

A-T

ARMATUREN-TECHNIK GMBH | Oberhausen | Germany
Isolating, Control Valves and Turbine Bypass Systems
for the Electric Power Industry,
Steam Plant Utilities and Process Industry



TURBINE BYPASS TYPE DZE

Steam Conditioning
Valve for
Electric Power Plants
and
Steam Plant Utilities

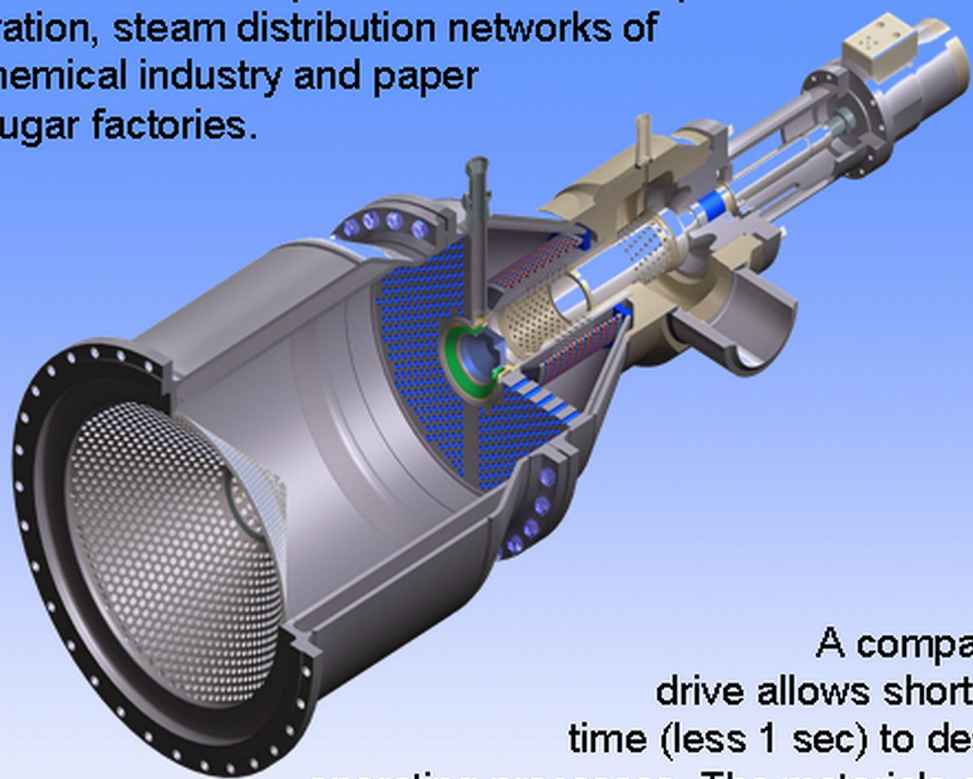


Application

The DZE series presented here is used for highest pressures and temperatures. DZE-Turbine Bypass Valves are used in all industries where high pressure steam has to be converted to a lower pressure and at the same time to be cooled down. By the design of one or more levels a built-in choke and a patented integrated spray water injection is reducing the vapor pressure and the temperature according to the specified operating parameters.

Both tasks are performed without installing a cooler at the outlet of the DZE. The patented ring shaped spraywater injection is placed in the low pressure area.

Its use is therefore of particular interest for power generation, steam distribution networks of the chemical industry and paper and sugar factories.



A compact hydraulic drive allows shortest reaction time (less 1 sec) to design flexible operating processes. The materials are chosen according to the specific requirements to guarantee an operating of modern baseload power plants as well as the extreme characteristics of peak-load electrical power plants.



Given feedback information constantly improves the design of high pressure valves and ensures an extreme steady operation. Stress tests are simulated by computational fluid dynamics and data analysis which influences the design directly.



