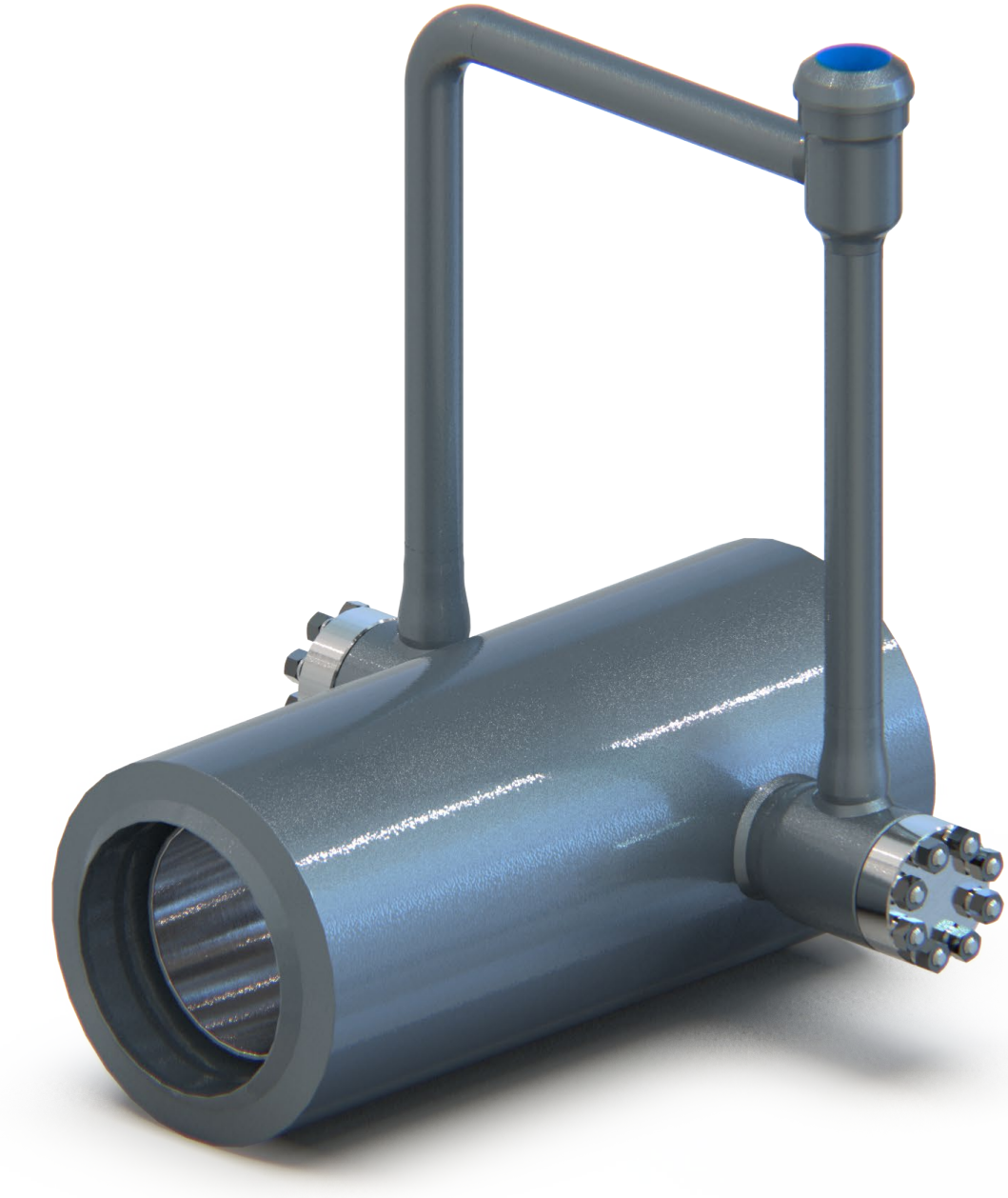
BVT
SWEDEN
VALVE SOLUTIONS

BVT-DLH

Steam attemperator with floating liner



B-006

BVT-DLH

Steam attemperator
with floating liner

About us

BVT Sweden was started with the ambition of becoming world leading in critical applications in process steam and thermal power plant turbine bypass. Based in Säffle, BVT Sweden employs experts with over 30 years experience in turbine bypass, steam conditioning, temperature control, design and manufacturing processes. We design turbine bypass valves, select actuation to fit our customer's requirements. Our products are optimized on a per-order basis, and we have the experience necessary to design special solutions. These products cover steam conditioning valves, pressure reduction valves, stop valves, desuperheaters and spray water control valves.

