

# TEC ARTEC MULTI NOZZLE DESUPERHEATER, HIGH PRESSURE

235/1-001

EN Standard, Model TECtemp HD

The TECtemp HD desuperheater combines water control, atomization and a tight shut-off in one valve. The largest possible number of nozzles and the unique design of the internal parts allow precise control of almost all application scenarios. The TECtemp HD offers maximum safety together with a long service life due to the one-piece and forged body design. Typical installations: Final and interstage desuperheaters on steam boilers, process steam generation, turbine bypass, cooling and condensing process of chemicals (e.g. ammonia, propylene), and LNG.

## Product description:

Injection lance with integrated water control, spray, and shut-off function. Valve opening by quarter turn (90°) of the stem. Pure metal-to-metal ball/seat design with lasting low leakage risk, long service life and low life cycle costs. Optimum water injection with finest spray due to constant pressure difference at the injection nozzles over the entire control range. Turn down ratio up to 250:1. Sequential nozzle opening for optimum evaporation conditions and avoidance of thermal shocks.

## Design standards:

- EN 12516-2, EN 12952, PED 2014/68/EU Cat. II Module D1 (others on request)
- Flange drilling according to EN 1092-1 / EN 1759-1

## Test/Approvals:

- Tested according to EN 12266
- PED 2014/68/EU Cat. II module D1 (others on request)
- CE approved

## Features:

- Up to 24 sequential opening nozzles
- One-piece forged body design
- For steam pipes  $\geq$  DN80, up to PN400 / Class 2500
- Steam temperature up to 610 °C
- Lance length up to 750 mm (longer lengths on request)
- Selectable cooling water connection position (90° steps)
- Single or multi-stage pressure reduction

The TECtemp HD is also available in ASME standard design and configuration (See series 235/2).

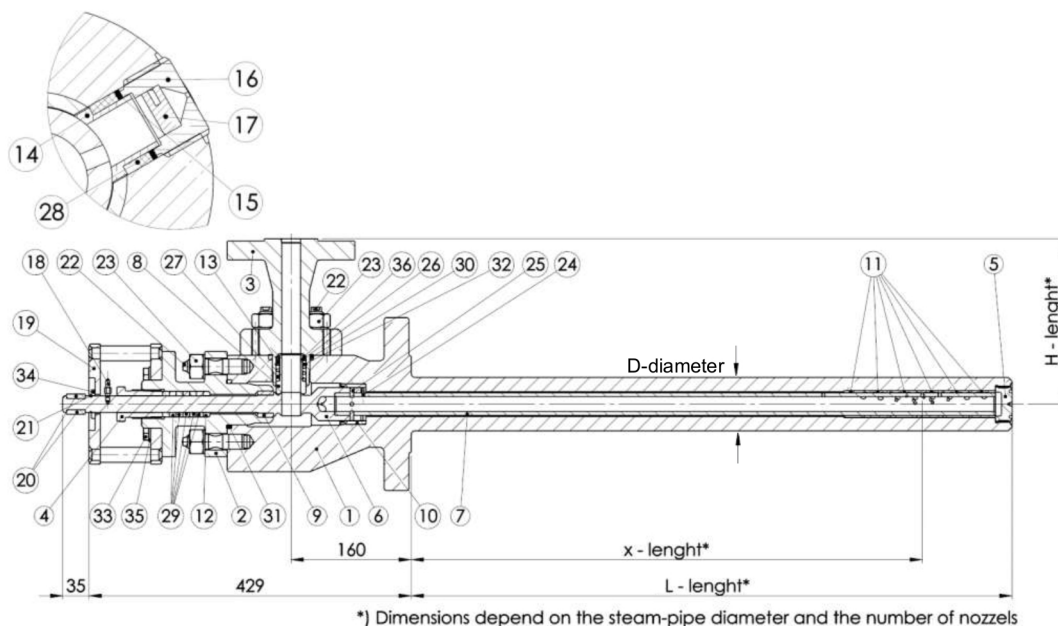
The specified data must be considered as guidance only since the desuperheater is a highly configurable product due to its wide range of applications; a specific datasheet with full description of flow characteristics, materials and product configurations will be issued by TEC artec for each individual TECtemp HD desuperheater when operating conditions are known.

