Food Service Applications

Superior® Water Conditioners

AUTOMATIC DISHWASHER

GENERAL DESCRIPTION OF EQUIPMENT

There are many different types of automatic dishwashers, ranging from one compartment to three compartments. In the compartment models, the dishes are pre-rinsed in the first tank, washed in the second tank, and final rinsed in the third tank with 180° water.

SIZING AND LOCATION

Water to all three tanks must be treated if there are problems in all three tanks.

A dishwasher can have many different hook-ups. It is important to treat 100% of both the hot and cold water entering the tanks to be Superiorized®. The Superior® unit for treating the hot water, can be installed ahead of the booster heater in order to control scale in that as well.

Do not install the Superior® unit between the booster heater and the dishwasher, unless the booster has no scaling problems.

Size according to maximum flow rate of water going through each unit.

The following dishwasher brand and model sizing chart may be used if for properly sizing Superior® if the brand and model are listed.

It is important to explain to the customer that conditions sometimes get worse before they get better. As scale starts to dissolve, the dishes and silverware will sometimes spot worse during the clean-up period, depending on the condition of the booster and rinse tank.

NOTE: Sizing chart for Superior® available upon request. For models not listed, please contact Superior Manufacturing.

DISHWASHER SIZING CHART

MANUFACTURER & MODEL No.	SUPERIOR® MODEL No.
ADAMATION	
10-20	RT-750
CA, CA-1, CA2M, SL-3, CA2, SL-1390	RT-1000
AUTOMATION	
SW-PPFR1, SW-FR1, W-PPFR1, W-FR1, SWR-PPFR2, SWR-FR2, WR-PPFR2, WR-FR2	RT-1000
A-F	
SA, VA	RT-1000
SP	SF-1250
BLAKSLEE	
D-9, D-8, D8-LT	RT-1000
R-L, FA-L, RA-L, FA-M, RA-M	RT-750
All R, FA, and RA models with 2 or 3 tanks	RT-750
F, XF single tank	RT-750
F, SF 2 and 3 tanks	RT-1000
CHAMPION	
U-H1, U-HB, U-LF, U-LD, D-H1, D-HB, D-LF, D-LD, D-LD2, 20KB, KL-44, 20KPRB, FL-66, 64-KB, 64KPRB, 30KB, 30KPRB, 40KB, 40KPRB	RT-1000
UC-C, C-4, C-5, C-8	SF-1250
1-PPW, HD7-5	SF-1250
PR-120	RT-750
CUNNINGHAM	
A50, B50, 1F	RT-1000
ELKINGTON	
GDX60, (70, 80, 90) PC12, (15, 22, 24)	RT-750
ENERGY MIZER	
A-1, AH-1, A-2, AH-2	RT-750
B-1, B-2	RT-1000
FMC	
103, 104, 204	SF-1250

FOLEY

A2, A5, A7, A9, A11	RT-500

GENERAL ELECTRIC

SS64B, SS80B, SS86B, SS102B, SS116B	RT-750

GRESHAM

50T50, 50T60	RT-1000

HOBART

UM-4, UM-4D, UMP-4, UM-C4D, UMP-C4, UMP-C4D, WM-1, WM-1D, WM-5, WM-5H, WM-5C, WM-C1, CMP-c1	RT-750
LT-20	RT-750
LT-40	RT-1000
SM-6T2	RT-750
AM-14, AM-14C	RT-1000
C-44, CRS-66, CPW-80, C-54, CRS-76, CPW-90	RT-1000
C-64, CRS-86, CPW-100, C-81, CRS-103, CPW-117	RT-1000

INSINGER

Commander 18	RT-1000
Admiral 120-7, 66-2	RT-750
Speeder 6, 86-2	RT-750
Super 106-2	RT-750
Miniflite 12D	RT-750
Clipper RC 19RPW	RT-750
Master RC-21, RPW, EW-2, EW-3	RT-750
CA-2	RT-1000
DA-2	SF-1250

JACKSON

$-A, DLF-48, 4-ARD, 6-ARD, 6-A, DJF-60 Roto Drive Jr., DLF-64, 12Z3-26Z3	RT-750
24B	RT-750
24L	RT-500
Series 150, Conserver 1, UC-1, 10L	RT-1000
10AB, 10APRB, 44CE, 44CEPRW	RT-750
Conserver 2	RT-1000
44CL, 44CLPRW	RT-500

