



Sauer Compressors



less temperature!

less maintenance cost!

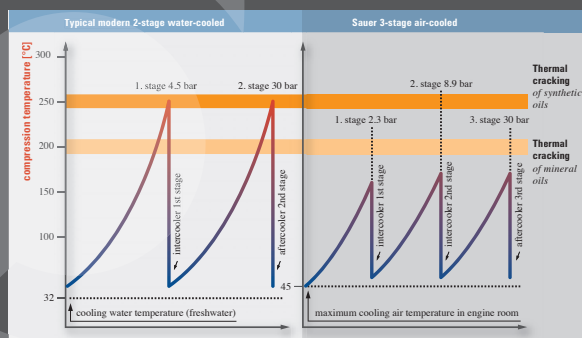
less installation cost!

Dependable Compressors:

- *reliable*
- *low maintenance*
- *well proven*

Your advantages by using

Air-cooled Sauer Compressors in 3-stage design



Your Advantages as a shipowner and as a shipbuilder

Less temperature due to lower stage pressure ratio!

In former times air-cooled compressors were limited to 80 m³/h due to the high compression temperatures (above 250°C). With the development of the 3-stage air-cooled compressors more than 30 years ago, a new generation of compressors appeared in the market. The 3 stages are the reason for the lower temperatures (less than 170°C) and make satisfactory cooling by air possible.

Due to the laws of physics air is heated during compression. The final compression temperature depends on the compression-ratio in each stage. By dividing up the total compression-ratio into 3 stages; lower compression temperatures in the cylinders and valves can be achieved compared to 2-stage water-cooled compressors.

Today 3-stage air-cooled design is the world standard in shipping technology.

Less maintenance cost due to longer maintenance intervals!

Due to the lower compression temperatures the thermal cracking of the lubricating oil will not be reached and consequently the compressor valves will not be soiled by oil coke. Thus Sauer Compressors can guarantee maintenance intervals up to 4,000 hours for the valves which reduce the maintenance costs compared to 2-stage water-cooled compressors. The reduced compression temperatures allow the use of standard mineral oil SAE 30 as it is used e.g. in 2- and 4-stroke diesel engines. The use of expensive synthetic oil is not required for proper performance.

3-stage air-cooled design for lowest operation costs of your ship!

Less installation cost due to no cooling water system!

By abolishing the cooling water circuit with its flanges, packings, fittings and cooling water pumps, a higher reliability and an easier control and supervision of the compressors is achieved.

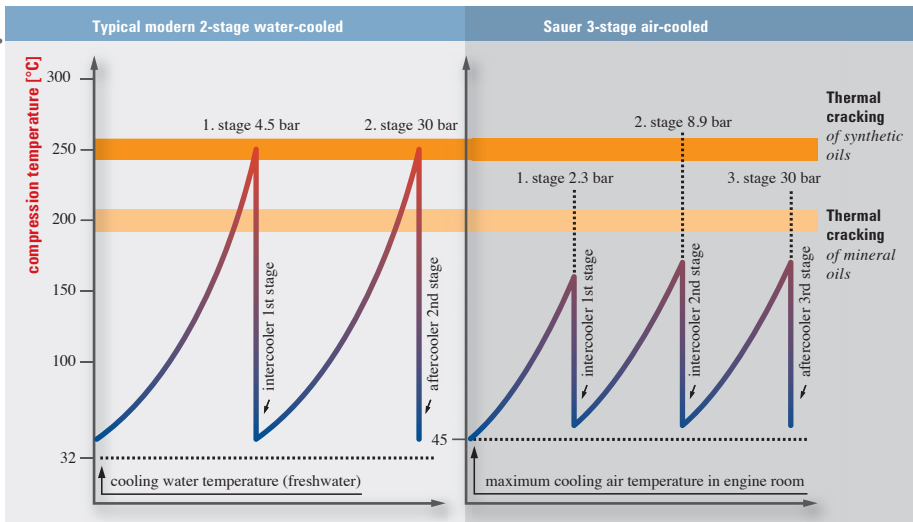
The simple way of cooling is also the reason for more and more shipyards to prefer air-cooled compressors. In addition to the fact that an auxiliary with less interfaces is installed, the weight and space is smaller thus enabling lighter and less expensive foundations. The total ventilation of the ship has not to be increased. The compressors have only to be taken into consideration in arrangement of the ventilation.

Air cooled compressor design – most competitive option also for the shipyard.

Special Features of Sauer Compressors' low-maintenance 3-stage air-cooled compressors:

- Available from 66 up to 365m³/h capacity
- Final pressure 45 bar
- Suitable for continuous running 24/7
- Separator mounted after each stage
- Reliable and safe operation up to 60°C
- More than 12,000 units sold since 1977

Temperature rise of air during compression



Temperatures rise so far during compression. Temperatures calculated based on the laws of physics and technical regulations. Above mentioned temperatures occur in the cylinders/valves and cannot be compared with temperatures displayed on compressors by standard thermometers.

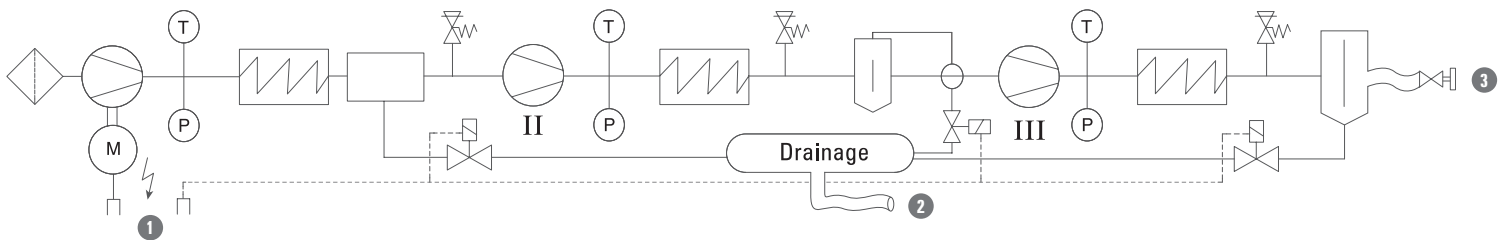
- Extended lifetime of the valves due to lower temperatures
- Reduced crew costs due to easy maintenance
- Reduced spare part consumption due to lower compression temperatures
- Designed for use with standard mineral oil SAE30
- No corrosion or water leakages
- Operation possible without running NT system (Black Start possibility)



3rd stage air-cooled valve after 2,500 hours



2nd stage water-cooled valve after 800 hours



- No cooling water lines and fittings
- No cooling water control system
- Less interfaces
- Smaller central SW/FW heat exchanger possible
- Cost saving for the yard up to 7.500 USD per ship

No interface for cooling water required!

Only 3 interfaces:

- 1 Electric
- 2 Drainage (1 flexible hose)
- 3 Compressed air outlet

Firms with excellent reputations around the world rely on Sauer 3-stage air-cooled compressors



Upon request, Sauer Compressors will provide you with further information and references.

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