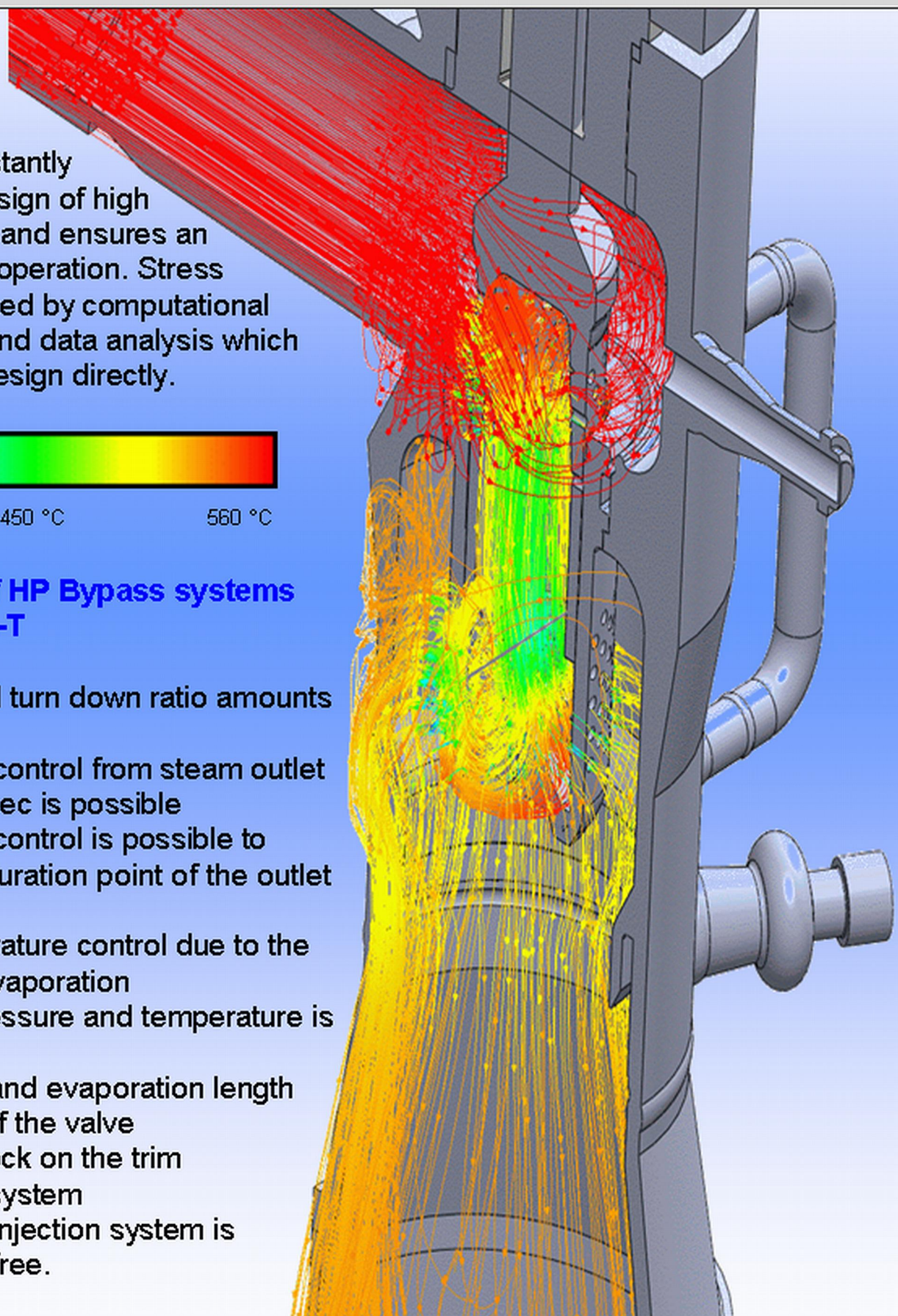
350 °C

450 °C

560 °C

Advantages of HP Bypass systems designed by A-T

- Steam Control turn down ratio amounts to 1:100
- Temperature control from steam outlet
- Velocity 1 m/sec is possible
- Temperature control is possible to nearly the saturation point of the outlet steam.
- Stable temperature control due to the high speed evaporation
- Low water pressure and temperature is acceptable
- Short mixing and evaporation length downstream of the valve
- No thermoshock on the trim and injection system
- Silencer and Injection system is maintenance free.





Product Overview

- Combined Safety and Overflow Valve acc. to TRD421
- HP/LP Turbine Bypass Systems
- Steam Conditioning Valves
- Heater Bypass Systems
- HP Swing Check Valves
- HP Gate Valves
- Check Valves
- Valve Maintenance and Repair
- Overhaul of complete systems

Applications in

- Thermal and Nuclear Power Plants
- Combined Cycle Power Plants
- Heating Power Plants
- Incineration Plants
- Steam Utilities for Chemical Industries
- Hydrocracker for Refineries
- Paper and Pulp Industries

Manufacturing Certificates

- Certificate as per DIN ISO 9001/EN29001 Quality Management for Power Plant Applications and Environmental Technical Plants and Components by TÜV-CERT
- Certificate of manufacturing Qualification for Power Plant Applications as per AD 2000
- Certificate as per TRD421 German Steam Boiler Regulation by TUEV
- Confirmation of SIEMENS-KWU based on KTA 1401, QSP 4a, AVS D 100/50 and stated by TUEV in acc. with KTA 3201.3.3
- Certificate of Welding Requirements
- Certificate of additional Quality Requirements as per DIN EN 792-2
- Certificate of Test and Approval for Welders as per DIN 8560 and DIN EN 287

A-T ARMATUREN TECHNIK GMBH

is represented as a manufacturer of high pressure valves for conventional and nuclear power plants at the joint of the Federal Republic of Germany in Shanghai. From the beginning of the year 1995, A-T is worldwide the one of the most important supplier of HP bypass units and super heated steam gate valves for power plants applications. Actual projects can be considered at area A 008 at the industrial automation show in Shanghai. Chinese power plant operators appreciate the more than 20 years old experience of A-T engineers who guarantee a reliable operation of minimum 99,2 %. A-T valves are manufactured regarding the strict regulations of the German Industrial Safety Authority (TUEV) which ensure an operation time of minimum 25 years. During the operation time of at least 15 years A-T maintains a closed contact to customers according to the after sales services. The given feedback information constantly improves the design of high pressure valves and ensures an extreme steady operation. Stress tests are simulated by computational fluid dynamics and data analysis which influences the construction directly. A model can be seen at the joint in Shanghai which helps to understand the patented ring injection system. Independent of the pressure and temperature of the spray water the patented injection is guarantees a perfect cooling for every flow rate, down to a ratio of 1 : 100.