

COMBOMAX[®]

Combined boilers and water heaters

Sizing Guide

APPARTMENTS, CONDOMINIUMS, HÔTELS, MOTELS



The COMBOMAX[™] Sizing Guide shows requirements for multiple dwellings. The bathing or shower load depends on the building size. Take into account the number of units and unit occupancy, the type of shower heads utilized and the peak demand period over which the bathing load is spread. The requirements for hot water for other large loads such as clothes washers, have not been considered. Provide additional storage and recovery capacity to satisfy the needs of these additional loads. The requirements of recovery capacity and storage capacity may, in some areas, be fixed on a per apartment or per person basis by building codes or housing authorities. In these cases, the designer must meet the specified requirements.

To use the tables, determine number of apartments. Secondly determine number of occupants. If average occupancy differs from the average per unit, use the actual number of persons for estimating the gallons required, Number of units.

2 HOUR PEAK PERIOD:

Commercial selection guide: Count your number of units, the average total units surface and number of persons

The associated number under the KW column corresponds to the necessary boiler power to satisfy your needs in DHW and heating.

A fraction of the domestic water load has been added to the heating load to determine the boiler total power as mentioned by the ASHRAE Handbook.



Équipements de chauffage haute performance

Real Nbr. Of Persons	Required Salions 2 Hours	DHW ONLY		Average Surface of 750 f12 per unit - Buildings built after 1990 (see notes)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
				4 units		6 units		8 units		10 units		12 units		14 units		16 units		18 units		20 units		22 units		24 units		26 units		28 units		30 units		32 units		34 units		36 units		38 units		40 units		42 units		44 units		46 units		48 units		50 units		52 units		54 units		56 units		58 units																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW	QTY	KW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
8	92	1	6	1	24	1	30	1	36	1	42	1	55	2	30	2	36	2	42	2	42	2	48	2	55	2	55	2	60	3	42	3	45	3	48	3	55	3	55	3	55	3	60	4	48	4	48	4	55	4	55	4	55	4	60	4	60	4	60	4	60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
12	143	1	9		24		36		42		55		30		36		42		55		30		36		42		55		30		36		42		55		30		36		42		55		30		36		42		55		30		36		42		55		30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	42	55	30	36	

Hot water consumption evaluation based on:

5 minutes shower with a 3 GPM water flow

Includes showers' load and other minimum loads as residential sinks and dishwashers.

If the water flow is 5 GPM, then multiply the "Required Gallons" column by 1.6

Domestic cold water higher than 40F

Boiler water temperature at 180F

Thermostatic mixing valve at 140F (maximum setting)

Building heat losses evaluation based on:

An outside temperature at -22F (-30C).

An average surface of 750 ft² per unit

These values are for buildings built after 1990

For a building built between 1970 and 1990, **multiply the number of units by 1.25**

For a building built before 1970, **multiply the number of units by 1.5**

For an average surface of more or less than 750 ft², multiply the number of units by the ratio of average surfaces (ex: if 1000 ft², multiply per 1.33 & if 500 ft², multiply per 0.67)

Example:

Building built in 1975

14 units

Total of 28 persons

Average surface of 500 ft² per unit

Equivalence of units = 14 units X 1.25 (1975) X 0.67 (500 ft²) = 12 units

Selection : 2 X COMBOMAX 120-9 36 KW

3 HOUR PEAK PERIOD:

Commercial selection guide: Count your number of units, the average total units surface and number of persons

The associated number under the KW column corresponds to the necessary boiler power to satisfy your needs in DHW and heating.

A fraction of the domestic water load has been added to the heating load to determine the boiler total power as mentioned by the ASHRAE Handbook.



Équipements de chauffage haute performance

[illegible]

Hot water consumption evaluation based on:

5 minutes shower with a 3 GPM water flow

Includes showers' load and other minimum loads as residential sinks and dishwashers.

If the water flow is 5 GPM, then multiply the "Required Gallons" column by 1.6

Domestic cold water higher than 40F

Boiler water temperature at 180F
Thermostatic mixing valve at 140F (maximum setting)

Building heat losses evaluation based on:

An outside temperature at -22F (-30C).

An average surface of 750 ft² per unit

These values are for buildings built after 1990

For a building built between 1970 and 1990, multiply the number of units by 1.25

For a building built before 1970, **multiply the number of units by 1.5**

For an average surface of more or less than 750 ft², multiply the number of units by the ratio of average surfaces (ex: if 1000 ft², multiply per 1.33 & if 500 ft², multiply per 0.67)

Example:

Building built in 1975

14 units

Total of 28 persons

Average surface of 500 ft² per unit

$$\text{Equivalence of units} = 14 \text{ units} \times 1.25 (1975) \times 0.67 (500 \text{ ft}^2) = 12 \text{ units}$$

Selection : 2 X COMBOMAX 120-9 30 KW