

### APPLICATION

- To decrease pressure of sample of the liquid designed for measurement of conductivity and other parameters  
The reduction chamber is not a rated product pursuant to the Act No. 22/1997 Coll.

### DESCRIPTION

The reduction chamber consists of the inlet and outlet parts that are connected with a cap-nut. The inlet part is marked with an arrow, which identifies the direction of flow of the sample. In the inlet part, the sample is deprived of mechanical impurities. In the outlet part, a column of diaphragms is inserted. During the flow of the sample through diaphragms, the sample pressure is reduced. The design solution of the chamber ensures that the number of diaphragms can be modified so as to achieve the required flow of the sample through the sensor and additional elements.

### TECHNICAL DATA

**Operation position:** vertical, the direction of flow of the sample is downwards

**Type of operation:** continuous  
**Weight:** approx. 0.9 kg

**Used materials:**  
Weld-on cones steel 1.4541  
Diaphragms steel 17 029  
Filter (mesh) steel 1.4301  
Other parts steel 1.4541

### OPERATION CONDITIONS

The armatures are designed for the environment defined by the group of parameters and their severity grades IE34 pursuant to the standard ČSN EN 60 721-3-3 and the following operation conditions.

**Ambient temperature:** +5 to 60 °C

**Relative ambient humidity:** 10 to 95 % with condensation, with upper level of water content 29 g H<sub>2</sub>O/kg of dry air

**Atmospheric pressure:** 70 to 106 kPa  
**Level of vibrations only in class:** 3M1

**Operation liquid:** Supply water, steam, boiler surface blowdown, reversing condensate, etc.

**Parameters of operation liquid:**  
Overpressure max. 21 MPa  
Temperature max. 575 °C

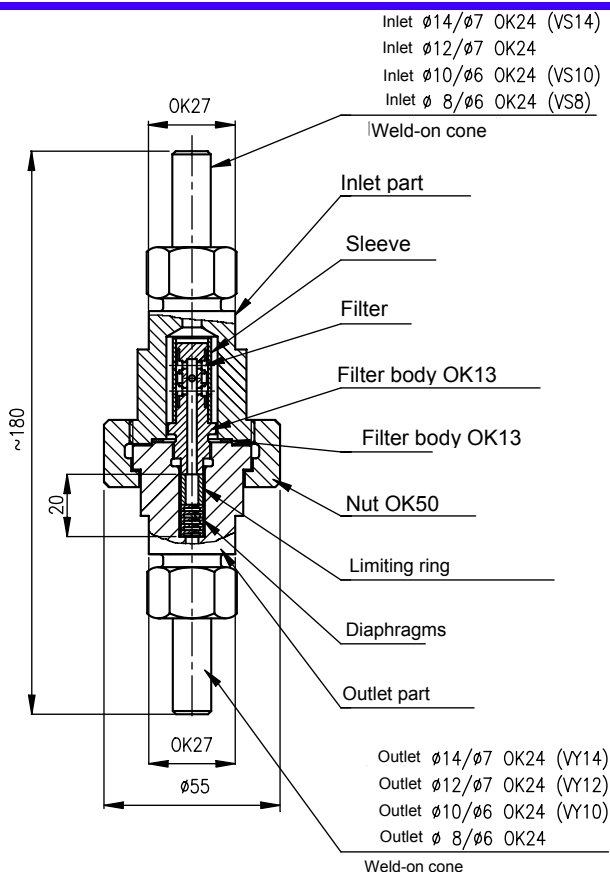
### DESIGNATION

- Data on product**
- Trade mark of the manufacturer
  - Made in Czech Republic
  - Arrow indicating direction of sample flow
  - Marks of performed pressure test
  - Product ordering number
  - Manufacturing number

### DESIGN OF REDUCTION CHAMBERS, TYPE 162 34

SPECIFICATIONS		ORDERING NUMBER				
		916	066	015	xxxx	xxxx
Weld-on inlet cone	Ø8/ Ø6				VS8	
	Ø10/ Ø6				VS10	
	Ø12/ Ø7 *)				VS12	
	Ø14/ Ø7				VS14	
Weld-on outlet cone	Ø8/ Ø6 *)					VY8
	Ø10/ Ø6					VY10
	Ø12/ Ø7					VY12
	Ø14/ Ø7					VY14

\*) Unless codes VS and VY are specified behind the ordering number, the reduction chamber is delivered in design VS12 VY8



### DELIVERY

Unless agreed otherwise with the customer, each delivery includes

- Delivery note
- Products pursuant to purchase order
- 2 limiting rings with 4 mm length and 1 ring with 10 mm length with each product.
- Accompanying technical documentation in Czech:
  - o Product quality and completeness certificate, which also serves as the warranty certificate
  - o Product manual

If it is established in the purchase contract or agreed otherwise, the following documentation can be also delivered with the product:

- Copy of inspection certificate 3.1 pursuant to ČSN EN 10204 for individual materials with casting number
- Declaration of Conformity with purchase order 2.1 pursuant to ČSN EN 10204
- Test report and overview of applied materials

**PLACING AN ORDER**

The purchase order shall specify:

- Name
- Product ordering number
- Other (special) requirements
- Number of pieces

**PURCHASE ORDER EXAMPLE****Standard design:**

1. Reduction chamber  
916 066 015 - 20 pcs
2. Reduction chamber  
916 066 015 VS14 VY14 - 20 pcs

**PACKING**

Both the products and accessories are delivered in a packing ensuring resistance to the impact of thermal effects and mechanical effects pursuant to controlled packing regulations.

