ZPA NOVÁ PAKA

PRODUCT MANUAL

Accessories to pressure sensors, manifolds and valves
Manometric condensations loops and adapters
type 981

APPLICATION

- The condensation loops are used for the connection and protection of manometers against the effects of pressure surges and high temperature of the measured operating substance, which could unfavourably influence the correct function of manometers.
- The manometric adapter is used for the connection of manometers, for example instead of the closing plug of manifolds, valves or ball valve or they can also be used as a branch for other measuring equipment.
- As special design with cleanness of inner surfaces of grade I according to TPE 10-40/1926/85 (code PC1)
- For the environment, which requires mechanical resistance according to EN 60068-2-6 (class AH2 according to ČSN 33 2000-5-51) and seismic capability of the electrical equipment of the safety system of nuclear power stations according to IEC 980 (MVZ level SL-2).

DESCRIPTION

The condensation loops and manometric adapters are made of the tube Ø 20 x 2.6 or Ø 21.3 x 3.2 [mm], or, as the case may be, another one according to the requirement of the customer. The loop can be either bent (shape U) or coiled. The adapter can be either direct or angular (shape L). The inlet connection of the loop (adapters) is either thread with a connection pin or for welding-on; the outlet connection is either with a manometric connection or for welding-on. The manometric connection is sealed with a flat gasket, which shall be ordered separately.

PRINCIPLE

Water fills in the bottom half of the loop and is used as protection barrier between the high temperature of steam and the manometer.

TECHNICAL DATA

Design: based on ČSN 13 7530 and DIN 16282
Operating position: vertical with the outlet side facing up
Type of operation: continuous
Weight: according to tab. 2
Used materials:

Loop or adapter	steel according to tab. 2
Inlet and outlet terminal	steel according to tab. 2
Sleeve connection	steel according to tab. 3

OPERATING CONDITIONS

The condensation loops are designed for the environment defined by the group of parameters and their severity grades IE36 according to EN 60721-3-3 and the following operating conditions, i.e. in the places with minimum protection against daily fluctuations of the outdoor climate, exposed to sun radiation, with impact of precipitations carried by rain/wind.
Relative ambient humidity:
10 to 100 % with condensation with upper limit of water content 29 g H_2O/kg of dry air
Atmospheric pressure: 70 to 106 kPa
Operating liquid: steam and condensate
Maximum operating temperature:
is established by the material – refer to the table of design of loops and adapters
Nominal pressure according to ČSN 13 0010: PN250

PRESSURE AND TEMPERATURE CHARACTERISTICS
The values of pressure and temperature of the operating medium, for which the manometric condensation loops and adapters may be used, are identified by the selected material. The charts illustrate dependency of pressure on temperature for various materials.
The material of the condensation loop is identified pursuant to the highest temperature and maximum operating pressure of the medium on the inlet side of the loop.

Chart 1 – Pressure-temperature characteristics of the standard materials of the manometric condensation loops and adapters

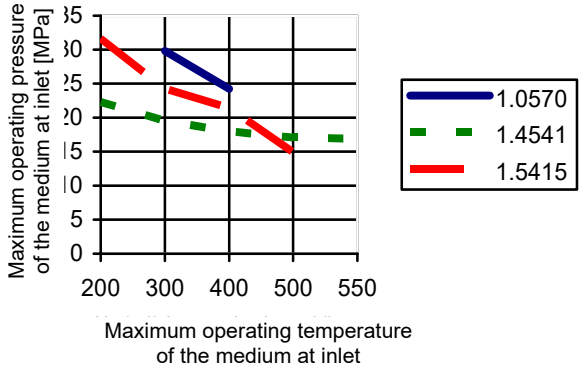
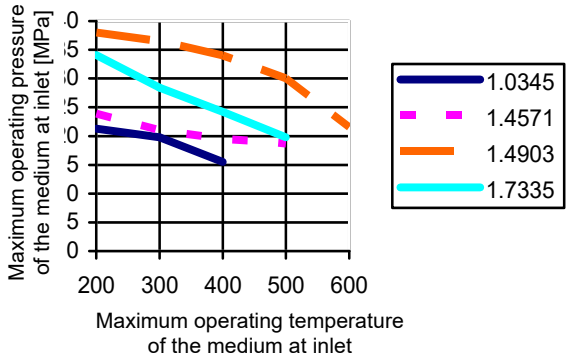