METALWASH

RS-30, RT-84	RT-1000 or SF-1250
RT-36, RT-42, RT-472	RT-1250
RS-28FL, RT-74, RT-7A	RT-1000
RS-2R, RT-42B, RT-42BC	SF-1250
RT-60, Mark VIII, SST	RT-1000

PEERLESS

122(t), SC1020	RT-750

STERO

SD-20-1, SDRA, SDRA-PACK, U-31-A, STPCW-12S, STPCW-15PS, STPC-12PS, STPC-15PS, STBUW-14, SC2-4, SC6-4, SC1-2-4, SC1-6-6, SC5-6-4, SC5-2-4	RT-1000
SC-44, All SCT models	RT-750
STPCW models, 15, 19, 19PS, 20, 22, 24	RT-1000
STPC models, 15, 19, PS, 20, 22, 24	RT-1000
SC2 –3-4, SC6-3-4, SC2-7-4	RT-750
SC models, 1-2-7-4, 1-6-7-4, 5-6-3-4, 5-2-7-4	RT-750
U-31-A-2	SF-1250

VULCAN

CU16ELT, CU16BTF, R16ELT, RC15ELT	RT-750
3D20TF, CD20TF, 3D20LT, CD20LT	RT-1000
A-44, A-54, A-64, A-81-4, CP-2, CP-3, HP-3, HP-3C, HP-3L	RT-750

WELLS

AD-64, AD-80, GDX-80, PC-19, PC-26	RT-750

ICE MACHINES

GENERAL DESCRIPTION OF EQUIPEMNT

There are many different makes and models for making ice cubes, ice flakes, or ice snow, but their operating principles are all basically the same.

SIZING AND LOCATION

Install a Superior Water Conditioner® in the raw water make-up line, sized to treat 100% of the water. Hold the float valve wide open and take an actual measurement to determine maximum flow rate.

An ice machine must have a means to purge the precipitated minerals. If an automatic purge mechanism is not incorporated in the design of the machine, then a purge must be done manually or a system devised to purge theses minerals.

If the machine operates only intermittently for a few hours at a time, a bleed-off must be installed. The bleed-off must be very small—use a 1/8" cooper tube pinched down on the outlet end.

The following ice machine brand and model sizing chart should be used only as a guide when actual water flow rate is not known. We constantly strive to keep these lists updated with new models and sizing information as available.

NOTE: Sizing chart for the Superior Water Conditioner® available upon request. For models not listed, please contact Superior Manufacturing.

MANUFACTURER AND MODEL	SUPERIOR MODEL No.	SUPERIOR MODEL No.
	AIR COOLED	**WATER COOLED**
CRYSTAL TIPS ICEMAKERS		
Cubers		
CAE 12 & 25	C-5	C-75
CAE 45 & 60	C-10	C-100
Flakers		
FA 28,29,39	C-5	C-75
FA 58,59,99	C-10	C-100
FA 149,229	C-25	C-500
FLAKE ICE COPORATION		
300 WCH		C-200
500 WCH		RT-500-K
700 WCH		RT-500-K
1000 WCH		RT-750-K
1200 WCH		RT-750-K
2000 WCH		RT-750-K
2400 WCH		RT-750-K
300RACH	C-200	
500RACH	C-200	
700RACH	RT-500-K	
1000RACH	RT-750-K	
1200RACH	RT-750-K	
2000RACH	RT-750-K	
2400RACH	RT-750-K	
Self contained Complete Ice Machine		
SC300ACC	C-200	
SC500AC	RT-500-K	
SC-700-AC	RT-500-K	
Ice-o Matic		
C-10-988	C-25	
UC-20-588	C-25	
Cube Ice Maker		
C-20F-A-P	C-25	
C-20H-A-P	C-25	
C-20F-W-P		C-50
C-20H-W-P		C-50
C-30F-A-P	C-75	
A-30H-A-P	C-75	
C-30F-W-P		C-100
C-30H-W-P		C-100
C-40F-A-P	C-50	
C-40H-A-P	C-50	
C-40F-W-P		C-75
C-40H-W-P		C-75
C-50F-A-P-B	C-75	
C-50H-A-P-B	C-75	
C-50F-W-P-B		C-100
C-50H-W-P-B		C-100

