AVK MULTI NOZZLE DESUPERHEATER, MODEL TECTEMP 234/2-001

Quarter turn, mechanical water atomization and integrated water control, HT steel

The series 234 desuperheater allows for extremely precise regulation of water injection for cooling of superheated steam. Water control and injection parts are combined to one unit and the water shut-off is secured by the nozzles. The opening is controlled by a quarter turn rotation allowing for a rack & pinion actuator to be applied with the subsequent advantages in price and accuracy.
The design incorporates up to 15 individually opened nozzles with individually sized bores. This ensures an optimal atomization of the spray water for every load case. Due to the high quantity of nozzles most load cases can be handled in a very precise manner. Even steam velocities down to 1.5 m/s are controllable thanks to the installation of nozzles with very small bores. A micro fine spray of 20 µm droplets, even for Kv-values as low as 0.01 m³/h, in combination with bigger drilled nozzles allow for widely controllable turn down ratios.

Product description:
Multi nozzle desuperheater applicable for steam pipes from DN150, max. temperature 500°C, control ratio up to 250:1. High temperature steel, see pressure/temperature diagram on page 4.

Standards:
- Designed acc. to EN 12516; EN12952; ASME 16.34
- Flange drilling acc. to EN 1092-2; ASME B16.5

Test/Approvals:
- Hydraulic test acc. to EN 112266; ASME B16.34
- Approved acc. to CE type examination

Features:
- All exposed components are made of high temperature resistant 1.7380 steel
- Applicable for a maximum pressure difference of 30 bar
- Available lance diameters: 64, 71 or 76 mm
- Lance length up to 750 mm
- Controllable Kv-value down to 0.01 m³/h
- Hardened stem and nozzles
- Steam flanges:
  - DN 80 from PN 25 to 400 / 3" from class 150 to 2500
  - DN 100 from PN 25 to 250 / 4" from class 150 to 1500
- Cooling water flanges
  - DN 25 to 40 from PN 25 to 400 / 1" to 1½" class 150 to 2500
  - DN 50 from PN 25 to 250 / 2" class 150 to 1500

Certificates, code in AVK-ref. no.:
E = 1: Inspection APZ3.1 / Material APZ3.1
E = 2: Inspection APZ3.1 / Material APZ3.1/APZ3.2
E = 3: Inspection APZ3.2 / Material APZ3.1/APZ3.2

Accessories:
Actuator (electrical, pneumatic, hydraulic), strainer, steam/water mixing pipe with thermo shock pipe and studs for sensors (e.g. temperature or pressure)

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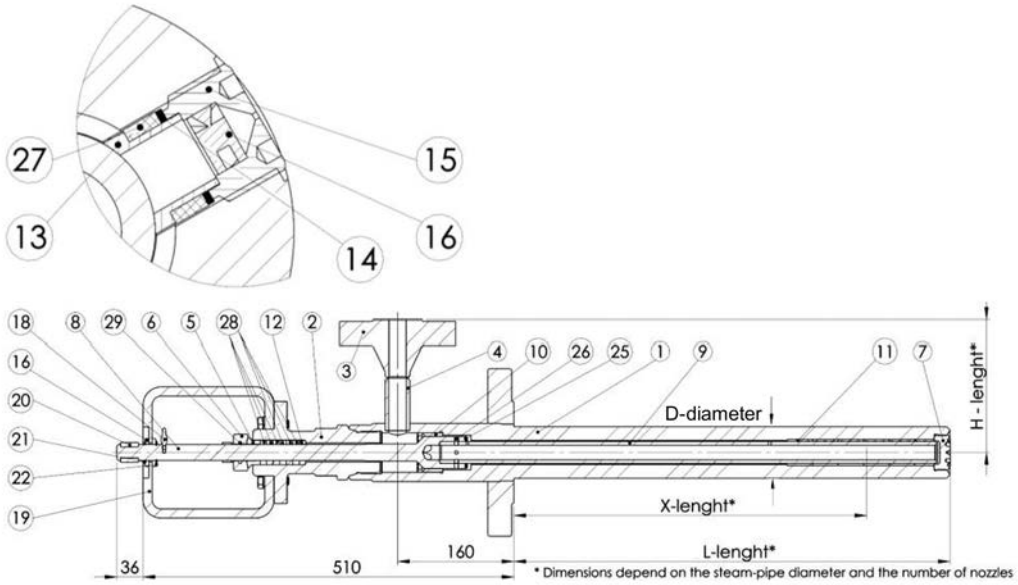

