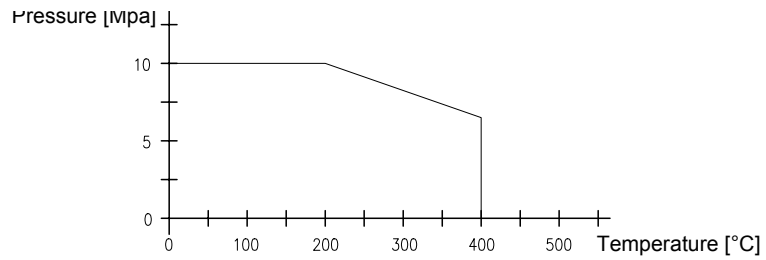




APPLICATION

- To ensure cleanness of the piping in circuits measuring flow of stem, condensate, water and other fluids;
- As selected equipment BT2 and BT3 pursuant to the Decree No. 214/1997 Coll. on securing quality in activities related with the application of nuclear energy and activities leading to radiation and on establishment of criteria for classification and division of selected equipment into safety classes;
- As pressure equipment of category III pursuant to the Decree of the Government 26/2003 Coll. (compliance assessment module B+D)
- As a special design with cleanness of internal surfaces of grade I pursuant to TPE 10-40/1926/85 (code PC1)

Tanks are rated products pursuant to the Act No. 22/1997 Coll. and Compliance certificate **EC-986000** is issued for them.



DESCRIPTION

Drain tank is a single-chamber tank, which consists of a jacket closed from both sides with welded bottoms with an internal countersinking. The bottoms include terminals for medium outlet and for drain tanks. In the upper part of the jacket of the tank, a terminal for the inlet of the impulse piping is welded. To close the terminal for drain tank, a suitable stainless valve - type 967 or ball valve - type 971 or 972 – can be used pursuant to the temperature of the operation medium. Special design of the drain tank ensures that impurities of the operation medium are deposited in the bottom part of the tank and such impurities can be easily drained off anytime.

TECHNICAL DATA

Operation position:

Drain tanks shall be placed vertically, the input and output terminals in the upper part, drain terminal in the bottom part of the tank

- Type of operation:** continuous
- Volume of tank:** 470 cm³
- Weight:** approx. 3.3 kg

- Applied materials:**
- Jacket of tank: stainless steel AISI 321
- Bottom: stainless steel 1.4541
- Connecting terminals: stainless steel 1.4541

OPERATION CONDITIONS

The armatures are designed for the environment defined by the group of parameters and their severity grades IE 36 pursuant to the standard ČSN EN 60721-3-3 and the following operation conditions.

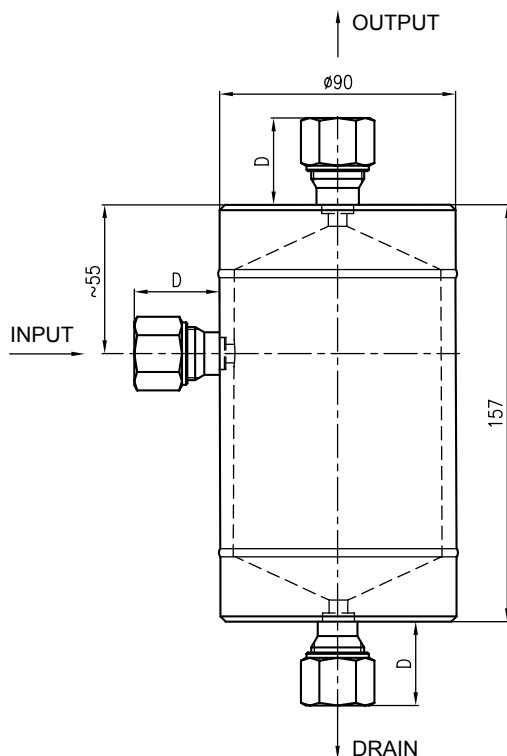
Classification of tank as a part of piping systems pursuant to ČSN EN 13480-1, table 4.1-1: piping category I, group of liquids 2 (refer to CEN/TR 13480-7).

Operation liquid: steam, condensate, water and other liquids

Parameters of liquid	
Max. operation overpressure [MPa]	Operation temperature min./max. [° C]
10	0/200
6.5	0/400

PRESSURE AND TEMPERATURE CHARACTERISTICS

Values of pressure and temperature of the operation medium, for which the tank may be used, are specified in the following chart.



