Sample Cooler

NK 20

Installation and Operating Instructions

EN

English

NOTES

CONTENT

1. SAFETY INFORMATION

Installation, commissioning and maintenance of this device must be done by a qualified personnel in compliance with the operating instructions. Otherwise device and related equipments may be damaged and personnel may be injured. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

National and local regulations must be taken into consideration.

Warning!

Please make sure to remove the main supply before installation. Otherwise this may cause damage to the product, personal injuries or even death

1.1 Tools

Before starting work, make sure that you have suitable tools and and consumables available.

1.2 Temperature

Let the temperature to cool down after isolation to avoid danger of burns.

1.3 Freezing

Required precautions must be taken at the places where they may be exposed to temperatures below freezing point.

1.4 Lighting

Make sure there is enough lighting, particularly where detailed or tough work is required.

1.5 Pressure

Make sure that any pressure is isolated and safely vented to atmospheric pressure. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

1.6 Access

Before attempting to work on the product, safe Access must be ensured. If necessary, lifting gear should be used.

1.7 Residual hazards

The external surface of the product may be very hot. If used at the maximum operating conditions according to the specs, the surface temperature of some products may reach temperatures of 239°C.

1.8 Hazardous environment

Plant rooms are usually explosion risk areas. There may be lack of oxygen, dangerous gases extremes of temperature, hot surfaces, fire hazard excessive noise, moving machinery.

1.9 Suitable protective clothing

In order to be protected against the hazards of chemicals, high temperature, radiation, noise, falling objects, and dangers to eyes and face, anyone around requires protective clothing suitable in the plant room.

1.10 Hazardous liquids or gases

Be aware of that it cannot be known what may have been in the pipeline at previous usage. Consider: flammable materials, substances hazardous to health, extremes of temperature.

1.11 Supervision

All work must be carried out or be supervised by a suitably competent person. Installation and operating personnel should be trained in the correct use of the product according to the Installation and Operation Instructions.

1.12 Disposal

Unless otherwise stated in the Installation and Operation Instructions, this product is recyclable and no ecological hazard.

1.13 Returning products

When returning products to Vira Isı ve Endüstriyel Ürünler A.Ş the customers must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk.

2.GENERAL INFORMATION

2.1 Description

The Vira sample cooler is a small heat exchanger which has been specifically designed for taking high quality samples quickly and safely by using cold mains water to cool the sample taken from the boiler.

Samples taken for measure conductivity of the boiler water are very hot approx. 160 °C (320 °F) and contains flash steam. It is difficult to take sample without a sample cooler and it causes incorrect measurements. Vira sample coolers provide safe, easy and accurate sampling.

A properly taken cool sample is required for analysis. When taking a sample out of boiler water, it is important to ensure that it is a proper sample that represents.

It is not recommended to ;

- Take sample from level gauge glasses; since there is a continual condensation in the level gauges, the water here is relatively pure condensate.
- Take samples from somewhere close to boiler feedwater inlet which may most probably give a false reading.

Most of the operators install a sample cooler connection from TDS blowdown, and it is generally possible to obtain a true sample from this location.

It is also not recommended to draw water out of boiler by not using sample cooler, it may cause to create flash steam since its pressure is reduced. It may also be highly dangerous for the operator. Besides, analysis may give quite wrong results because of the flash steam concentration of the sample.