Computer Controlled Cube Icemaker

C-61F-A-O	C-75	
C-61H-A-P	C-75	
C-61F-W-P		C-100
C-61H-W-P		C-100
C-81F-A-P	C-75	
C-81H-A-P	C-75	
C-81F-W-P		C-100
C-81H-W-P		C-100
C-84F-A-P	C-75	
C-84F-W-P		C-100
C-84H-W-P		C-100
C-121F-A-P	C-100	
C-121H-A-P	C-100	
C-121F-W-P		C-200
C-121H-W-P		C-200
C-124F-A-P	C-100	
C-124H-A-P	C-100	
C-124F-W-P		C-200
C-124H-W-P		C-200
C-146F-A-P	C-100	
C-146H-A-P	C-100	
C-146F-W-P		C-200
C-146H-W-P		C-200
C-147F-A-P	C-100	
C-147H-A-P	C-100	
C-147F-W-P		C-200
C-147H-W-P		C-200
C-186F-W-P		C-200
C-186H-W-P		C-200
C-187F-W-P		C-200
C-187H-W-P		C-200

Flake Icemaker Model MF

MF-400-A-P	C-50	
MF-400-W-P		C-75
MF-700-A-P	C-50	
MF-700-W-P		C-75
MF-1006-A-P	C-50	
MF-1006-W-P		C-75
MF-2006-A-P	C-75	
MF-2006-W-P		C-100

Flake Icemaker Model F32

F-250-A-32P	C-25	
F-400-A-32P	C-50	
F-400-W-32P		C-75
F-700-A-32P	C-50	
F-700-W-32P		

Flake Icemaker Model F38

F-250-A-38P	C-25	
F-400-A-38P	C-50	
F-400-W-38P		C-75
F-700-A-38P	C-50	

F-700-W-38P		C-75
F-1006-A-38P	C-50	
F-1006-W-38P		C-75
Flake Icemaker Model F48		
F-400-A-48P	C-50	
F-400-W-48P		C-75
F-700-A-48P	C-50	
F-700-W-48P		C-75
F-1006-A-48P	C-50	
F-1006-W-48P		C-75
Flake Icemaker Chassis Model FC		
FC-250-A	C-25	
FC-400-A	C-50	
FC-400-W		C-75
FC-700-A	C-50	
FC-700-W		C-75
FC-1600-A	C-50	
FC-1660-W		C-75
Flake Icemaker Drink Dispenser Model D38 & D48		
D-400-A-38P-4	C-50	
D-400-W-38P-4		C-75
D-700-A-38P-4	C-50	
D-700-W-38P-4		C-75
D-700-A-48P-4	C-50	
D-700-W-48P-4		C-75
Flake Dispenser Model FD		
FD-550-A-P	C-50	
FD-550-W-P		C-75
Flake Dispenser Model HD		
HD-650-A-P	C-50	
HD-650-W-P		C-75
HD-750-A-P	C-50	
HD-750-W-P		C-75
HD-751-A-P	C-50	
HD-751-W-P		C-75

FRIGIDAIRE

Cubers-Self Contained		
SCT5	C-10	
SCS11 SCS13	C-25	C-75
SCS22	C-75	C-75
SCS45	C-75	C-100
Cuber-Machine Sections		
MSC45	C-75	C-100
MCT70	C-100	RT-500
Remote Cubers		
MCT95R MCT96R	C-100	
MRCT-95W (Remote condenser)		RT-500
Flex Freeze		
FMT33	C-75	C-75

Flakers Self Contained		
SFN30	C-5	C-75
SFN60	C-10	C-75
Flakers Self Contained Drink Dispenser		
SFN30DD	C-5	C-75
SFN60DD	C-10	C-75
Modular Flakers		
MFT60	C-10	C-75
MFT120	C-25	C-100

HOSHIZAKI

Automtic Ice Cuber Maker Under Counter Model		
IM Self Contained		
IM-122J	C-25	
Self Contained Model		
IM-202J	C-10	
200 System		
IM-201DU	C-10	
Flake Ice Maker with Storage Bin		
F251-U	C-10	
F-441U		C-50
Modular Crescent Cuber KM Series Slim Line		
KM-451DU	C-10	C-100
KM-451DWU	C-10	C-100
KM-601DU	C-25	C-100
KM-601DWU	C-25	C-100
Stackable		
KM-1201DU	C-50	C-100
KM-1201DSU	C-50	C-100
KM-1201DWU	C-50	C-100

ICE-O-MATIC

C-20-H-A-P	C-25	
C-30-F-A-P	C-25	
C-40-F-A-P	C-50	
C-50-F-A-P	C-50	
C-61-F-A-P	C-50	
C-81-F-A-P	C-50	
C-121-A-P	C-50	C-75
F-400-A-32P	C-50	
F-400-W-32P	C-50	C-75
F-700-A-32P	C-50	
F-700-W-32P	C-50	C-75
F-1006-A-38P	C-50	
F-1006-W-38P	C-50	C-75
MF-400-A-P	C-50	
MF-400-W-P	C-50	C-75
MF-700-A-P	C-50	