BVT-DLH Steam Attemperator

Attemperation is the process of controlling the amount of superheat in a boiler or a Heat Recovery Steam Generator (HRSG). Spray water is injected into the superheated steam, reducing its temperature. Spray water flow is controlled by an external water control valve and injected perpendicular to the steam flow using a series of spring-loaded spray water atomizing nozzles. The steam pipe is protected from thermal stresses by a floating liner which also acts as a flow profiler, increasing the relative steam velocity near the nozzles and improving evaporation.

The floating liner is installed without any welding, allowing it to move with the expansion of the material, making it more resistant to cycling.

BVT	-	DLH	-	250

Desuperheater Liner
High-Temp

Steam pipe dimension (DN)
200 - 700

BVT-DLH PRODUCT CODE

Key features

- ✓ Very high reliability due to being able to handle thermal cycling
- ✓ Unwelded flow profiling liner
- ✓ Designed to handle large spray water flow
- ✓ Nozzles resistant to flashing
- ✓ Even distribution of spray water in the steam pipe
- ✓ Negligable pressure drop in the steam line

Specifications

Nozzle material
Inconel 718

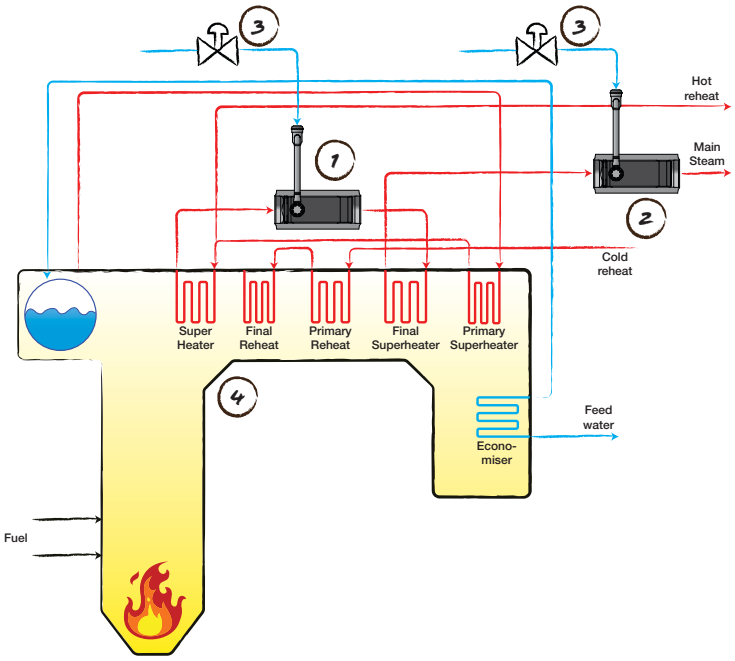
Rangeability
Determined by spray water valve

Design pressure
Steam - 200 bar(g)
Water - 320 bar(g)

Design temperature
Steam - 630 °C
Water - 250 °C

Cycling
Up to 6300 cycles / 25 years

Installation
Horizontal installation or vertical with steam flowing upwards is recommended.