CHART 2 – **Pressure-temperature characteristics of materials of manometric condensation loops and adapters as special requirement after an agreement with the manufacturer**



DESIGNATION

Data on the product

- Trademark of the manufacturer
- Nominal pressure PN (maximum operating pressures and temperatures)
- Material
- Connecting thread
- Mark of realized pressure test
- Time code
  (serial number for design with code PC1)

DELIVERY

Unless agreed otherwise with the customer, each delivery includes

- Delivery note
- Products pursuant to purchase order
- Sleeves, sealing and manometric connections ordered separately as optional accessories
- Accompanying technical documentation in Czech:
  - Product quality and completeness certificate, which also serves as the warranty certificate
  - Test report and list of used materials
  - Product manual
  - Inspection report about cleanness of inner surfaces (only in case of armature with code PC1)

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 EN 10204 for the material according to the table of used materials with heat number
- Declaration of Conformity with purchase order 2.1 pursuant to EN 10204
- NDT report about visual and dimensional inspection of welds (VT)
- NDT report about capillary test (PT)
- Test report about the seismic and the vibration qualification
- Declaration of Conformity of the supplier according to EN ISO/IEC 17050-1

PACKING

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

TRANSPORT

The products may be transported on conditions corresponding to the set of combinations of classes IE 23 pursuant to EN 60721-3-2 (i.e. by airplanes, trucks, semi-trailers and trailers, railway wagons with specially designed shock absorbers and ships, in premises that are neither ventilated, nor protected against atmospheric conditions).

STORAGE

The products may be stored on conditions corresponding to the set of combinations of classes IE 13/1C3 for SO2 pursuant to EN 60721-3-1, with ambient temperature from -30 to + 55 °C (i.e. in places providing minimum protection against daily fluctuations of outdoor climate, exposed to sun radiation, impact of precipitations carried by wind, with danger of growth of fungi and attacks by animals, with the exceptions of termites, in close vicinity of sources of dust and sand, with vibrations of low importance).

TESTING

The loops are only tested by water with respect to tightness and waterproofness pursuant to ČSN 13 3060, section 2, or, as the case may be, pursuant to DIN 3230 (for loops according to DIN 16282).
On the basis of a requirement of the customer, visual and dimensional inspection of welds may be performed for welded design of condensation loops (method VT) and capillary test of welds (method PT) with the NDT report.

RELIABILITY

Reliability indicators in operation conditions and ambient conditions specified herein

- Mean time of operation between failures 96 000 hours (inf. value)
- Expected service life 10 years

ORDERING

The purchase order shall specify:

- Name
- Product ordering number
- Requirement for other documentation according to Article DELIVERY
- Other (special) requirements
- Number of pieces

PURCHASE ORDER EXAMPLE

Standard design:

1. Manometric condensation loop
   981 KS Z 31 33 13
   20 pcs
2. Manometric adapter
   981 TN P 31 33 13
   20 pcs

Special requirement:

1. Manometric condensation loop
   981 KS S 00 42 29
   Material steel 1.4401
   5 pcs
2. Manometric adapter
   981 TN R 00 40 29
   Material steel 1.4401
   5 pcs

ORDERING ACCESSORIES

The purchase order shall specify:

- Name
- Ordering number
- Number of pieces

PURCHASE ORDER EXAMPLE

Standard design:

1. Weld-on sleeve with cap nut and sealing
   981 NA1
   20 pcs
2. Sealing
   382041
   20 pcs

TABLE 1- DESIGN OF CONDENSATION LOOPS TYPE 981

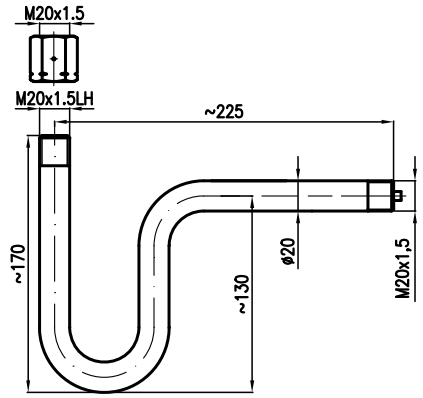
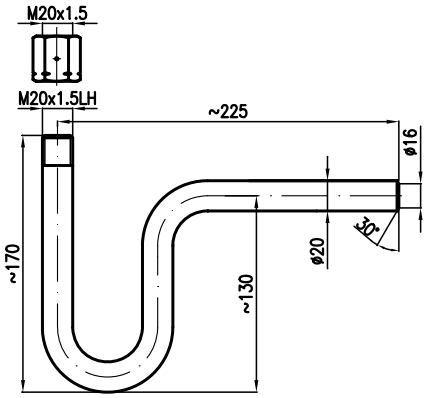
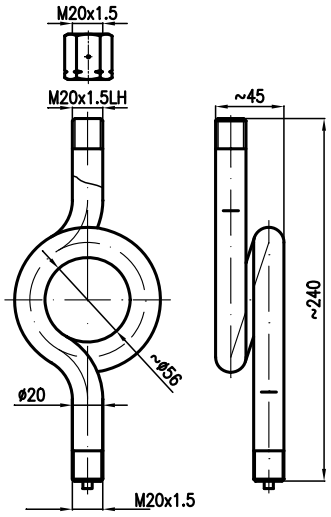
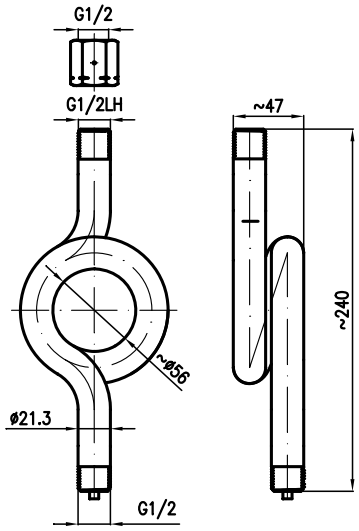
(a majority of designs only as a special request, as a default the design is manufactured as in TABLE 2 – DESCRIPTION AND DIMENSIONAL DRAWINGS OF STANDARD DESIGNS OF CONDENSATION LOOPS)

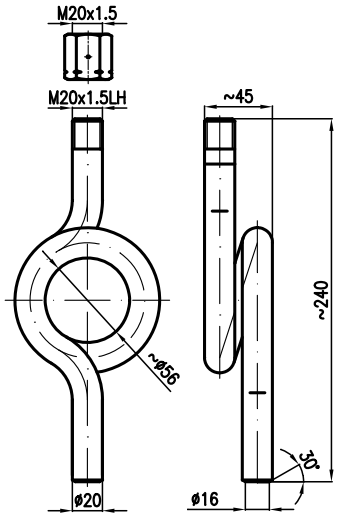
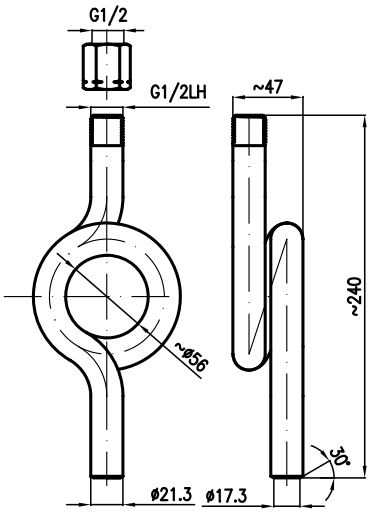
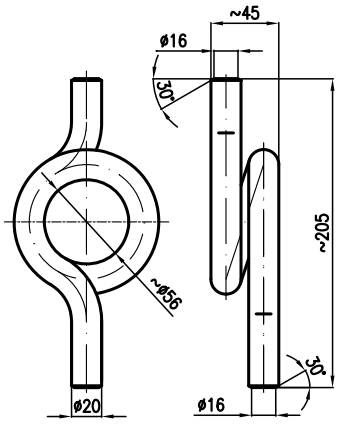
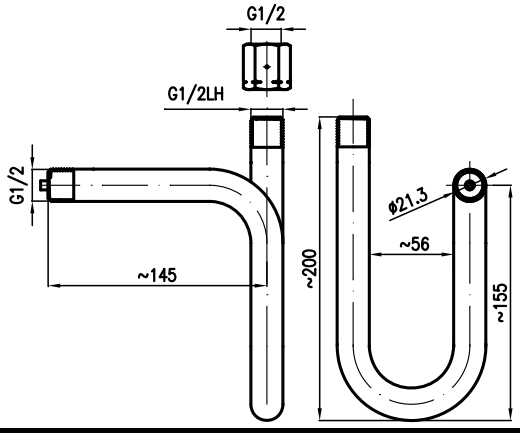
SPECIFICATION				ORDERING NUMBER							
				981	KS	x	xx	xx	x	x	/xxx
Design	bent					Z					
	coiled					S					
	bent angular					R					
	other					9					
Inlet	M20×1.5 with connection pin						31		1		
	G1/2 with connection pin						35		2		
	for welding-on						00		1		
Outlet	manometric connection M20×1.5							33	1		
	manometric connection G1/2							40	2		
	1/2NPT-18							42			
	G1/2 external							62			
	for welding-on							00	1		
	other **)							99			
Tube of the loop Ø x t [mm]	20 x 2.6	for the loop with thread M20x1.5 and the loop for welding-on							1		
	21.3 x 3.2	for the loop with thread G1/2 and 1/2NPT-18							2		
	other								9		
Material	1.0570 (S355J2G3) *)	Maximum operating temperature [°C]	400							1	
	1.5415 (16Mo3) *)		530							2	
	1.4541 (X6CrNiTi 18-10)		550							3	
	1.0345 (P235GH) *)		400							4	
	1.4571 (X6CrNiMoTi 17-12-2)		500							5	
	1.4903 (X10CrMoVNb9-1)		620							6	
	1.7335 (13CrMo4-5)		550							7	
	other									9	
Cleanness of inner surfaces of grade I											/PC1