Size of dimension "D" in the dimensional drawing is identified at the relevant codes of connecting terminals in table 2.

DESIGNATION

Data on bottom of the tank

- Trade mark of the manufacturer
- Product ordering number
- Maximum operation pressures and temperatures
- Material of bottom
- Casting number of material of bottom
- Mark of realized pressure test
- Manufacturing number
- Mark CE 1015

Data on jacket of the tank

- Material of jacket
- Casting number of material of jacket

DELIVERY

Unless agreed otherwise with the customer, each delivery includes

- Delivery note
- Products pursuant to the purchase order
- Holder B6 ordered as optional accessories
- Suitable valve or cock ordered independently pursuant to the catalogue, type 967, 971 and 972
- Accompanying technical documentation in Czech:
 - o Product quality and completeness certificate, which also serves as the warranty certificate
 - o EC compliance certificate
 - o Test protocol and overview of applied materials
 - o Product manual
 - o Manual for the relevant valve or cock together with the manual for accessories, type 981
 - o Protocol about inspection of cleanness of internal surfaces (only in case of armature with code PC1)

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

- Copy of the EC certificate of type test pursuant to the Decree of the Government 26/2003 Coll.
- Copy of the Inspection Certificate 3.1 pursuant to ČSN EN 10204 for the material of the tank jacket and bottom with the casting number

- Declaration of conformity with order 2.1 pursuant to ČSN EN 10204

CERTIFICATE

- Pressure equipment of category III pursuant to the Decree of the Government 26/2003 Coll. (compliance assessment module B+D), EC certificate of type test SZÚ Brno

ORDERING

The purchase order shall specify

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

The purchase order shall also specify if the delivery of the valve or cock for closing the terminal for draining the tank is required. It shall be ordered independently.

PURCHASE ORDER EXAMPLE

Standard design:

Drain tank
986 11 15 21 B6 - 20 pcs

Special request:

Drain tank
986 11 15 15 PC1 - 5 pcs

ORDERING VALVES AND COCKS

They shall be ordered independently pursuant to catalogues 967, 971 and 972.

The purchase order shall specify

- Name
- Ordering number
- Number of pieces

TABLE 1 - DESIGN OF DRAIN TANKS, TYPE 986

SPECIFICATION		ORDERING NUMBER					
		986	11	xx	xx	xx	xxx
CONNECTING TERMINALS	of input and output pursuant to table 2			xx			
	of draining pursuant to table 2				xx		
ACCESSORIES	holder B6 pursuant to table 3					B6	
SPECIAL MODIFICATIONS	cleanness of internal surfaces of the equipment of grade I *)						PC1

*) Only as a special request on the basis of an agreement with the manufacturer

TABLE 2 – OVERVIEW OF CONNECTING TERMINALS

CODE	DRAWING	INSTALLATION PROCEDURE OF CONNECTION OF TERMINALS WITH THREADED RINGS
11		<p>By means of a cap nut and two rings, a tube made of stainless or carbon steel (pursuant to ČSN 42 6711 and ČSN 42 6750) with diameter according to the drawings and tolerance of outside diameter ± 0.3 mm can be assembled in a way that enables further dismantling.</p> <p>FIRST ASSEMBLY:</p> <ol style="list-style-type: none"> Put the cap nut, rear (cylindrical) ring and front (conical) ring on the straight-cut end of the tube that is free of burrs – pay attention to its orientation! To ensure correct function, it is necessary to maintain the layer of grease applied by the manufacturer on the conical sealing surface, rear ring and threads! Insert the end of the tube with rings into connecting sleeve up to the bottom and tighten the cap nut by hand. Tighten the cap nut with a torque-limiting wrench with the following torque 30 - 35 Nm (diameters 6 and 8 mm), 60 - 65 Nm (diameters 10, 12 and 14 mm),
12		<p>UNINSTALLATION + REPEATED INSTALLATION:</p> <ol style="list-style-type: none"> Realize the uninstallation by complete unscrewing of the cap nut <u>when pressure is discharged from the system</u>. Before the repeated installation, check cleanliness of the tube, threads and all sealing surfaces and look out any possible damage to them. Revolving of the front threaded ring on the tube is not a defect! To ensure correct function, it is suitable to maintain the layer of grease applied by the manufacturer on the conical sealing surface, rear ring and threads or to apply grease again. If required, the original grease can be ordered from the manufacturer of the tank. Realize the installation by sliding the end of the tube with rings and cap nut up to the bottom of the connecting sleeve. Tighten the cap nut by hand. With the use of a moment wrench, tighten the nut with the above mentioned torque.
13		<p>WARNING: THE CAP NUT MAY NEVER BE TIGHTENED (RELEASED) UNDER PRESSURE – it could cause lethal injury!!!</p> <p>By a failure to comply with the aforesaid torques (i.e. if the cap nut is not tightened enough or is tightened too much) during the installation and with the minimum direct part of the tube from its end, resistance of the connection to pressures and vibrations is decreased; consequently, it can result in leakage of the connection.</p> <p>In case of vibrations of the piping system, the armature to be connected shall be fixed by means of a suitable holder and the connecting piping shall be attached in certain distances with tube fittings.</p>
14		<p>Connecting tube shall be inserted fully up to the bottom of the sleeve</p>
15		<p>Minimum length of direct part of the tube</p>

