE Chart	1.00	2.93	4.10					1.049	0.12	0.00	0.12	0.02
SHU-119	102,862	10.55	50	ASHRAE Chart	1.25	2.26	1.77					1.380	0.89	0.00	0.89	0.52
SHU-107,108,109	125,719	12.89	20	ASHRAE Chart	1.25	2.77	2.62					1.380	0.52	0.00	0.52	0.21
SHU-117,118	133,853	13.73	17	ASHRAE Chart	1.25	2.94	2.96					1.380	0.50	0.00	0.50	0.18
SHU-106	172,211	17.66	38	ASHRAE Chart	1.50	2.78	2.20					1.610	0.84	0.00	0.84	0.54
SHU-102,103,104,105	190,950	19.58	30	ASHRAE Chart	1.50	3.09	2.89					1.610	0.81	0.00	0.81	0.42
FC-1	214,951	22.04	5	ASHRAE Chart	1.50	3.47	3.39					1.610	0.17	0.00	0.17	0.07
SHU-114,115,116	251,528	25.79	11	ASHRAE Chart	1.50	4.06	4.62					1.610	0.51	0.00	0.51	0.16
SHU-101	287,480	29.48	20	ASHRAE Chart	2.00	2.82	1.66	tee, 2 elbows, shut off valve	3.6			2.067	0.33	0.43	0.76	0.47
Pipes through:		0.00		ASHRAE Chart	75	0.00	0.00					0.824	0.00	0.00	0.00	0.00
FC-2	24,001	2.46	27	ASHRAE Chart	75	1.48	1.47					0.824	0.40	0.00	0.40	0.10
SHU-110,111	39,284	4.03	280	ASHRAE Chart	75	2.42	3.81					0.824	10.67	0.00	10.67	1.04