*) Anti-corrosion treatment with preservation oil

**) At the outlet you can also choose other terminals according to manual Accessories to manifolds and valves, type 981

TABLE 2 – DESCRIPTION AND DIMENSIONAL DRAWINGS OF STANDARD DESIGNS OF CONDENSATION LOOPS

DESIGN		DIMENSIONAL DRAWING
CODE	**DESCRIPTION**	
981 KS Z 31 33 11 **981 KS Z 31 33 12** **981 KS Z 31 33 13**	**Condensation loop** **bent with manometric connection M20x1.5** **and with thread M20x1.5 with connection pin** **according to EN 837** **according to ČSN 13 7530:1989, shape A** Material: 1.0570 981 KS Z 31 33 11 1.5415 981 KS Z 31 33 12 1.4541 981 KS Z 31 33 13 Weight: 0.60 kg	
981 KS Z 00 33 11 **981 KS Z 00 33 12** **981 KS Z 00 33 13**	**Condensation loop** **bent with manometric connection M20x1.5** **and for welding-on** **according to ČSN 13 7530:1989 shape B** Material: 1.0570 981 KS Z 00 33 11 1.5415 981 KS Z 00 33 12 1.4541 981 KS Z 00 33 13 Weight: 0.55 kg	
981 KS S 31 33 11 **981 KS S 31 33 12** **981 KS S 31 33 13**	**Condensation loop** **coiled with manometric connection M20x1.5** **and with thread M20x1.5 with connection pin** **according to EN 837** **according to ČSN 13 7530:1989 shape C** Material: 1.0570 981 KS S 31 33 11 1.5415 981 KS S 31 33 12 1.4541 981 KS S 31 33 13 Weight: 0.65 kg	
981 KS S 35 40 21 **981 KS S 35 40 22** **981 KS S 35 40 23**	**Condensation loop** **coiled with manometric connection G1/2** **and with thread G1/2 with connection pin** **according to EN 837** **shape C** Material: 1.0570 981 KS S 35 40 21 1.5415 981 KS S 35 40 22 1.4541 981 KS S 35 40 23 Weight: 0.75 kg	

CODE	DESIGN DESCRIPTION	DIMENSIONAL DRAWING
981 KS S 00 33 11 **981 KS S 00 33 12** **981 KS S 00 33 13**	**Condensation loop** **coiled with manometric connection M20x1.5** **and for welding-on** **according to ČSN 13 7530:1989 shape D** Material: 1.0570 981 KS S 00 33 11 1.5415 981 KS S 00 33 12 1.4541 981 KS S 00 33 13 Weight: 0.60 kg	
981 KS S 00 40 21 **981 KS S 00 40 22** **981 KS S 00 40 23**	**Condensation loop** **coiled with manometric connection G1/2** **and for welding-on** **according to DIN 16282:2004 shape D** Material: 1.0570 981 KS S 00 40 21 1.5415 981 KS S 00 40 22 1.4541 981 KS S 00 40 23 Weight: 0.70 kg	
981 KS S 00 00 11 **981 KS S 00 00 12** **981 KS S 00 00 13**	**Condensation loop** **coiled at both the inlet and outlet sides for welding-on** **according to DIN 16282:2004 shape G** Material: 1.0570 981 KS S 00 00 11 1.5415 981 KS S 00 00 12 1.4541 981 KS S 00 00 13 **Weight: 0.50 kg**	
981 KS R 35 40 21 **981 KS R 35 40 22** **981 KS R 35 40 23**	**Condensation loop** **bent angular with manometric connection G1/2** **and with thread G1/2 with connection pin** **according to EN 837** **shape A** Material: 1.0570 981 KS R 35 40 21 1.5415 981 KS R 35 40 22 1.4541 981 KS R 35 40 23 Weight: 0.70 kg	