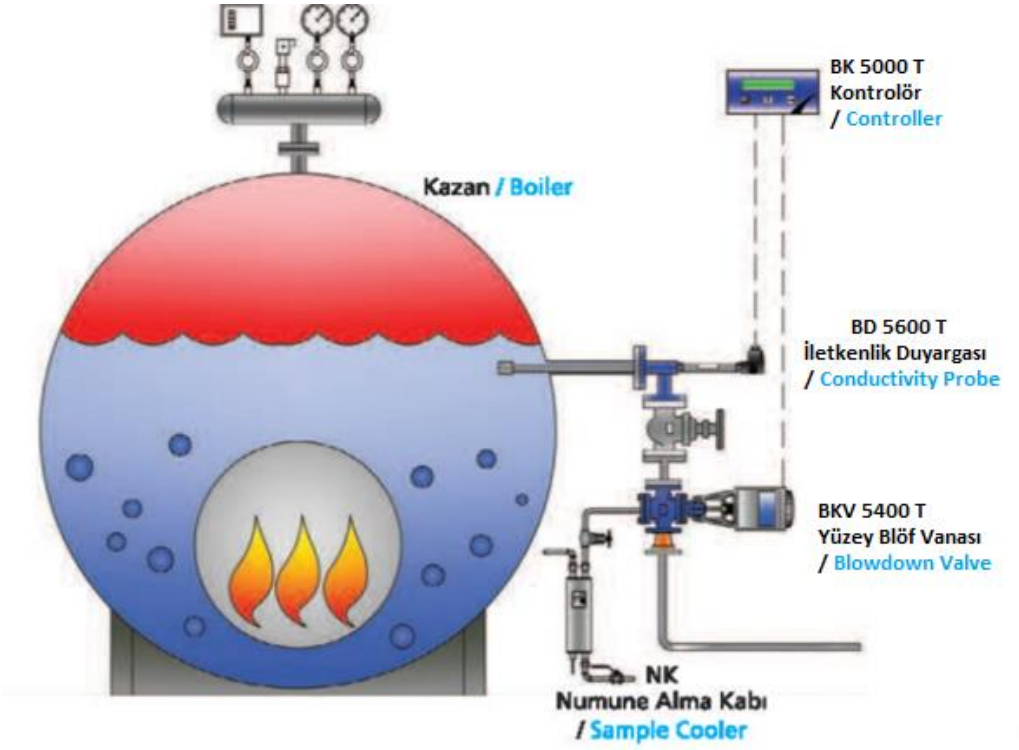

Figure 1: Sample cooler application to a steam boiler

3.TECHNICAL SPESIFICATIONS

Body	: Stainless steel
Body nominal pressure	: PN 16
Body max. operating temperature	: 180 °C
Body max. operating pressure	: 16 bar g
Serpentine	: Stainless steel
Serpentine nominal pressure	: PN 40
Serpentine max. operating temperature	: 239 °C
Serpentine max. operating pressure	: 32 bar g
Cooler water connections	: 1/2'' BSP Screwed, DIN 2999
Sample water connections	: 1/4'' BSP Screwed, DIN 2999
Weight	: 5 kg

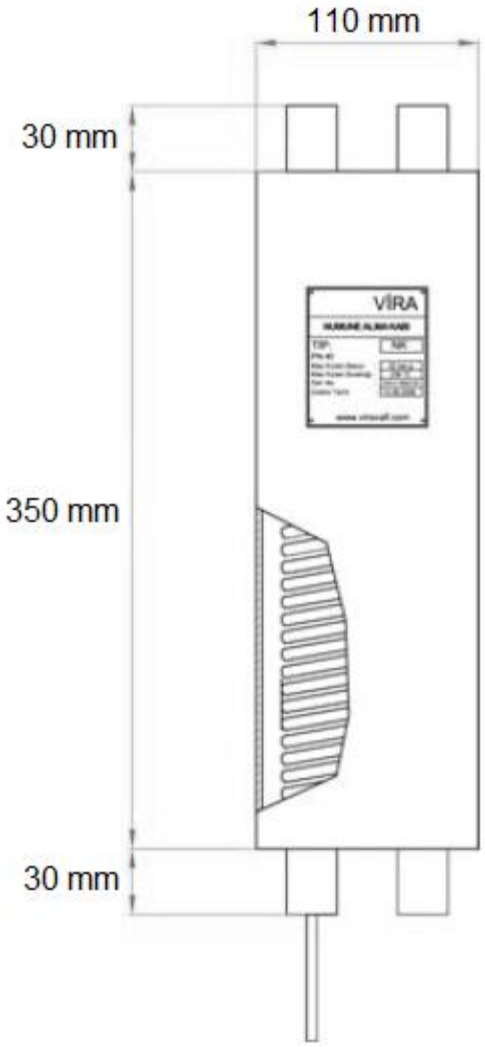

Figure 2: NK Sample Cooler dimensions

4. INSTALLATION

- Sample cooler must be mounted vertically and to an easily accessible place.
- Connect a needle valve to sample inlet. A suitable valve can be connected to cooling water inlet (Figure 2).
- Pipe the cooling water out from the top of the sample cooler to an open drain or blowdown line.
- Cooling water must be clean and its temperature must be under 25 °C.
- No connection is required on the sample out.