MF-700-W-P	C-50	C-75
MF-700-R-P	C-50	
MF-1006-A-P	C-50	
MF-1006-W-P	C-50	C-75
MF-1006-R-P	C-50	
MF-2006-A-P	C-50	
MF-2006-W-P	C-50	C-75
MF-2006-R-P	C-50	

KOLD DRAFT CUBERS

42" Wide Cuber Section		
GB7	C-75	C-75
GB1	C-75	C-100
GB2, GB4		RT-500
42" Wide Remote Cuber Section		
GB1-4	C-75	
GB1-8, GB2, GB4	C-100	
GB1-12	RT-500	
28 ½" Wide Cuber Section		
GT7, GT8	C-75	C-75
GT1	C-75	C-100
Self Contained Cubers		
GS6	C-75	
GY3	C-75	C-75
Medi-Cuber & Ice Station Dispenser		
MD5, IS5	C-75	C-75
MD1, ISI	C-75	C-100

MANITOWOC ICEMAKER

Series 100 Ice Cubers		
AR-100A	C-25	
AR-101W		C-100
AD-0102A	C-25	
AD-0103W		C-100
AY-1014A	C-25	
AY-0105W		C-100
Series 200 Stack-On Ice Cubers		
HR-0200A	C-25	
HR-0201W		C-100
HD-0202A	C-25	
HD-0203W		C-100
HY-0204A	C-25	
HY-2-5W		C-100
Series 400 Stack-On Ice Cubers		
ER-0400A	C-25	
ER-0401W		C-100
ED-0402A	C-25	
ED-0403W		C-100
EY-0404A	C-25	
EY-0405W		C-100

Series 400 Cuber-Vertical Discharge Remote Condenser		
ER-0490-N, ER-0492N, EY-0494N	C-75	
Series 600 Stack-On Ice Cuber		
GR-0600A	C-75	
GR-0601W		C-100
GD-0602A	C-75	
GD-0603W		C-100
GY-0604A	C-75	
GY-0605W		C-100
Series 600 Cubers-Vertical Discharge Remote Condenser		
GR-690N, GD-692N, GY-694N	C-75	
Series 800 Stack-On Ice Cubers		
GR-0800A	C-75	
GR-0801W		C-100
GD-0802A	C-75	
GD-0803W		C-100
GY-0804A	C-75	
GY-0805W		C-100
Series 800 Cubers-Vertical Discharge Remote Condenser		
GR-0890N, GD-0892N, GY-0894N	C-75	
Series 1200 Stack-On Ice Cubers		
GR-1200A		
GR-1201W		RT-500-K
GD-1202A	C-75	
GD-1203W		RT-500-K
GY-1204A	C-75	
GY-1205W		RT-500-K
Series 1200 Cuber-Vertical Discharge Remote Condenser		
GR-1290N, GD-1292N, GY-1294N	C-75	
Series 1700 Stack-On Ice Cuber		
GR-1701W		RT-500-K
GD-1703W		RT-500-K
GY-1705W		RT-500-K
Series 1700 Cuber-Vertical Discharge Remote Condenser		
GR-1790N, GD-1792N, GY-1794N	RT-500-K	
Self Contained Cuber		
100 Series	C-25	C-100
Modular Cubers		
200 Series, 400 Series	C-25	C-100
600 Series	C-25	C-100
1100 Series	C-50	RT-500
2200 Series	C-100	RT-750

REYNOLDS ICEMAKERS

Icemaker/Dispenser		
Consul 300	C-5	
F1-045, F1-090	C-5	C-75
Diplomat 600	C-10	
F1-T45, F1-T90	C-10	C-100
Blockett Icemakers (Modular)		
F-13/300	C-5	C-75
F-133/300	C-10	RT-500
F-16/600	C-10	C-100
F164/600, F166-600	C-25	RT-500
. F1-3, F14	C-5	C-75
F1-6	C-10	C-100
La Crosse (Flakers)		
F-500	C-5	C-100
F-700	C-10	RT-500
F-1000	C-25	RT-500
Cubemaster		
SC-100-60, SC70-30	C-75	C-75
LCC-200, LCC-225, LC-325		
LC-350, SC-250, SC-275, SC-150-80	C-75	C-100
LC-425, LC-450, SC-375, SC-400	C-75	RT-500
LC-525, LC-550	C-100	RT-500