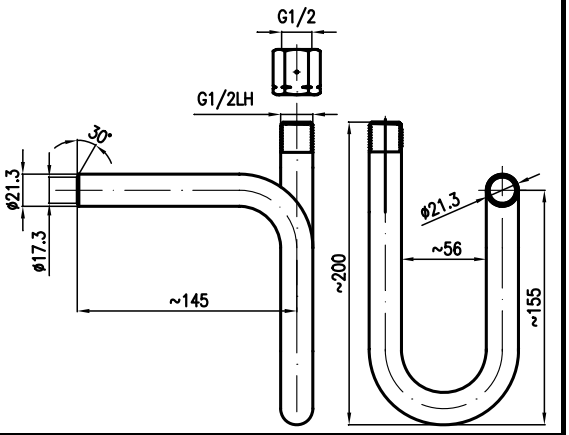
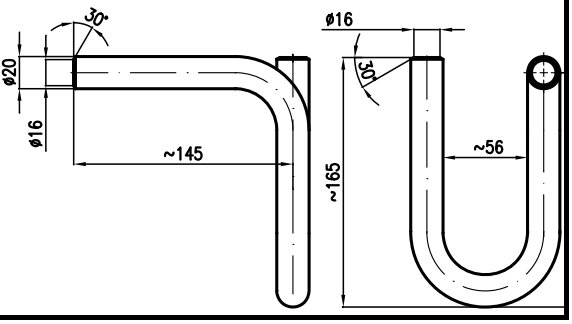
DESIGN		DIMENSIONAL DRAWING
CODE	**DESCRIPTION**	
981 KS R 00 40 21 **981 KS R 00 40 22** **981 KS R 00 40 23**	**Condensation loop** **bent angular with manometric connection G1/2** **and for welding-on** **according to DIN 16282:2004 shape B** Material: 1.0570 981 KS R 00 40 21 1.5415 981 KS R 00 40 22 1.4541 981 KS R 00 40 23 Weight: 0.65 kg	
981 KS R 00 00 11 **981 KS R 00 00 12** **981 KS R 00 00 13**	**Condensation loop** **bent angular for welding-on** **according to DIN 16282:2004 shape F** Material: 1.0570 981 KS R 00 00 11 1.5415 981 KS R 00 00 12 1.4541 981 KS R 00 00 13 Weight: 0.50 kg	

TABLE 3- DESIGN OF MANOMETRIC ADAPTERS TYPE 981

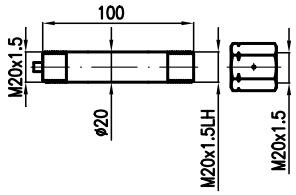
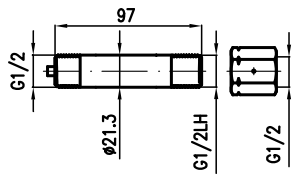
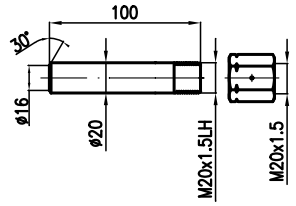
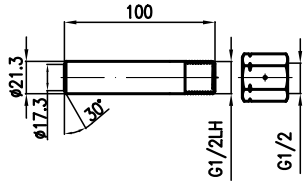
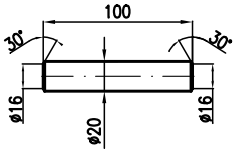
(a majority of designs only as a special request, as a default the design is manufactured as in TABLE 4 – DESCRIPTION AND DIMENSIONAL DRAWINGS OF STANDARD DESIGNS OF MANOMETRIC ADAPTERS)