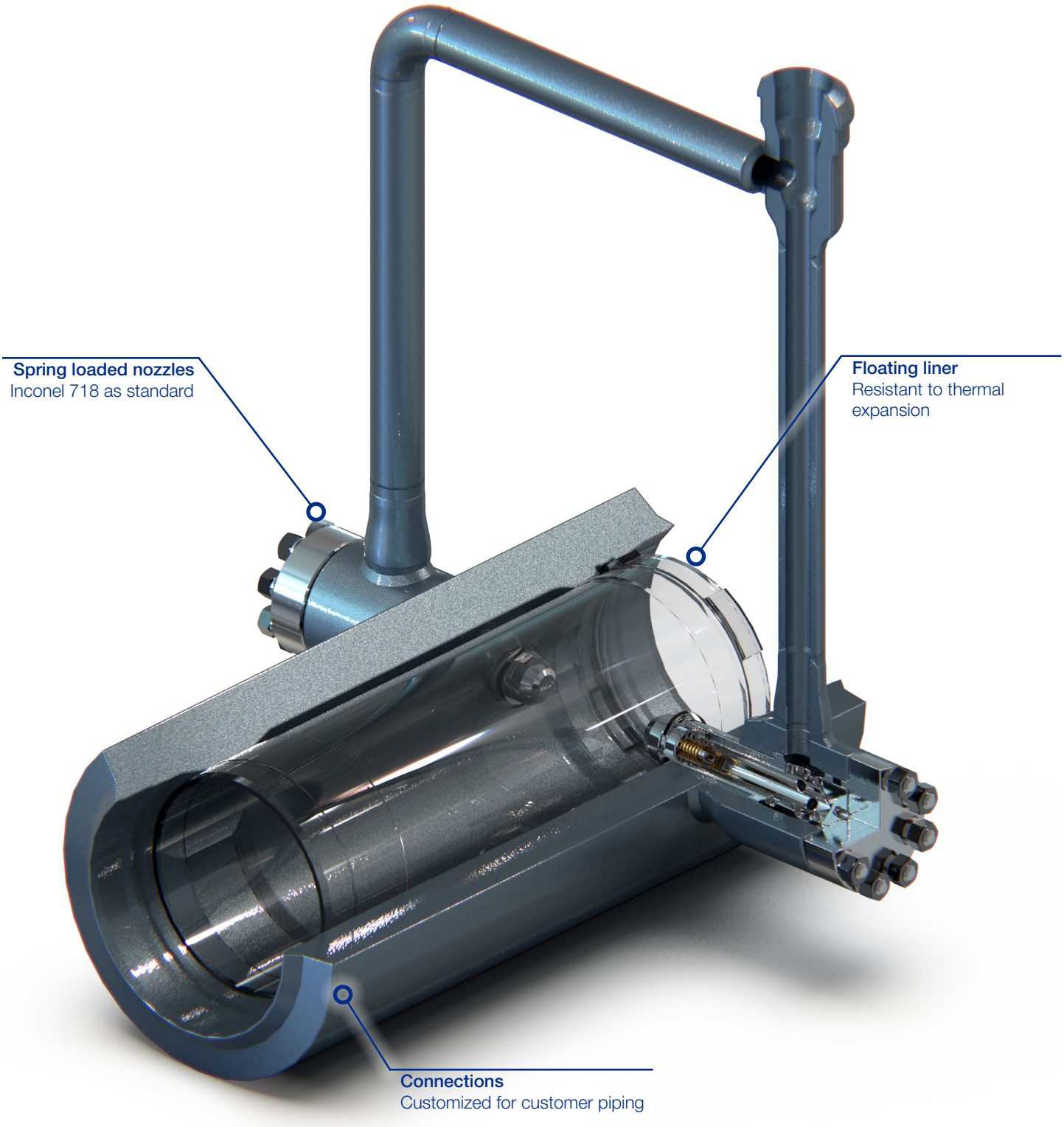
1. INTER-STAGE ATTEMPERATOR
2. FINAL STAGE ATTEMPERATOR
3. SPRAY WATER CONTROL VALVE
4. BOILER

BVT-DLH

Steam attemperator
with floating liner

BVT SWEDEN
VALVE SOLUTIONS

Overview



BVT-DLH ATTEMPERATOR

BVT-DLH

Steam attemperator
with floating liner

Water valves

BVT provides a multitude of spray water control valves, selected and designed to match operating conditions and customer requirements. The trims are chosen to prevent cavitation and flashing and prevent aerated liquids from corroding or eroding valve parts. They are equipped with quick exchange trims for more convenient inspection replacement. Among the options of trim designs are contour plugs, multi-step plugs, multi-cage and labyrinth disc stacks.