**TRANSPORT**

The products may be transported on conditions corresponding to the set of combinations of classes IE 21 pursuant to ČSN EN 60721-3-2 (i.e. by airplanes and trucks, in premises that are ventilated and protected against atmospheric conditions).

**STORAGE**

The products may be stored on conditions corresponding to the set of combinations of classes IE 11 pursuant to ČSN EN 60721-3-1 (i.e. in places with continuous temperature control from 5 to 40 °C and humidity from 5 to 85%, without a special threat of an attack with biological agents, with vibrations of small significance and not situated close to sources of dust and sand).

**INSTALLATION AND CONNECTION**

During the installation, the following principles shall be followed:

- Interconnecting couplings between the reduction chamber and the cooler, the cooler and the conductivity sensor and drain from the conductivity sensor shall be short, pressure at the outlet of the reduction chamber at required flow may not exceed the value of permitted inlet pressure applicable for the cooler;
- No stop or throttle valve may be built in from the inlet of the reduction chamber up to the outlet of condensate from the conductivity sensor to collection trough.

**COMMISSIONING**

The reduction chamber is delivered with the full number of diaphragms. They are inserted in the operation position in the outlet part of the reduction chamber. During the commissioning, it is necessary to modify the number of diaphragms pursuant to inlet parameters of the sample so as to achieve its desired flow. Instead of removed diaphragms (thickness of diaphragm is 2mm), limiting rings from accessories shall be inserted so as to ensure the total length of used diaphragms and limiting rings is always 20 mm.

**Orientation table of the number of diaphragms for typical steam and water measurements:**

Input parameters		Number of diaphragms
Water	10 MPa, 225°C	1 to 3
	17 MPa, 230°C	3 to 5
	21 MPa, 250°C	6 to 8
Steam	10 MPa, 540°C	1 to 5
	17 MPa, 540°C	3 to 5
	21 MPa, 575°C	6 to 10

Smaller number of diaphragms is selected in case of a higher flow of sample and vice versa. Location of the filter, diaphragms and limiting rings is evident in the dimensional drawing. Before the installation, it is necessary to check cleanness and undamaged conditions of surfaces of the sealing and the sealing itself.

When using the cooler, it is necessary to adjust such flow of cooling water so as to ensure suitable temperature of the measured sample or, as the case may be, it might be

necessary to modify flow of the sample with the number of diaphragms of the reduction chamber.

**OPERATION AND MAINTENANCE**

It is recommended to inspect the reduction chamber approximately 1x month and always when the flow of the sample is changed. The chamber shall be disconnected. The inner cavity shall be cleaned (avoid using steel tools). Diaphragms that were not flashed are cleaned with a soft brass brush. Diaphragms that were flashed, sealing and mesh shall be replaced. Removing and inserting diaphragms are facilitated with a steel rod 3.5h11 with vertically re-turned face, which is clamped in a vertical position (e.g. in a vice). The required free length of the rod is about 50mm. The outlet part of the chamber is slid on the rod with the screw-joint facing down. Diaphragms are placed on the face of the rod with concurrent careful gradual sliding of the outlet part upwards.

**WARNING**

After the installation, the cap nut (OK 50) shall be tightened firmly.

**SPARE PARTS**

Spare parts for two-, three- and five-year operation of the reduction chamber:

SPECIFICATIONS	Number of pieces for operation			ORDERING NUMBER
	2 years	3 years	5 years	
Diaphragm	4	6	10	018 987 115
Limiting ring	l = 4mm	2	4	018 991 515
	l = 10mm	1	2	018 990 415
Sealing	4	6	10	018 989 315
Mesh	4	6	10	018 986 015

**WARRANTY**

Pursuant to § 429 of the Commercial Code and the provisions of § 620 (2) of the Civil Code, the manufacturer warrants for technical and operation parameters of the product specified in the manual. The warranty period is 24 months from the receiving of the product by the customer, unless established otherwise in the contract. The rejection of defects shall be enforced in writing at the manufacturer within the warranty period. The rejecting side shall identify the product name, ordering and manufacturing numbers, date of issue and number of the delivery note, clear description of the occurring defect and the subject of the claim. If the rejecting side is invited to send the device for repair, it shall do so in the original package of the manufacturer and/or in another package ensuring safe transport.

The warranty shall not apply to defects caused by unauthorized intervention into the device, its forced mechanical damage or failure to comply with operation conditions of the product and the product manual.

**REPAIRS**

The repairs shall be made by the manufacturer. The devices shall be sent for repair in the original or equal package without accessories.

**DISABLING AND LIQUIDATION**

They shall be realized in compliance with the Waste Act No. 106/2005 Coll.

Both the product and its package do not include any parts that could impact the environment.

Products that are withdrawn from operation (including their packages) may be disposed of to the sorted or unsorted waste pursuant to the type of waste.

The whole product and its package can be recycled completely.

**NOVÁ PAKA**

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