SPECIFICATION				ORDERING NUMBER							
				981	TN	x	xx	xx	x	x	/xxx
Design	direct					P					
	angular					R					
	other					9					
Inlet	M20×1.5 with connection pin						31		1		
	G1/2 with connection pin						35		2		
	for welding-on						00		1		
Outlet	manometric connection M20×1.5							33	1		
	manometric connection G1/2							40	2		
	1/2NPT-18							42			
	G1/2 external							62			
	for welding-on							00	1		
	other **)							99			
Tube of the loop Ø x t [mm]	20 x 2.6 for adapters with thread M20x1.5 and adapters for welding-on								1		
	21.3 x 3.2 for adapters with thread G1/2 and 1/2NPT-18								2		
	other								9		
Material	1.0570 (S355J2G3) *)	Maximum operating temperature [°C]	400							1	
	1.5415 (16Mo3) *)		530							2	
	1.4541 (X6CrNiTi 18-10)		550							3	
	1.0345 (P235GH) *)		400							4	
	1.4571 (X6CrNiMoTi 17-12-2)		500							5	
	1.4903 (X10CrMoVNb9-1)		620							6	
	1.7335 (13CrMo4-5)		550							7	
	other										
Cleanness of inner surfaces of grade I											/PC1

*) Anti-corrosion treatment with preservation oil

**) At the outlet you can also choose other terminals according to manual Accessories to manifolds and valves type 981

TABLE 4 – DESCRIPTION AND DIMENSIONAL DRAWINGS OF STANDARD DESIGNS OF MANOMETRIC ADAPTERS

DESIGN		DIMENSIONAL DRAWING
CODE	DESCRIPTION	
981 TN P 31 33 11 **981 TN P 31 33 12** **981 TN P 31 33 13**	**Manometric adapter** **direct with manometric connection M20x1.5 and with thread M20x1.5 with connection pin according to EN 837** Material: 1.0570 981 TN P 31 33 11 1.5415 981 TN P 31 33 12 1.4541 981 TN P 31 33 13 Weight:	
981 TN P 35 40 21 **981 TN P 35 40 22** **981 TN P 35 40 23**	**Manometric adapter** **direct with manometric connection G1/2 and with thread G1/2 with connection pin according to EN 837** Material: 1.0570 981 TN P 35 40 21 1.5415 981 TN P 35 40 22 1.4541 981 TN P 35 40 23 Weight:	
981 TN P 00 33 11 **981 TN P 00 33 12** **981 TN P 00 33 13**	**Manometric adapter** **direct with manometric connection M20x1.5a for welding-on** Material: 1.0570 981 TN P 00 33 11 1.5415 981 TN P 00 33 12 1.4541 981 TN P 00 33 13 Weight:	
981 TN P 00 40 21 **981 TN P 00 40 22** **981 TN P 00 40 23**	**Manometric adapter** **direct with manometric connection G1/2 a for welding-on** Material: 1.0570 981 TN P 00 40 21 1.5415 981 TN P 00 40 22 1.4541 981 TN P 00 40 23 Weight:	
981 TN P 00 00 11 **981 TN P 00 00 12** **981 TN P 00 00 13**	**Manometric adapter** **direct at the inlet and outlet sides for welding-on** Material: 1.0570 981 TN P 00 00 11 1.5415 981 TN P 00 0012 1.4541 981 TN P 00 00 13 Weight:	