Trim types

PT (Plug throttling)
Cv Range: 1.4 ~ 9930
Rangeability: 25 to 1
Leakage class: IV / V

HSC (Micro High Step Cascade)
Cv Range: 0.24 ~ 406
Rangeability: 100 to 1
Leakage class: V

HEST (Single seat, drilled cage)
Cv Range: 38 ~ 8900
Rangeability: Varies
Leakage class: IV / V

LEFT: ANGLE-STYLE VALVE BODY
RIGHT: GLOBE STYLE VALVE BODY

Certificates

Zertifikat Nr. 0525-PED-DE-50329/1-Mod-H-1
Issue: 1

ZERTIFIKAT

In Übereinstimmung mit den Anforderungen der Druckgeräterichtlinie 2014/68/EU
Certificate in accordance with the requirements of the Pressure Equipment Directive 2014/68/EU

Hiermit wird bescheinigt, dass das Qualitätsmanagement des Unternehmens
This is to certify that the Quality Assurance System of

Name des Herstellers/Antragstellers: *Name of Manufacturer/Applicant:* **BVT Sweden AB**

Anschrift: *Address:* **Körkarlsvägen 8, SE-653 46 Karlstad**

entsprechend den Forderungen des Anhangs III, Modul H der Druckgeräterichtlinie 2014/68/EU durch die LRQA Deutschland GmbH geprüft und bewertet wurde und in Übereinstimmung mit den Anforderungen für die folgenden Produkte ist:
has been assessed by LRQA Deutschland GmbH against the requirements of Annex III, Module H of the Pressure Equipment Directive 2014/68/EC and conforms to the requirements for the products shown below:

Art des Druckgerätes/der Baugruppe: *Type of Pressure Equipment/Assembly:* **Druckbehälter, druckhaltende Ausrüstungsteile**
Pressure vessels, pressure accessories.

Produktbeschreibung: *Product description:* **Ventile, Dampfkühler und Lanzen-Einspritzkühler für den Bereich Engerieerzeugung und Verfahrenstechnik**
Valves, steam attemperators and probe-style desuperheaters for power and process applications.

Typ: *Type:* **BVT-TB, BVT-PB, BVT-DLH, BVT-SV, BVT-HB, BVT-DL, BVT-DP.**

Einzelheiten siehe Anhang I.
for details see Annex I.

Die Zulassung gilt unter der Voraussetzung, dass das Qualitätssystem fortlaufend aufrechterhalten wird und die Forderungen obiger Richtlinie erfüllt.
Approval is subject to the continued maintenance of the quality system in accordance with the requirements of the above-mentioned Directive.

Weiterhin wird die Genehmigung erteilt, folgende Kennnummer von LRQA Deutschland GmbH als notifizierte Stelle in Übereinstimmung mit der obigen Richtlinie und den Vorschriften in Bezug auf die Produkte zu verwenden:
Authorisation is hereby given to use the under noted LRQA Deutschland GmbH Notified Body Identification Number in accordance with the requirements of the specified Directive in relation to the products as identified above.

CE 0525

Erstmalige Zulassung: *Initial Approval:* **01.11.2019**

Zertifikatsgültigkeit bis: *Certificate expiry date:* **31.10.2025**

LRQA Deutschland GmbH Kenn-Nr. 0525
LRQA Deutschland GmbH Ident-No. 0525

Hamburg, 27.10.2023
Ort und Datum *Place and Date*

K. Wolf
Name und Unterschrift *Name and Signature*

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PED CERTIFICATE

Current issue date: 1 February 2022
Expiry date: 31 January 2025
Certificate identity number: 10421710

Original approval(s):
ISO 14001 - 1 February 2019
ISO 9001 - 1 February 2019

Certificate of Approval

This is to certify that the Management System of:

BVT Sweden AB

Körkarlsvägen 8, 653 46 Karlstad, Sweden

has been approved by LRQA to the following standards:

ISO 14001:2015, ISO 9001:2015

Approval number(s): ISO 14001 – 00002108, ISO 9001 – 00002109

The scope of this approval is applicable to:

Sales, development, engineering, service and upgrades of valves and accessories for power and process applications.

Paul Graaf

Area Operations Manager, Europe

Issued by: LRQA Sverige AB

for and on behalf of: LRQA Limited

UKAS MANAGEMENT SYSTEMS 0001

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Issued by: LRQA Sverige AB, Göteborgsvägen 74, 43363 Sävedalen, Sweden for and on behalf of: LRQA Limited, 1 Trinity Park, Bickenhill Lane, Birmingham B37 7ES, United Kingdom

ISO 14001 AND ISO 9001

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