ROSS TEMP ICEMAKERS

Flaker-Self Contained		
RF151SC		
RF351SC, RF452-SC	C-5	C-75
RF600SC	C-10	C-75
Modular Flakers		
RF-600UF	C-10	C-75
RF-1051UF	C-10	C-100
RF-1251UF, RF-2051UF	C-25	RT-500
Self Contained Flakers		
RC-150SC	C-25	C-75
RD-320SC, RC-340SC	C-75	C-75
RC-603SC	C-75	
Modular Cubers		
RC602UF	C-75	C-75
RC603UF	C-75	C-100
RC902UF	C-75	RT-500
RC1202UF	C-100	RT-500
Ice Dispensers		
RC302IDC, RC3041DC	C-75	C-75
Drink Dispenser		
RC320DD	C-75	C-75
RF351DD	C-5	C-75
RF452DD	C-5	C-75

RF600DD	C-10	C-75
Carbonator Ice Storage Chest		
RB110CC	C-5	

SCOTSMN ICEMAKER

Self Contained Cubers		
AC20, AC25, AC30	C-75	C-75
Cube Dispenser		
CD20	C-75	C-75
Modular Cubers		
MC30, MC35	C-75	C-100
MC40	C-75	RT-500
MC40	C-100	RT-500
CM250 Slim Modular Contour Cuber		
CM250AE-1E	C-75	
CM250WE-1E		C-100
CM450 Slim Modular Contour Cuber		
CM450AE-32D	C-75	
CM450WE-32D		C-100
CM500 Slim Modular Contour		
CM500AE-1D	C-75	
CM500WE-1D		C-100
CM550 Slim Modular Contour Cuber		
CM550-AE-1A	C-100	
CM650 Slim Modular Contour Cuber		
CM650AE-32D	C-75	
CM650WE-32D		C-100
CM650AE-3D	C-75	
CM650WE-3D		C-100
CM650 or Slim Modular Contour Cuber with Remote Condenser Flexibility		
CM650RE-32D		
CM650RE-3D		
CM855 Modular Contour Cuber		
CM855AE-32A	C-75	
CM855WE-32A		C-100
CM855R Modular Contour Cuber with Remote Condenser Flexibility		
CM855RE-32A	C-75	
CM1000 Modular Contour Cuber		
CM1000AE-32A	C-100	
CM1000WE-32A		C-200
CM1000AE-3A	C-100	
CM1000WE-3A		C-200

CM1000 Slim Modular Contour Cuber with Remote Condenser Flexibility		
CM1000RE-32A	C-100	
CM1000RE-3A	C-100	
CM1400 Modular Contour Cuber		
CM400AE-32A	C-100	
CM1400WE-32A		C-200
CM1400AE-3A	C-100	
CM1400WE-3A		C-200
CM1400R Modular Contour Cuber with Remote Condenser Flexibility		
CM1400RE-3A	C-100	
CM1400RE-32A	C-100	
NM650 Modular Nugget Ice Machine		
NM650AE-1A	C-75	
NM650WE-1A		C-100
NM1250 Modular Nugget Ice Machine		
NM1250AE-32A	C-75	
NM1250WE-32A		C-100
NM1250AE-3A	C-75	
NM1250WE-3A		C-100
CSW1 Self Contained Cuber		
CSW1AE-1B	C-25	
AC 25 Cuber with Storage		
AC25SAE-1A	C-50	
AC25SAS-1A	C-50	
AC25SWE-1A		C-75
AC25MAE-1A	C-75	
AC 30 Cuber with Storage		
AC30AE-1B	C-50	
AC30WE-1B		C-75
AC30MAE-1B	C-75	
AN760 Ice Nugget Maker with Storage Bin		
AN760AE-1C	C-50	
AN760WE-1C		C-75
HQD 550 Hard Ice Nugget Cuber Dispenser		
HQD550AE-1C	C-75	
HQD550AS-1C	C-75	
HQD550WE-1C		C-100
HQD550WS-1C		C-100
HQD 650 Hard Ice Nugget Cuber Dispenser		
HQD650AE-1C	C-75	
HQD650AS-1C	C-75	
HQD650WE-1C		C-100

