



Information



Chiller
Sizing for
Industrial App.

1 Known BTU load.

Divide (BTU) by 12,000 to get tons required.

2 Unknown BTU load, known GPM flow.

Find the temperature difference of the liquid between the inlet and outlet of equipment to be cooled.

Water

Multiply (GPM) X (500) X (ΔT)*, the result is the BTU load.

Divide (BTU) by 12,000 to get tons required.

Other liquids

Multiply (GPM) X (SG)** X (60) X (ΔT)* X (SH)***, the result is the BTU load.

Divide (BTU) by 12,000 to get tons required.

3 Unknown BTU load, Unknown GPM flow.

Take container (5 Gal ?) Weigh it. Unhook outlet of equipment to be cooled and allow it to fill container for (1 minute). Weigh it again. Subtract original weight of container from weight of container full of liquid. Divide result weight by specific weight of liquid. The result will give you (GPM) to use in formula below.

Find the temperature difference of the liquid between the inlet and outlet of equipment to be cooled.

Water

Multiply (GPM) X (500) X (ΔT), the result is the BTU load.

Divide (BTU) by 12,000 to get tons required.

Other liquids

Multiply (GPM) X (SG)** X (60) X (ΔT)* X (SH)***, the result is the BTU load.

Divide (BTU) by 12,000 to get tons required.

* (ΔT) The Delta "T" is the Temperature Difference of the inlet minus the outlet. ($T_2 - T_1$)

** (SG) The specific Gravity is the ratio of the weight of a liquid to the weight of an equal volume of water.

*** (SH) The Specific Heat, is the ratio of its thermal capacity to that of water.

Building better Chiller Systems since 1981

MASTER CHILLER INC. 3730 Dividend Dr. Garland, TX. 75042

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Information



Chiller
Sizing for
Dry-cleaning

1 General rule for sizing of Perc. refrigerated Dry to Dry Machines.

A - Up to 35 pound machine 5 Ton Chiller.

B - 36 to 55 pound machine 7 1/2 Ton Chiller.

C - 56 to 75 pound machine 10 Ton Chiller.

Note - Approximately 0.15 tons per pound of machine rated load capacity.

2 More accurate sizing of Perc. refrigerated Dry to Dry Machines.

A - Find the refrigeration compressor rated horsepower and divide that number by 2. The result of this calculation is the tons needed for cooling the refrigeration compressor.

This Hp rating is available from the machine manual or brochure. The model number of the compressor will also usually give you the Hp.: As in Copland numbers XXX-0500-XXX, = 5 ton.

B - Find the D/C machine basket rated pounds capacity. Multiply this number times 0.09. The result of this calculation will give you the amount of tons needed for distillation and cooling of solvent.

This pound rating is available from the machine manual or brochure. This formula is based using a machine on a two bath (pre wash) program operation with 1.5 loads per hour.

C - Add the results of the two calculations above to gather to get the tons of chiller required for cooling the water for the machine.

3 Most accurate sizing of Perc. refrigerated Dry to Dry Machines.

A - Find the refrigeration compressor rated horsepower and divide that number by 2. The result of this calculation is the tons needed for the refrigeration compressor.

This Hp rating is available from the machine manual or brochure. The model number of the compressor will also usually give you the as in Copland numbers XXX-0500-XXX, = 5 ton.

B - Find the actual amount of solvent being distilled per hour. Divide that number by 10. The result of this calculation will give you the amount of tons needed for distillation.

Note - For every ten gallons of Perc. solvent distilled per hour or five gallons per half-hour you require one ton of chiller.

C - For Perc. solvent cooling use:

Up to 35 pound machine 0.5 ton.

36 to 55 pound machine 0.75 ton.

56 to 75 pound machine 1.0 ton.

D - Add the results of the three calculations above to gather to get the tons of chiller required for cooling the water for the machine.

4 For multiple machines.

Calculate each machine individually and add together.

5 If you have any questions call the factory at 1-800-666-5822 or page Phil Byrd at 1-800-210-0507.

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