TABLE 2 - OVERVIEW OF CONNECTING TERMINALS (continued)

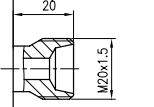
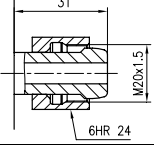
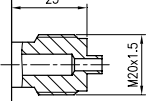
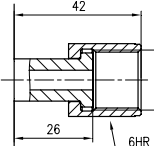
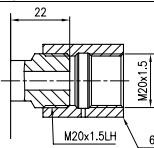
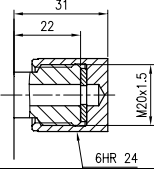
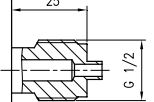
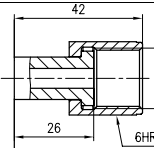
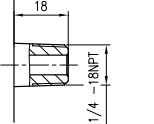
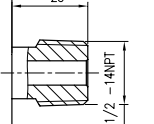
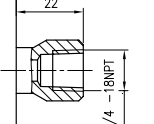
CODE	DRAWING	DESCRIPTION AND INSTALLATION PROCEDURE
21		SCREW-JOINT FOR A CONE With the use of a cap nut, screw the cone with welded piping to the screw-joint and tighten with torque 120 Nm.
22		WELD-ON CONE WITH CAP NUT M20x1.5 With the use of a nut, screw the armature to the screw-joint for a cone, which forms a part of e.g. condensation tank, another valve, etc. and tighten with torque 120 Nm.
31		MANOMETRIC SCREW-JOINT M20x1.5 1. Put metal sealing on the screw-joint 2. With the use of a cap nut, screw the sleeve with welded piping to the manometric screw-joint and tighten with torque 120 Nm.
32		WELDED SLEEVE WITH CAP NUT M20x1.5 With the use of a nut, screw the armature to the manometric screw-joint with the relevant thread and tighten with torque 120 Nm.
33		MANOMETRIC SCREW-JOINT M20x1.5 LH Screw-joint is used for the connection of manometer or valve with manometric screw-joint M20x1.5 1. Put metal sealing on the screw-joint of the manometer. 2. Screw the manometer and the armature together with a sleeve connection (delivered with the armature), which shall be tightened with torque of approx. 120 Nm
34		TEST SCREW-JOINT M20x1.5 Screw-joint is used for the connection of inspection manometer. It is delivered including a plug with sealing. Recommended torque 120 Nm.
35		MANOMETRIC SCREW-JOINT G1/2 1. Put metal sealing on the screw-joint 2. With the use of a cap nut, screw the sleeve with welded piping to the manometric screw-joint and tighten with torque 120 Nm.
36		WELDED SLEEVE WITH CAP NUT G1/2 With the use of a nut, screw the armature to the manometric screw-joint with the relevant thread and tighten with torque 120 Nm.
41		EXTERNAL THREAD 1/4 - 18NPT 1. Wind sealing tape of PTFE on a thread 2. Screw the armature into the hole with corresponding internal thread and tighten with torque 28Nm.
42		EXTERNAL THREAD 1/2 - 14NPT 1. Wind sealing tape of PTFE on a thread 2. Screw the armature into the hole with corresponding internal thread a tighten with torque 60 Nm.
51		INTERNAL THREAD 1/4 - 18NPT 1. Wind sealing tape of PTFE on a corresponding external thread 2. Tighten the screw-joint with torque 28 Nm.