HQD 750 Hard Ice Nugget Cuber Dispenser		
HQD750AE-1C	C-75	
HQD750WE-1C		C-100
FD 4 Flake Ice Maker Dispenser		
FD4ASE-1D	C-50	
AFI Flaker with Storage		
AFIAE-1D	C-50	
AFIAS-1D	C-50	
AF 325 Flaker with Storage		
AF325AE-1B	C-50	
AF325AS-1B	C-50	
MF 400 Flaker with Storage		
MF400AE-1A	C-50	
MF400WE-1A		C-75
MF 700 Modular Flaker		
MF700AE-1A	C-75	
MF700WE-1A		C-100
MF 900 Modular Flaker		
MF900AE-2A	C-100	
MF900AE-3A	C-100	
MF900AE-7A	C-100	
MF900WE-3A		C-200
MF900WE-7A		C-200
MF6C Modular Flaker		
MF6CAE-2C	C-200	
MF6CAE-3C	C-200	
MF6CAE-7C	C-200	
MF6CWE-3C		RT-500-K
Flakers		
FT 400 Series		
FT 401A	C-50	
FT 104W		C-75
FT 800 Series		
FT 801A	C-50	
FT 801W		C-100

SUNBEAM-MILE HIGH EQUIMPMENT

Cubers		
220	C-5	C-75
440, 444, 600, 750	C-10	C-100
1000	C-25	RT-500
Flakers		
R-125, B-350	C-5	C-75
B-600, B-750, B-1000	C-10	C-100
SCD-550, HD Dispensers	C-10	C-100
B-1500, B-2500	C-25	RT-500
B-5000	C-100	RT-500

WHIRLPOOL

Cubers Self Contained		
CET4, CACAOS	C-75	C-75
CATS, CACAOS	C-75	C-100
CCS50	C-10	
CECS2	C-25	C-75
Modular Cubers		
CECTH4	C-75	C-75
CECTH6, CECH5	C-75	C-100
CECH8	C-100	RT-500
CECH8	C-100	
CCR-7W Remote Condenser		RT-500
CERH10	C-100	
DSB11W Remote Condenser		RT-500
Flakers Self Contained		
CEFS5	C-5	C-75
CEFS7	C-10	C-100
Flakers Modular		
CEFH5	C-5	C-75
CEFH7	C-10	C-100

NOTE: Ice machine model numbers are typically related to the model's 24 hour capacity to produce ice under standard conditions. Should you encounter a model number of a manufacturer that is not included in this list, it is possible to size Superior Water Conditioner® based on ice capacity. The ice capacity is directly related to water flow rate. Review list of ice machine models and their related capacities and size similar models accordingly.

COFFEE MAKERS

GENERAL DESCRIPTION OF EQUIPMENT

Scale plugs lines and insulates heating coils very quickly in coffee makers because of the small diameter tubing and the constant heating of fresh water. Scale reduces efficiency of equipment and requires more energy to operate.

Superior® controls this hard build-up and can lower the water surface tension, allowing for a cutback in coffee usage.

Caution must be used to periodically check half gallon brewer without a bottom drain of water reservoir as a soft aragonite talc may build up. Talc deposits are easily rinsed away.

The following sizing chart can be used as a guide for sizing Superior® for coffee makers.

COFFEE MAKER SIZING CHART

BRAND	FILL RATE	SUPERIOR MODEL No.
Boyd	.175 GPM	C-25
Bunn RT	.19 GPM	C-25
Bunn R1	.75 GPM	C-75
Silex	.75-.90 GPM	C-75, C-100
Curtis	.75-.90 GPM	C-75, C-100
Cory (old units)	.75 GPM	C-75
Cory (new units)	.25 GPM	C-25
Brewmatic	.75-.90 GPM	C-75, C-100

Note: For models not listed, please contact Superior Manufacturing.

STEAM COOKING

GENERL DESCRIPTION OF EQUIPMENT

When hard water turns into steam, the hardness (CaCo3) and impurities are left behind. These minerals collect and crystallize, creating an insulation between the heat medium and the water. The thicker the insulation, the longer it takes to produce steam… using more energy.

Superior® controls this scale build-up and keeps equipment operating at maximum efficiency.

SIZING

All steamers using packaged boilers up to and including 15 PSI operating pressure and containing up to 2 compartments and 1 kettle will use Superior® Model No. RT-750. (300,000 BTU's or 48 KW)

For properly sizing a Superior® unit on all other steam cooking equipment, complete the following data sheet and consult with a Superior Manufacturing Corp. representative.

Bun warmers require Superior® Model No. C-25.

