TEC ARTEC MULTI NOZZLE DESUPERHEATER, HIGH PRESSURE

235/2-001

ASME 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:
Probe type desuperheater valve with integrated water control, spray function and tight shut-off. Valve opening by quarter turn (90°) movement of the inner stem. Metal-to-metal ball/seat design with lowest risk of leakages, longest lifetime, low lifecycle costs. Perfect water spray with smallest water droplets by constant pressure difference at injection nozzles over the entire control range. Turn-down ratio up to 250:1. Optimized nozzle opening sequence for thermal shock prevention and optimal evaporation conditions.

Design standards:
- EN 12516-2, ASME B16.34, EN 12952
- Flange drilling to ANSI B16.5 or JIS B2220

Test/Approvals:
- ASME B16.34; API 598; MSS SP-55 or others

Features:
- Up to 24 sequential opening nozzles
- One-piece forged body design
- Steam pipes from ≥ 3 Inch up to 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 EN standard design and configuration (See series 235/1). 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.

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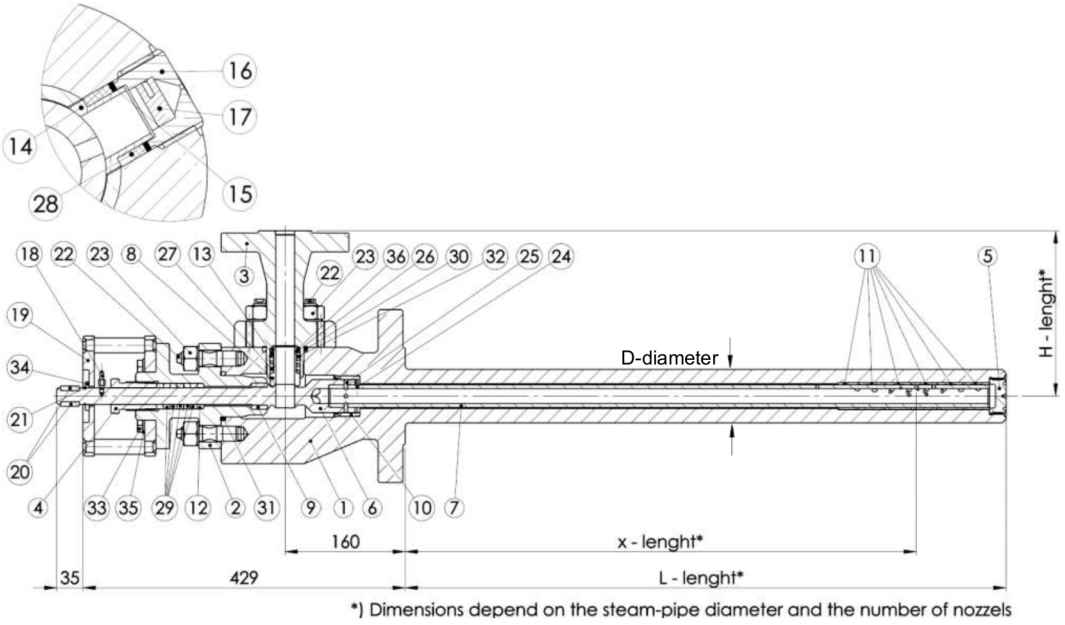

*) Dimensions depend on the steam-pipe diameter and the number of nozzels

Component list:

1.	Body (1)		16.	Nozzle (1)	1.4122 hardened
2.	Packing (1)		17.	Swirl	1.4541
3.	Flange, cooling water (1)		18.	Position indicator	Stainless steel A2-70
4.	Packing gland	1.4541	19.	Bridge assembly	Steel
5.	Plug (1)	1.5415/1.7380/1.4903 or others	20.	Key	Steel
6.	Stem, upper (1)	1.4122/1.4923 hardened	21.	Snap ring	Spring steel
7.	Lower stem (1)	1.4301/1.4923 hardened	22.	Stud bolt (1)	1.7709/1.4980
8.	Seat ring (1)	1.4122/1.4923 hardened	23.	Hex nut (1)	1.7218/1.4980
9.	Bearing bush	1.4541	27.	Spring	1.4310
10.	Bearing bush	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) materials according to design specification

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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, 1.7335, 1.7380, 1.4903, 1.4901 and equivalent ASME materials.
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 m³/h
5. Lance diameter “D”: 64, 71, 76 or 94mm
6. Cooling Water Flange Connection (3):
- ASME B16.5: Nominal Pipe Size IN 1” … 2-1/2” / Pressure class CL150-2500 / Fig. RF or RTJ

7. Steam Flange Connection:
- ASME B16.5: Nominal Pipe Size IN 3” / 4” / Pressure class CL150-2500 / Fig. RF or RTJ

8. Leakage rates: acc. to ANSI FCI 70-2: Class IV or V
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.235/1-001 TECtemp HD: Desuperheater - EN 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