
IPAC

WATER-COOLED AFTERCOOLER

INSTALLATION AND MAINTENANCE INSTRUCTION MANUAL

INSTALLATION

It is recommended that the water-cooled after-cooler be installed close to the outlet of the air compressor. The cooling water must flow in the opposite direction of the compressed air stream (counter-flow).

It is recommended to install shut-off valves on both the water inlet and outlet, ensuring that the size is never smaller than that of the cooling water connections.

Removable tube bundle units should be installed so that the “packing rings” on the bundle is on the discharge air side, or on the cool side of the unit.

Use a funnel on the water outlet side so that the water flow can be observed. If a pressurized water system is available, a flow indicator should be installed. A flexible connector should be installed between the compressor and after-cooler, whenever possible.

Before installation of horizontal Models W0035 to W0210 and W0039 to W230, the airlines just before and after the cooler should be fixed allowing the cooler to be mounted without clamps. Larger after-coolers should be fixed either to the wall, the ceiling, or the ground for support.

OPERATION

1. Cooling water should be clean and free of solid contaminants since these factors could cause clogging of the water passage.
2. Water should be passing through the after-cooler prior to starting the compressor. The after-cooler should NEVER be operated without water.
3. Cooling water should NEVER leave the cooler at a temperature above 105 Degrees F in order to reduce lime stone scale.
4. To remove moisture from the air, a condensate separator is recommended. Condensate should be drained at short intervals from the separator. If the condensate level in the separator is too high it could pass downstream into the compressed air piping system. It is recommended that a no air loss Bekomat drain, or float or timer drain be used to discharge condensate from the separator.

MAINTENANCE AIR SIDE

Since lubricated compressors leave oil in the air, deposits are very common. Contaminants such as dust also come in from the air intake side blocking the passage of air. Therefore, it is important that the bundle should be cleaned regularly for optimum performance. This can be done manually or by using a mild solvent compatible with the construction materials of the cooler. It is recommended to check the cooler during the first six (6) months to establish the future intervals of inspection.

MAINTENANCE WATER SIDE

Due to water hardness and other impurities, scale could form on the outside of the tubes. Apart from reducing the heat transfer, the scale could obstruct or even block the water passage. To avoid excessive scale formation, the water outlet temperature should be as low as possible, which can be achieved by passing more water. To remove scale once it has been formed, a mild solvent should be pumped through the water connections. The chemicals used should be compatible with the materials of the after-cooler.

HORIZONTAL INSTALLATION

Installation illustrates a water-cooled after-cooler attached to a moisture separator. Red arrow is hot compressed air entering the water-cooled after-cooler and the cooling water arrows in blue entering the opposite end of the cooler in a counter flow. The cooling water then leaves the cooler at the opposite end in a much warmer state and to a sewer drain or in some cases to a heat recovery heat exchanger. The air leaving the after-cooler then passes through a moisture separator in order to remove condensed moisture as illustrated.