DATA INFORMATION SHEET FOR SIZING STEAMERS FOR SUPERIOR WATER CONDITIONER® APPLICATIONS

1. Brand name and model number of steamer

   Brand Name_____

   Model Number_____

2. Water inlet feed line connection size (circle one)

   3/8” or ½” or other_____

3. Maximum water flow through feed line

   _____GPH

   _____GPM

4. What is the boiler operating pressure

   _____PSI

5. Does the steamer have a bottom blow down (circle one)

   Yes

   No

6. Is the blow down (circle one)
7.

   Automatic

   Manual

8. How many ovens and-or kettles does the steamer have

   _____Ovens

   _____Kettles

(Use one page for each steamer)

LARGE VOLUME REFRIGERATION SYSTEM, i.e. COMMERCIAL ICE MANUFACTURING EQUIPMENT

GENRAL DESCRIPTION OF EQUIPMENT

This is a type of atmospheric cooling tower for large volume refrigeration. The refrigerant gas is converted back into a liquid by compressing it and cooling it with water as it passes through a condenser. The water is pumped from the collecting sump to the spray pipe where it is cooled on the roof by air circulating through the sprayed water. The loss of water by evaporation is made up through the float valve on the make-up water line.

SIZING AND LOCATION

Same as for Atmospheric Cooling Towers

OPERATING PROCEDURES

Same as for Atmospheric Cooling Towers

MAINTAINING SCALE FREE DISHWASHER BOOSTER HEATERS

While a properly sized Superior Water Conditioner® can control lime/scale build-up on heat exchangers, low flow rates sometimes allow loose particles to accumulate in the heat exchanger tubes or chambers.

To overcome this, a regular flushing is desirable. Most boosters do not have a drain valve in place. By installing a drain valve, back flush valve, and regular flushing, loose material can be removed to a point. This depends on the configuration of the booster.

In the case of Hatco boosters, the place for the drain valve (not standard equipment) is in direct line with the fill line, opposite a "T". If one were installed, no flushing would be available. You can only drain the tank.

Steam boosters have no drain or tank. Because the water flows through several small tubes at a slower rate, some of these particles may retain in the heat exchanger tubes causing flow restrictions.

Champion boosters have a place for a drain valve in the bottom of each heater tank which is capped. The drain valve is not standard equipment.

If a drain valve is installed on a booster heater and flushing is done through the regular supply line, the flow rate is still low because of the pressure regulator in place. This can be overcome if a back flush valve is installed prior to the pressure regulator. This back flush valve is a 3 way valve which allows a flow in only one direction at a time. While in the back flush position, flushing is allowed to flow at line pressure, assuring a better cleansing action.

The following drawings show how the back flush valve could be installed.

RESTAURANT PROTECTS EQUIPMENT WITH SUPERIOR

The Fireside South Restaurant in Indianapolis, Indiana uses Superior Water Conditioners® to protect their foodservice equipment, water heater, and reduce salt usage in their water softener. Their water has a pH level of 7.0, 246 ppm hardness, 207 ppm CaCo3, and 0.1 ppm iron.

The details of how Superior is saving them time, money and energy follows.

COFFEE MAKER

The Fireside's Cecilware Model FE100 coffee maker had previously required removal of about a 5 gallon bucket's worth of scale every 60 days. This insulating scale build-up on the heating elements caused a longer heting time which required additional energy to make coffee.

Since the installation of a Superior Model No. C-100, their maintenance time is reduced to only two times a year, and the hard scale build-up is reduced to a soft "Talc" which is easily removed with a wet vacuum.

ICE MACHINE

Because of scale build-up, their ice machine, Whirlpool Model No. CCH45 WE/WS, was a constant problem. The machine required maintenance and down time was annoying.

After a Superior Model No. C-100 was installed their maintenance and service call costs were reduced by at least 40%. Even when services calls were required, equipment down time was reduced and the "talc" was much easier to clean.

MAINLINE

Because of the excellent results achieved in the coffee maker and ice machine, the Fireside installed a Superior Model No. RT-1250-AK on their mainline to protect all piping and other water-using equipment.

Their Hobart dishwasher, Model No. XM-4, required frequent cleaning to remove lime deposits and was causing spotting on dishes, despite the fact that a water softener was used. Spotting was reduced with Superior and the quantity of detergent and rinse additives used was also drastically reduced.

The water softener remained in place after the Superior installation with the Superior unit installed in-line before the softener to help reduce salt usage. Before Superior, their salt usage was 4800 lbs/month; after Superior only 1600lbs/month. A salt reduction of 67%.

Prior to Superior, the water heater was not consistently producing enough hat water to service the entire restaurant, and the local gas company was deliming the water heater 2-3 times per year. After Superior, they had plenty of hat water with faster heat recovery. Service calls by the gas company were reduced to one time per year and no deliming has been required. The estimated life of the heater has been prolonged by at least 5 years.

