

SINCE 1865

AIR-COOLED HEAT EXCHANGERS AND PIPING HIGH PRESSURE

PRESENTATION



In the beginning of the 1970s, Tallinn Machinebuilding factory (hereinafter TMT), in cooperation with the engineering institutes VNIINEFTEMASH (Moscow) and VNIPTkhimnefteapparatury (Volgograd), developed and introduced into mass production an air cooler operating under high pressure (160 kg/cm²–320 kg/cm²).



DESIGNS

Six-row two-pass section,
AVG (horizontal air-cooling
unit) 320, B1 design.



DESIGNS

Four-row two-pass section AVG 320, B2 design.



Discharge type. 2AVG configuration

VARIOUS CONFIGURATIONS

ACHE configurations of all kinds:

- irrigation systems,
- louvers,
- fans,
- motors,
- frequency converters,
- header piping.



DESIGNS

Exhaust type
AVG 320, B1 design



DESIGN Implemented header structures: headers with manifolds, headers with spools.
In-house engineering department. Sustainable and robust solutions.



DESIGN Headers with manifolds, conventional design, testing methods: MT, PT and UT.



DESIGN

Headers with spools:

- no strips as intermediate members connecting the heat-exchange tube and header casing
- reduced volume of welded joints
- precise geometry (fewer thermal distortions)
- possibility to monitor a heat-exchange tube and a header
- reduced weight of final product



DESIGN

- Headers with spools
- less welding
 - reduced weight
 - reliable testing methods



ISO 9001:2015

Quality management system

Quality control plan is under development

Incoming inspection:

- visual
- dimensional

Traceability is ensured at every stage

Marking is retained:

- structural components
- welders' stamps

Hydraulic tests witnessed by the customer's representative.

EN ISO 3834-2

Welding production

We engage an independent laboratory in the following non-destructive tests:

- VT (visual test)
- MT (magnetic test)
- PT (penetrant test)
- UT (ultrasonic test)
- RT (radiographic test)
- Welder performance qualification.



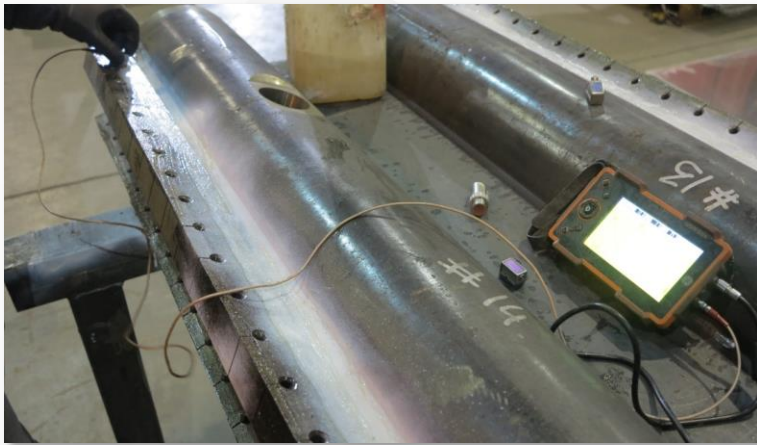
CONTROL

Component marking, incoming and dimensional inspection.

AIR-COOLED HEAT EXCHANGERS AND PIPING HIGH PRESSURE



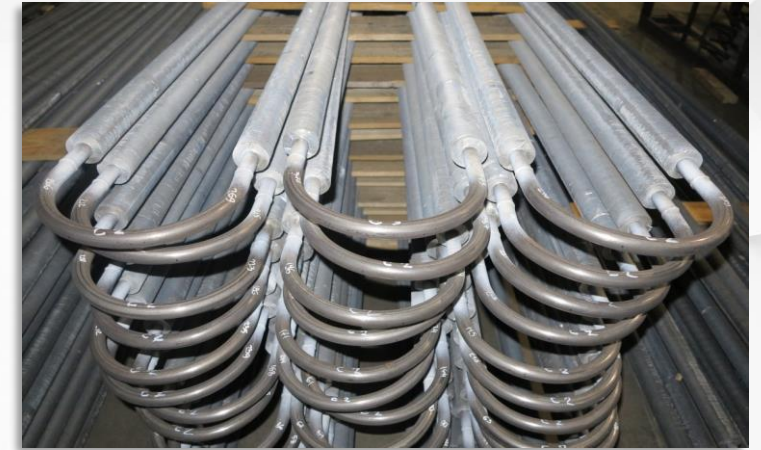
CONTROL



Ultrasonic test of headers with manifolds



X-ray test of heat-exchange tube welds and U-bends



magnetic test of heat-exchange tubes and U-bends

CORROSION PROTECTION

In-house paint shop.

Pre-cleaning

shot-blasting chamber
metal shots

Hot dip galvanization

thickness 70 to 110 μm
durability
less repairable.

