

BVT-DLP

Ring-style desuperheater



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 Säfte, 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.

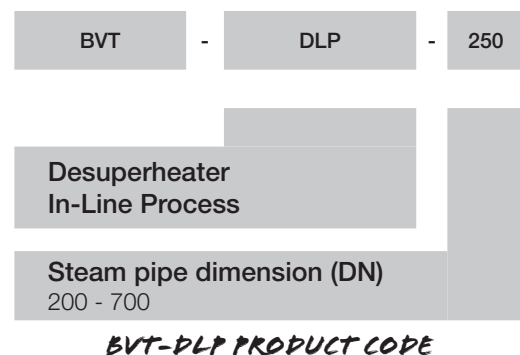
BVT-DLP process desuperheater

A steam desuperheater is used for reducing the temperature of superheated steam close to its saturation point, where thermal efficiency is highest. This is performed by injecting spray water into the steam flow. 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 welded liner which also acts as a flow profiler, increasing the relative steam velocity near the nozzles and improving evaporation.

The number of nozzles are chosen based on the steam pipe diameter, in order to improve the spread of injected water over its cross section, and the nozzle springs are chosen / preloaded to avoid flashing in the nozzle opening.

Key features

- ✓ Very high reliability due to being able to handle thermal cycling
- ✓ Flow profiling liner as standard
- ✓ Designed to handle large spray water flow
- ✓ Nozzles resistant to flashing
- ✓ Water atomization pressure is maintained at each nozzle at any flow condition
- ✓ Even distribution of spray water in the steam pipe
- ✓ Negligible pressure drop in the steam line



Specifications

Rangeability
Determined by spray water valve

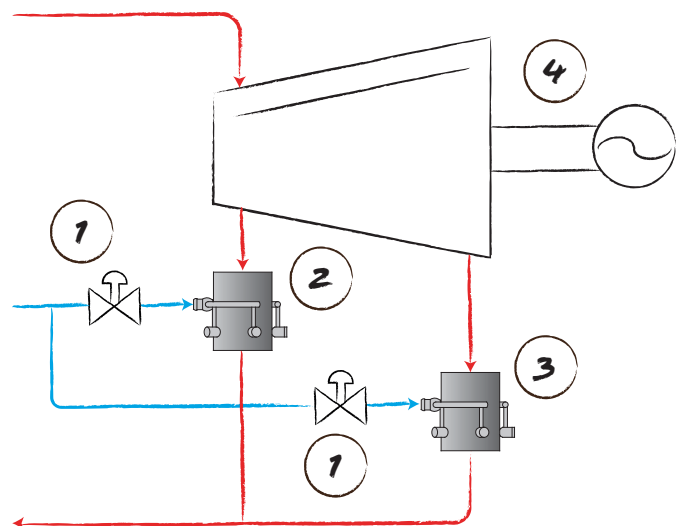
Pressure class
**EN PN 16-320
ASME 150-2500**

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

Materials

Nozzle body / plug	X19CrMoVNb11.1, AISI 616
Spring	Heat resistant spring steel
Steam pipe / liner	Adapted to connecting pipe materials
Water pipes	X10CrMoVNb91, A-182 F91 13CrMo44, A335-P11 or St35.8, A105 or 10CrMo9-10, A-335 P22

Nozzles and springs are also available in Inconel for high temperature applications or conditions without water injection.



BVT-DLP IN BYPASS TO PROCESS APPLICATION

1. SPRAY WATER CONTROL VALVE
2. BVT-DLP EXTRACTION DESUPERHEATER
3. BVT-DLP EXHAUST DESUPERHEATER
4. STEAM TURBINE

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Overview

Liner
Protects pipe and
improves evaporation

NS nozzles
Quick change nozzles
Designed to avoid thermal
cracks in outlet pipe



BVT-DLP DESUPERHEATER

BVT-DLP

Ring-style desuperheater



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

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




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

 **Lloyd's Register**

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



P.G. Cornelissen - Area Manager North Europe
Issued by: LRQA Sverige AB
for and on behalf of: Lloyd's Register Quality Assurance Limited

Current issue date: -
Expiry date: -
Certificate identity number: 10169985

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

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.


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Certificate No. / Zertifikat Nr.: 50329/1

CERTIFICATE

in accordance with the requirements of the Pressure Equipment Directive 2014/68/EU

ZERTIFIKAT
in Übereinstimmung mit den Anforderungen der Druckgeräterichtlinie 2014/68/EU

This is to certify that the quality assurance system of
Hiermit wird bescheinigt, dass das Qualitätssicherungssystem des Unternehmens

BVT Sweden AB
SE-653 46 Karlstad
Sweden / Schweden

has been assessed by LR Deutschland GmbH in accordance with the requirements of Annex III
durch die LR Deutschland GmbH entsprechend den Forderungen des Anhangs III

Module H

to the Pressure Equipment Directive 2014/68/EU and
conforms to the requirements for the products shown below:
der Druckgeräterichtlinie 2014/68/EU geprüft und bewertet wurde und für die folgenden Produkte die Anforderungen erfüllt:

**Valves and accessories for power and process applications,
for details see Annex 1 to this certificate.**
Ventile und Ausrüstungsteile für Anwendungen in der Wärme- und Verfahrenstechnik,
Einzelheiten siehe Anhang 1 dieses Zertifikates.

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

Authorisation is hereby given to use the below-mentioned Notified Body Identification Number
of LR Deutschland GmbH in accordance with the requirements of the specified directive
in relation to the products as named above:
Hiermit wird die Genehmigung erteilt, folgende Kennnummer der LR Deutschland GmbH als Notifizierte Stelle
in Übereinstimmung mit der angegebenen Richtlinie in Bezug auf die oben genannten Produkte zu verwenden:

CE 0525

Certificate expiry date / Zertifikatsgültigkeit bis: **31.01.2022**

Hamburg, 01.11.2019
Place and Date
Ort und Datum


K. Wolf
Name, Signature, Certifier
Name, Unterschrift, Zertifizierer

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ZE-1110 en Rev. 3, (08/19)

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