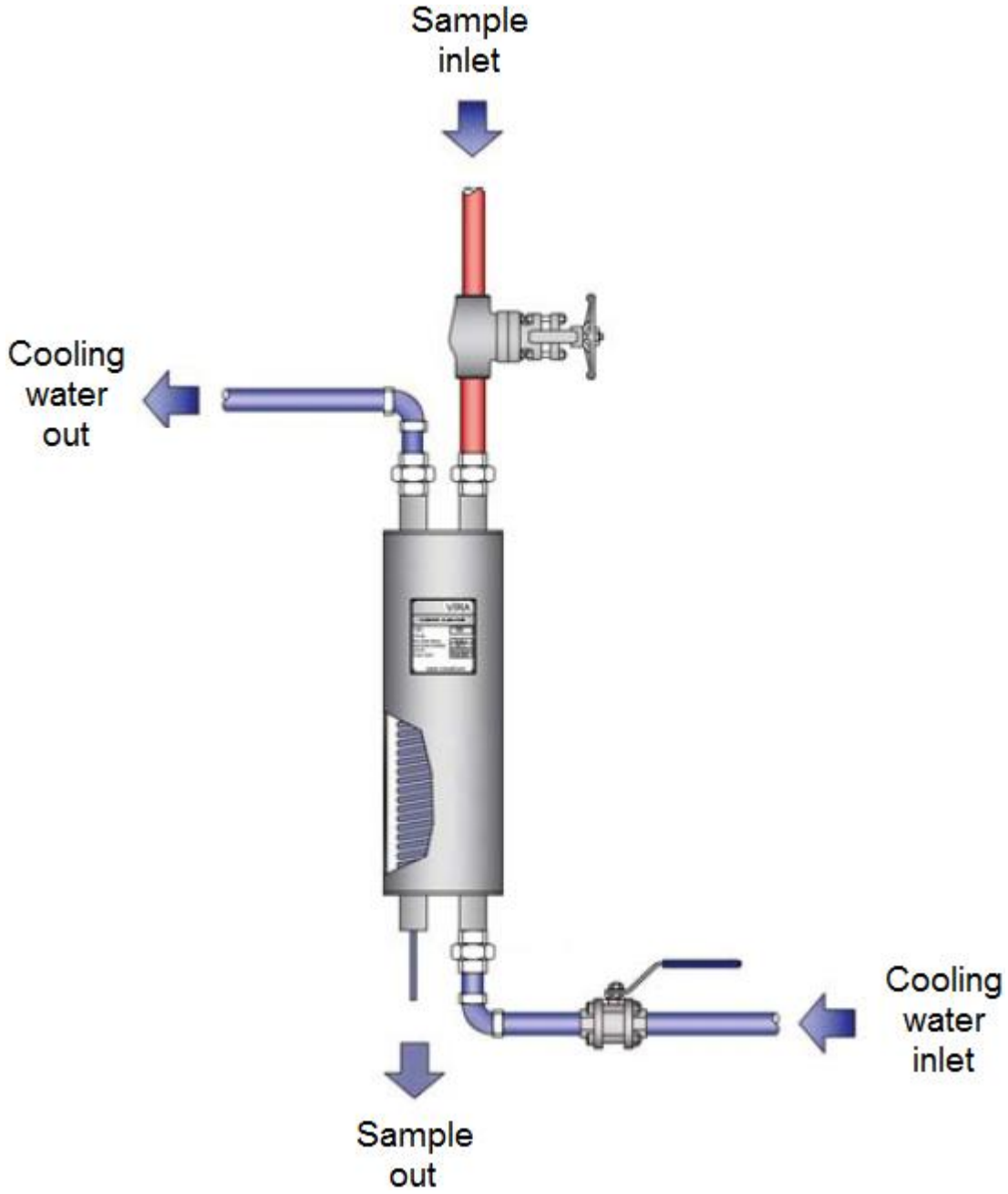

Figure 3: Installation of NK Sample Cooler

5. TAKING SAMPLE

Warning!

To avoid the risk of scalding, it is essential that a full flow of cooling water is present before opening the sample inlet valve.

Always close the sample inlet valve before turning off the cooling water.

Sample pipework becomes very hot under normal working conditions, and will cause burns if touched.

Follow this procedure for safe operation and accurate sampling;

- Boiler pressure and temperature must be at its nominal values.
- Open the cooling water inlet valve first and ensure that a full flow can be seen at the cooling water outlet.
- Gradually open the sample inlet valve and regulate the flow to achieve a cooled sample at about 25 °C (77 °F).
- Allow the sample to run for a while before collection. This will ensure that a true sample is collected for analysis.
- When enough liquid has been collected close the sample inlet first, and then the cooling water inlet valve.

6. MAINTENANCE

Warning!

No routine maintenance is required

When any fault situation occurs or maintenance is necessary, please contact with "**Vira Isı Service Department**".

Vira Isı ve Endüstriyel Ürünler A.Ş.

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