



# AIRCOOLED AFTERCOOLERS

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Ref: 11723.01  
Date: 21 September 1992  
Cancels: 20 April 1992

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## AIRCOOLED AFTERCOOLERS PERFORMANCE

Many factors affect the performance of an aftercooler. The following operating conditions must be known in order to make a proper selection and accurate performance can be determined:

1. Air Flow in SCFM
2. Air inlet temperature in °F
3. Required cold temperature difference (CTD)
4. Ambient air temperature in °F.

### GENERAL SELECTION NOTES

#### Air Inlet Temperature

The air temperature discharging from a compressor can vary over a wide range and is affected by many factors. For ease of making selection we have selected the discharge temperatures associated with the types of compressors we deal with the most. As you will see on the following selection chart, we have shown capacity in SCFM at 100 psig + 250 psig for various inlet air temperatures.

#### Moisture Control of Compressed Air

If the ambient air is at a high temperature and high relative humidity large amounts of moisture will be taken into the compressor. It takes more latent cooling to condense this moisture in the aftercooler therefore, less cooling is available for sensible cooling of the air.

Performance selection has been based on 68°F ambient at 36% relative humidity at intake of compressor.

If inlet conditions to the compressor vary greatly from this, contact Product Management for correct selection.

#### Cold Temperature Difference (CTD)

This is the air outlet temperature minus ambient air temperature. The lower the required CTD the larger aftercooler is required. A 15°F CTD has been the standard in the industry for many years. This should be reviewed very closely.

When a lower CTD Cooler is selected the price will increase; however, because of lower discharge air temperature you may be able to save a great deal more by being able to select a smaller air dryer.

#### Selection Procedure

##### Step 1

Determine air inlet temperature to cooler. In most cases type of compressor can be used.

##### Step 2

Determine required CTD. Most selections are based on 15°F CTD; however, desired air discharge temperature should be considered.

##### Step 3

Once air temperature and CTD are selected go down the appropriate capacity column until you come to the model where the unit equals or exceeds the required CFM. Performance for different temperatures may be extrapolated provided it is done conservatively