## Accessories:

- Electric actuator with control unit
- (Electro-)hydraulic actuator
- Pneumatic actuator with positioner, declutchable manual gearbox, limit switches, air set, etc.
- Counter flanges including bolts, nuts & gaskets
- Strainers, shut-off & check valves, steam traps
- Mixing pipe with thermal shock pipe and connection for pressure & thermal sensors etc.



The designs, materials and specifications shown are subject to change without notice due to the continuous development of our product range.



**Component list:**

1. Body <sup>(1)</sup>	16. Nozzle <sup>(1)</sup>	1.4122 hardened
2. Bonnet <sup>(1)</sup>	17. Swirl	1.4541
3. Flange, cooling water <sup>(1)</sup>	18. Position indicator	A2-70
4. Packing gland 1.4541	19. Actuator flange	Steel
5. Screw plug <sup>(1)</sup> 1.5415/1.7380/1.4903 or others	20. Key	Steel
6. Stem, upper <sup>(1)</sup> 1.4122/1.4923 hardened	21. Snap ring	Spring steel
7. Lower stem <sup>(1)</sup> 1.4301/1.4923 hardened	22. Stud bolt <sup>(1)</sup>	1.7709/1.4980
8. Seat ring <sup>(1)</sup> 1.4122/1.4923 hardened	23. Hex nut <sup>(1)</sup>	1.7218/1.4980
9. Bearing ring 1.4541	27. Spring	1.4310
10. Bushing 1.4541	28. Gasket	Graphite
12. Ring 1.4541	29. Packing rings	Graphite
14. Bushing 1.4122	30. Flange gasket	Graphite
15. Disc 1.4122	31. Bonnet gasket	Graphite

Components may be substituted with equivalent or higher class materials without prior notification.  
 (1) material according to design specification

**Comments:****Options according to design specifications:**

1. Material for Body (1) | Bonnet (2) | Cooling water flange (3): 1.0566, 1.0355, 1.0460, 1.4404, 1.4571, 1.4541, 1.5415, 1.7335, 1.7380, 1.4903 and 1.4901.
2. Nozzles (16): 1.4923 hardened or Stellite® 6b | No. of Nozzles: 6, 9, 12, 15, 18, 21, 24, depending on steam pipe/thermal shock pipe size
3. Control curve: Linear, Equal percentage or Modified
4. KVS-Value: up to 17.1 m<sup>3</sup>/h
5. Lance diameter "D": 64, 71, 76 or 94mm
6. Cooling Water Flange Connection (3):
  - DIN EN 1092-1: Nominal Pipe Size DN25 ... 65 / Pressure class PN25-400 / Fig. B1 or B2 or others
  - DIN EN 1759-1: Nominal Pipe Size IN 1" ... 2-1/2" / Pressure class CL150-2500 / Fig. B or J or others
7. Steam Flange Connection:
  - DIN EN 1092-1: Nominal Pipe Size DN80 / 100 / Pressure class PN25-400 / Fig. B1 or B2 or others
  - DIN EN 1759-1: Nominal Pipe Size IN 3" / 4" / Pressure class CL150-2500 / Fig. B or J or others
8. Leakage rates: acc. to DIN EN1349, ANSI FCI 70-2: Class IV or V - acc. to DIN EN 12266: Class C or B
9. Actuator connection: F10, F12 or F14
10. Coating: High temperature silver bronze (Standard) or special coatings on request (up to C5-M)

**Other products:**

- S.235/2-001 TECtemp HD: Desuperheater - ASME Standard
- S.234 TECtemp: Desuperheater for less demanding applications than S.235
- S.236 TECtemp HT-L: Desuperheater - lance type
- S.237 TECtemp HT-R: Desuperheater - ring type
- S.238 TECtemp HT-V: Desuperheater - venturi type
- S.239 TECtemp FN: Desuperheater fixed nozzle version
- S.242 TECsteam: Motive steam desuperheater
- S.244 TECmix: Mixing pipe with thermal shock sleeve pipe for steam attemperation