The owners of the Fireside South have recently opened another restaurant, which is also protected with Superior.

As illustrated in this case, Superior's applications in the foodservice industry are many, and the benefits include lengthened equipment life, reduced maintenance and down-time, fuel savings, less soap and softener salt requires, and the elimination of costly and sometimes hazardous chemicals.

SCHOOL DISTRICT INSTALLS SUPERIOR

The Alum Rock Unified School System in San Jose, California, has Superior units installed in all of their 28 schools treating Cleveland Range Steam cookers, Model No. 2-DG-24.

The school district had a problem with scale build-up in their steamers even though water softeners were used un many of the installations. Water conditions were 290 ppm total dissolved solids, 270 ppm hardness as CaCo3, 20 ppm silica, and 0.0 ppm iron.

Of the 28 installations, about half were causing problems prior to Superior installations. Some of the steamers were scaled up and some were delimed prior to the Superior installation.

Superior Model No. RT-500's were installed between June 1979 and June 1980. Equipment had been opened for inspection periodically during normal school vacations, and in all cases boilers were free of scale and no further corrosion has been observed. From the time of installation, no downtime has occurred on any stem boiler.

Carol Neal, RD, Director of Food Service and President of the California School Food Service Association, I sold on Superior and will not install nay steam equipment without having it protected with a Superior unit. She had problems before using Superior, and now…no problems with hard water related downtime.

CASE STUDY TAMP GENERL HOSPITAL

This is a large Champion UC 25 CW3T dishwasher that operates about 16 ours a day. It has a steam booster. Maintenance was being called very often because the rinse water temperature could not be maintained. The booster had to be removed twice a year to be acid cleaned. Lime-Asay was being used at a rate of 3 gallons every other day. Soap consumption was very high.

A Superior Water Conditioner®, Model RT-1000-K, was installed on the incoming water line in February 1992.

After two weeks, large amounts of loose scale were found in the bottom of the dishwasher. This had come from the heating elements, which were now free of scale.

After three weeks, maintenance was called to lower the temperature of the booster. Now the temperature is easily maintained at the desired level.

The booster has not been removed fro acid cleaning since the Superior Water Conditioner® was installed more than a year ago.

Lim-Away use has been extended to every 12 weeks instead of every other day. Soap consumption has dropped by 50% as the probes are now kept clean.

HOT AND COLD WATER SCALE PROBLEMS SOLVED AT SAME LOCATION

The Fishkill Correctional Institute of the New York State Department of Corrections consistently faced shut-down for cleaning lime-scale build-up from both ice-makers and steam generators.

The customer decided to test Superior Water Conditioners® as the potential solution to this continuing maintenance problem. One Superior was installed on one of two icemakers, and one of seven steam generators. Weekly inspections were conducted on both the treated equipment and on the untreated units.

The test lasted nine months. On both hot and cold applications, the equipment treated with Superior functioned in a trouble-free manner and required no maintenance and experienced o downtime. The untreated icemaker and the sic untreated steam generators developed scaling problems, which resulted in downtime and excessive maintenance.

Based on this side-by-side test in water of 10-13 grains per gallon of total hardness as CaCo3, the Fishkill Institute purchased six additional Superior Water Conditioners® for the steam generators and outfitted the remaining icemakers in a like manner. In addition, other water systems are being surveyed and sized for immediate use of Superior Water Conditioners®.

WEST COAST FOOD SERVICE COMPANY
SOLVES WATER PROBLEM USING SUPERIOR®

Happyco is the major control company for Happy Steak Restaurants, Early Dawn Cattle Company stores, and PERKO Coffee Shops. Superior Water Conditioners® are used as main line treatment in three locations and on all icemakers in the three chains (over 50 units).

The first Superior® installation was in February of 1979. The original reason for installation was: a) to descale older icemakers and b) to act as preventative maintenance on newly purchased ice machines. The water treatment program has expanded since to the main treatment and to their food service equipment.

The combined maximum water components for this set of installations follow:

Hardness (as CaCo3)	250 ppm (max)
Iron	0.2 ppm (max)
TDS (as CaCo3)	300 ppm (max)
Silica	125 ppm max)

(It should be noted that problems with high levels of silica required the use of "drain-flush-and fill" maintenance program in additional to Superior®.)

All installations are inspected frequently as part of the normal maintenance cycle. Currently, all Superior® treated equipment is in a "free-from-scale" condition.