TABLE 3 - ACCESSORIES

NAME	SPECIFICATION		
	PART	MATERIAL	NUMBER
Holder B6 (dimensional drawing – refer to figure in Article <i>Installation and connection</i>)	Holder	11 373	1 pc
	Yoke	1.4541	1 pc
	Nut ISO4034-M8-5-A2K		2 pcs
	Washer 8 ČSN 02 1740.05		2 pcs

PACKING

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 11/1K3 pursuant to ČSN EN 60721-3-1 (i.e. in places with temperature from -5 to 45 °C and with humidity from 5 to 95%, 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

The installation of the drain tank may only be realized by a worker of the installation and service organization.

The installation and uninstallation of the screw-joint of selected equipment pursuant to the Decree 214/1997 Coll. for the connection of the drain tank, their operation and maintenance may only be performed by a bearer of the AUTHORIZATION, which is issued by the manufacturer of the armatures on the basis of passed training.

INSTALLATION OF DRAIN TANKS

Drain tanks shall be placed vertically, the input and output terminals in the upper part, drain terminal in the bottom part of the tank.

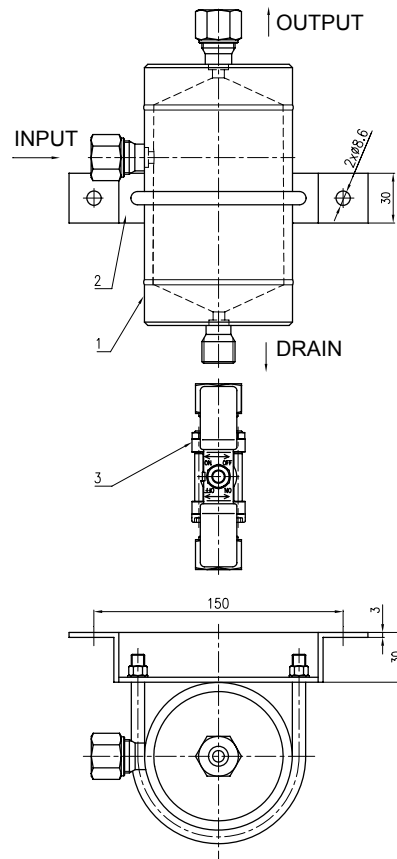
CONNECTION OF THE IMPULSE PIPING

Before the connection, the impulse piping shall be cleaned perfectly.

Drain tank shall be connected to the impulse piping through the valve by means of welded terminals. All types of connections, including dimensional drawings and described way of installation, are provided in table 2.

TYPE OF INSTALLATION WITH HOLDER B6

1. Drain tank
2. Holder B6
3. Ball valve (type 971 or 972) or stainless valve (type 967)



COMMISSIONING

After the installation, inspection of the correct position and connection of the impulse piping, the drain tank is prepared for start of operation.

OPERATION AND MAINTENANCE

TANK CLEANING

Impurities are drained from the tank with the use of a valve or a cock on the drain terminal (they are not a part of the tank – they can be ordered independently).

PROCEDURE WHEN FINDING LEAKAGE OF CONNECTION WITH THREADED RINGS

Possible leakage of the connection can be caused by unprofessional installation, e.g. a failure to comply with required torque (i.e. if the cap nut is not tightened enough or is tightened too much), a failure to comply with the minimum direct part of the tube from its end or using this connection in conditions with increased level of vibrations without fixation of the armature and connecting tubes, especially of bigger lengths.



WARNING

Never tighten (release) the cap nut under pressure – danger of lethal injury!!!

Uninstallation and repeated installation of the connection shall be realized pursuant to table 2 - Connecting terminals.

SPARE PARTS

The drain tank design does not require any delivery of spare parts.

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 36 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 tanks are not repaired.

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, can be disposed of to the sorted or unsorted waste pursuant to the type of waste.

The package of the sensor can be recycled completely.

Metal parts of the products are recycled, non-recyclable plastic materials shall be disposed of in compliance with the aforesaid Act.



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