

## APPLICATIONS BY API HEAT TRANSFER

# Type "500" Coolers for Rotary Screw Compressors

With the introduction of a simpler Helical-

Lobe Rotary Compressor or Oil Flooded Screw Machine in the late 1960's, a new era of more economical compressors was born.

These new rotary "Screw" machines, as they are now called, began replacing the lower horse-power range of Centrifugal and Reciprocating Compressors which are both more expensive to buy and maintain. Basco's then recently introduced line of compact fixed tubesheet Type "500" Heat Exchangers was a perfect fit for this new compressor application. Marketed as a low cost "throw away unit" because it is cheaper to replace than repair, the Type "500" soon dominated oil cooling and aftercooling requirements of the Rotary Screw Compressor industry.

The Type "500" derives its name from Basco's 1960's system of denoting all product lines using numbers instead of TEMA designations (AEM / BEM etc.) to identify them. The Engineered Fixed Tubesheet Design (TEMA "BEM") was simply called Type 5's. The Type 5 was the bolted version; the Type 50 was the all welded version. Therefore the next version for the new small compact fixed tubesheet design was destined to be called the Type "500"

The screws of a Rotary Screw compressor are submerged in an oil bath. As outside air is drawn in, these turning screws compress the air. This mechanical action heats the air/oil stream resulting in the need for cooling in heat exchangers. From the compressor the air & oil are sent through an air/oil separation tank and on to two Basco Type "500" exchangers piped in series on the cooling waterside. The first Type "500" cools the "hot" air from approximately 200° F down to 110° F for use in a production process or pneumatic tools. Cooling has two benefits in that it cools the air for safe usage and also dries the air by condensing the water vapor out at the lower temperature. The cool dry air not only protects the end user from the hot temperatures caused by the compression of the air (through the compressor) but also protects steel pipes from corrosion and sediment build up, saving major dollars in manufacturing down time and service related problems.

The second Type "500" is designed to cool the "hot" oil, which lubricated and sealed the screw compressor, from approximately 200° F down to 140° F so it can be recycled back to the compressor, thus preventing over-heating.

API Heat Transfer's Basco Type "500" product line has been extended over the years to include a wide variety of material options and designs. Today we offer 1, 2, and 4-pass arrangements; 1/4", 3/8" and 5/8" tube diameters; shell diameters from 3" to 12"; straight tube and U-tube configurations; and a broad selection of materials of construction. API can also offer the Type "500" with ASME Code & TEMA "C" in order to meet more sophisticated requirements of our customers without the need to purchase more costly engineered TEMA Types.



From its early success in the Rotary Screw compressor market, the Basco Type "500" has proven to be a reliable, cost effective performer in an ever increasing number of markets and cooling applications due to its tremendous flexibility in material and design, coupled with its short lead-times.

## API Heat Transfer

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