TABLE 1. UNIT STEAM CONSUMPTION OF PROCESS EQUIPMENT[a]

KITCHEN APPLIANCES (EXCLUSIVE OF WATER HEATING)	CONSUMPTION,[b] LB PER HR	PRESSURE, PSIG
Stock and vegetable kettles (per 5 gal)	20.0	7-20
Vegetable steamers (per compartment)	40.0	7-20
Steam tables (per sq ft)	1.7	7-20
Bain-Maries (per sq ft)	3.4	7-20
Coffee urns (per gal)	3.4	7-20
Water urns (per gal)	5.0	7-20
Soup warmers (30 × 30 × 28 in.)	100.0	7-20
Egg boilers (3 compartments)	18.0	7-20
Clam, lobster, and potato steamers (per compartment)	40.0	7-20
Oyster pots	18.0	7-20
Plate and cup warmers (per 20 cu ft)	35.0	7-20
Food-warming ovens (per 20 cu ft)	35.0	7-20
Silver burnisher and washers	69.0	7-20
Dishwashers (per tray)	60.0	7-20
LAUNDRY EQUIPMENT		
Tumblers		
40 × 94 in.	360	100
30 × 36 in.	225	100
Washers, (per gal water heated)	1	15-100
Flatwork ironers,		
100 to 120 in. chest type (per roll)	60	100
50 to 100 in. cylinder type (per machine)	60-120	100
Standard presses	105	100
Large shirt body presses	190	100
Cuff and neckband presses	15	100
Sleevers	12	100
Steam-electric irons	8	100
Woolen pressing machines		
Large—electric vacuum	25	65
Small—electric vacuum	12	65
Large—steam vacuum	35	65
Small—steam vacuum	20	65
Feather cleaning and sterilizing		
15 pillows per hr	175	100
HOSPITAL EQUIPMENT		
Sterilizers, for bottles or pasteurization (per bottle)	1	40
Sterilizers, for water, (per gal)	12	40
Sterilizers, for instruments and utensils,		
8 × 9 × 18 in., water depth 3½ in.	27	40
9 × 10 × 20 in., water depth 3½ in.	30	40
10 × 12 × 22 in., water depth 4 in.	39	40
12 × 16 × 24 in., water depth 4 in.	60	40
10 × 12 × 36 in., water depth 4 in.	66	40
16 × 15 × 20 in., water depth 10 in.	92	40
20 × 20 × 24 in., water depth 24 in.	144	40
Sterilizers, for instruments @ 240-250 F,		
12 × 20 in.	48	40
14 × 22 in.	60	40
16 × 24 in.	72	40

TABLE 1. UNIT STEAM CONSUMPTION OF PROCESS EQUIPMENT (CONCLUDED).

HOSPITAL EQUIPMENT (CONTINUED)	CONSUMPTION, LB PER HR	PRESSURE, PSIG
Sterilizers, for surgical supplies		
10 × 20 in.	10	40
12 × 20 in.	22	40
14 × 22 in.	28	40
16 × 24 in.	38	40
16 × 36 in.	54	40
20 × 28 in.	60	40
20 × 36 in.	78	40
20 × 48 in.	98	40
20 × 60 in.	124	40
Sterilizers, (autoclave) (240-250 F)		
15.5 × 24 in.	24	40
17.5 × 26 in.	32	40
21.5 × 30 in.	40	40
24 × 36 in.	42	40
Disinfector, mattress		
30 × 42 × 84 in.	42	35-60
60 × 66 × 108 in.	318	35-60
Blanket warmers		
18 × 24 × 72 in.	4	35-60

[a] From District Heating Handbook (*National District Heating Association*, Third Edition, 1951).
[b] These values represent approximate requirements after warm-up period.

with high pressure are: (1) lower heat loss per square foot of pipe surface; (2) less trouble with traps and valves; (3) simpler problems in pressure reduction at the buildings; and (4) general reduction in maintenance costs. With distribution pressures not exceeding 50 psig, there is less danger if the full distribution pressure should build up in the radiators or heaters through the faulty operation of pressure-regulating valves. With pressures higher than 50 psig, a second pressure-reducing valve or some form of emergency relief is required to prevent excessive pressures in the radiators or other heaters.[1]

The advantages of high-pressure distribution are: (1) smaller pipe sizes; (2) availability of the steam for various other operations requiring higher pressures than the building heating system; and (3) wider flexibility in allowance for maximum pressure drop. Where distribution pressures

TABLE 2. ANNUAL STEAM CONSUMPTION FOR WATER HEATING FOR VARIOUS TYPES OF BUILDINGS, PER CU FT OF VOLUME[a] [b]

TYPE OF BUILDING	CONSUMPTION, LB/(YR)(CU FT)	CONSUMPTION LB/(YR) (CU FT)(100 F DEG TEMP. RISE OF WATER)
Hotel	3.20	2.66
Residence Club	2.56	2.11
Apartment House	2.41	1.99
Department Store	0.95	0.79
Office	0.85	0.71
Theatre	0.57	0.48
Parking Garage	0.46	0.38

[a] Based on analysis by fourteen district heating companies from metered consumptions. Building volume is approximate gross volume.
[b] From *District Heating Handbook* (*National District Heating Association*, Third Edition, 1951, p. 347).