Component list:

1.	Body	Steel 1.7380	14.	Compensation ring	Steel 1.4122
2.	Packing	Steel 1.7380	15.	Nozzle	Steel 1.4122 nitrided
3.	Flange, water	Steel 1.7380	16.	Swirl	Steel 1.4541
4.	Pipe	Steel 1.7380	18.	Position indicator	Steel 1.4571
5.	Thrust collar	Steel 1.4541	19.	Bracket	Steel
6.	Gland	Steel 1.7380	20.	Key	Steel
7.	Plug	Steel 1.7380	21.	Lock ring	Steel C75 (1.0605)
8.	Upper stem	Steel 1.4122	22.	Washer	Steel C75 (1.0605)
9.	Lower stem	Steel 1.4122	25.	Pin	Steel 1.4541
10.	Bushing	Steel 1.4541 nitrided	26.	Pin	Steel 1.4541
11.	Bushing	GGL-NiCr 30 3	27.	Seal	Graphite
12.	Ring	Steel 1.4122	28.	Seal	Graphite
13.	Bushing	Steel 1.4122 nitrided	29.	Cord	Graphite

Components may be substituted with equivalent or higher class materials without prior notification.

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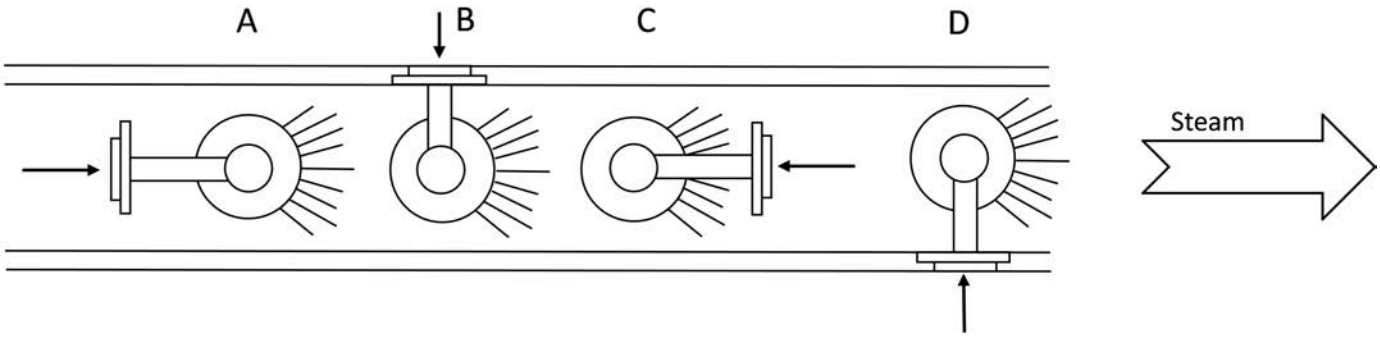
Reference nos. and dimensions:

AVK ref. no.	No. of nozzles	D mm	L mm	Theoretical weight / kg
234-2-111E	6	64	<750	60
234-2-113E	6	71	<750	60
234-2-115E	6	76	<750	60
234-2-211E	9	64	<750	60
234-2-213E	9	71	<750	60
234-2-215E	9	76	<750	60
234-2-311E	12	64	<750	60
234-2-313E	12	71	<750	60
234-2-315E	12	76	<750	60
234-2-411E	15	64	<750	60
234-2-413E	15	71	<750	60
234-2-415E	15	76	<750	60

Position Cooling Water Connection



Max. controllable Kv-value

6 nozzles	4.9 m³/h	min. DN150 steam line
9 nozzles	7.4 m³/h	min. DN200 steam line
12 nozzles	9.8 m³/h	min. DN250 steam line
15 nozzles	12.3 m³/h	min. DN300 steam line