Paint coating.

Paint schemes:

Epoxy scheme,
polyurethane

C3: up to 180 μm

C4: up to 240 μm

We use the following paints:

- INTERNATIONAL
- HEMPEL
- JOTUN
- TIKKURILA



CORROSION PROTECTION

Hot dip galvanization
- thickness 70 to 110 μm



- durability
- less repairable

CORROSION PROTECTION

Hot dip galvanization



AIR-COOLED HEAT EXCHANGERS AND PIPING HIGH PRESSURE

CORROSION PROTECTION

Paint coating.

Paint schemes:

Epoxy scheme,
polyurethane
C3: up to 180 μm
C4: up to 240 μm

We use the following
paints:

- INTERNATIONAL
- HEMPEL
- JOTUN
- TIKKURILA



AIR-COOLED HEAT EXCHANGERS AND PIPING HIGH PRESSURE



PIPING PRODUCTION

TMT has mastered the methodology of strength analysis and production of piping: inlet and outlet headers.

Co-design of ACHE and product headers: guaranteed alignment of the components to be joined; maximum pre-assembly at the factory; factory testing of welded joints; corrosion coating; reduction in commissioning time.

PIPING PRODUCTION

Thick-walled pipes

- boiler steel (P355, NL, NL1, NL2)
- up to Ø450 x 55

Best vendors of materials



PIPING PRODUCTION

Factory testing of welded joints

Alignment of elements to be joined is guaranteed



Mechanical processing

Root pass welding



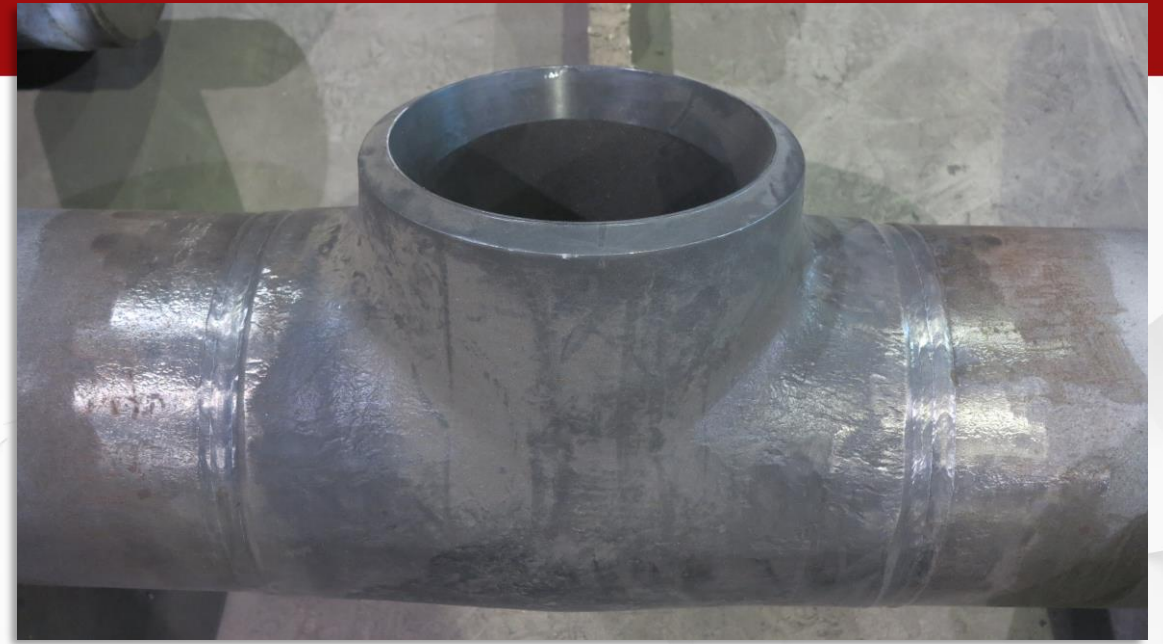


PIPING PRODUCTION

Piping header assembly



PIPING PRODUCTION



Pre-assembly at the factory

Alignment of elements to be joined is guaranteed



PIPING PRODUCTION

Corrosion coating at the factory



AIR-COOLED HEAT EXCHANGERS AND PIPING HIGH PRESSURE





PACKAGING AND SHIPMENT

Products are shipped by road and rail by agreement with the customer.

Shrink-wrap packaging can be used, in order to improve the safety of products:

- long shelf-life,
- harsh climatic conditions,
- long-distance transport.

ENGINEERING SUPPORT

TMT provide the following services: installation supervision for the equipment supplied, audit of technical condition of the heat-exchanger sections, measuring of fan system performance

Manufacturer's engineering support enables prompt resolution of issues which arise during installation, as well as reduction of the time of installation and commissioning.

THANK YOU FOR YOUR ATTENTION!