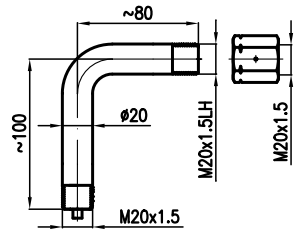
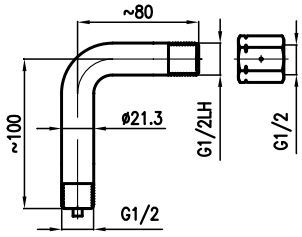
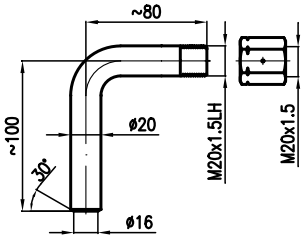
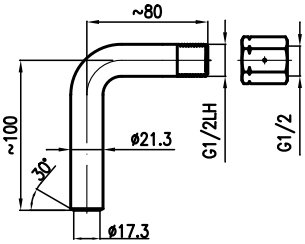
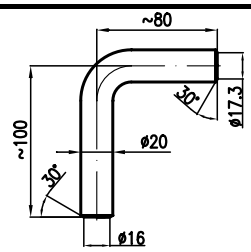
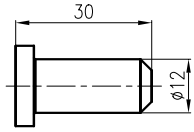
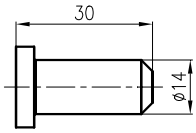
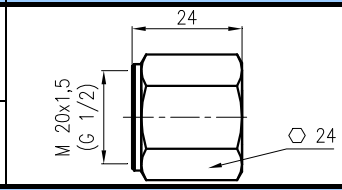
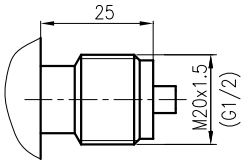
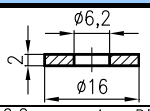
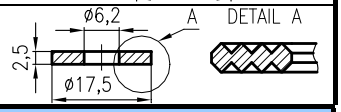
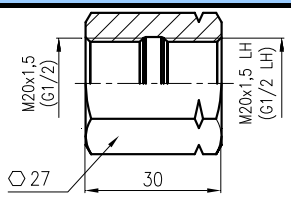
DESIGN		DIMENSIONAL DRAWING
CODE	**DESCRIPTION**	
981 TN R 31 33 11 **981 TN R 31 33 12** **981 TN R 31 33 13**	**Manometric adapter** **angular with manometric connection M20x1.5 and with thread M20x1.5 with connection pin according to EN 837** Material: 1.0570 981 TN R 31 33 11 1.5415 981 TN R 31 33 12 1.4541 981 TN R 31 33 13 Weight:	
981 TN R 35 40 21 **981 TN R 35 40 22** **981 TN R 35 40 23**	**Manometric adapter** **angular with manometric connection G1/2 and with thread G1/2 with connection pin according to EN 837** Material: 1.0570 981 TN R 35 40 21 1.5415 981 TN R 35 40 22 1.4541 981 TN R 35 40 23 Weight:	
981 TN R 00 33 11 **981 TN R 00 33 12** **981 TN R 00 33 13**	**Manometric adapter** **angular with manometric connection M20x1.5 a for welding-on** Material: 1.0570 981 TN R 00 33 11 1.5415 981 TN R 00 33 12 1.4541 981 TN R 00 33 13 Weight:	
981 TN R 00 40 21 **981 TN R 00 40 22** **981 TN R 00 40 23**	**Manometric adapter** **angular with manometric connection G1/2 a for welding-on** Material: 1.0570 981 TN R 00 40 21 1.5415 981 TN R 00 40 22 1.4541 981 TN R 00 40 23 Weight:	
981 TN R 00 00 11 **981 TN R 00 00 12** **981 TN R 00 00 13**	**Manometric adapter** **angular at both the inlet and outlet sides for welding-on** Material: 1.0570 981 TN R 00 00 11 1.5415 981 TN R 00 0012 1.4541 981 TN R 00 00 13 Weight:	

TABLE 3 – LIST OF OPTIONAL ACCESSORIES

ORDERING NUMBER		WELD-ON SLEEVE WITH CAP NUT AND SEALING The sleeve is delivered by 1 pc together with the applicable cap nut and aluminium sealing. After putting the cap nut on the sleeve and after welding the sleeve to the piping, it is possible to connect the armature to the piping that is equipped with the corresponding screw-joint for the sleeve pursuant to the dimensional drawing of the screw-joint.				
		MATERIAL OF SLEEVE		THREAD OF NUT	INNER Ø OF SLEEVE [mm]	DIMENSIONAL DRAWING OF SLEEVE
981	NA1	Carbon steel	1.0569	M20 x 1.5	6.5	
	NA2	Stainless steel	1.4541			
	NA3	Heat-resistant steel	15 128			
	NAG1	Carbon steel	1.0569	G 1/2		
	NAG2	Stainless steel	1.4541			
	NAG3	Heat-resistant steel	15 128			
	NA4	Carbon steel	1.0569	M20 x 1.5		
	NA5	Stainless steel	1.4541			
	NA6	Heat-resistant steel	15 128			
	NAG4	Carbon steel	1.0569	G 1/2		
	NAG5	Stainless steel	1.4541			
	NAG6	Heat-resistant steel	15 128			

	CAP NUT FOR WELD-ON SLEEVE		
	MATERIAL OF NUT	DIMENSIONAL DRAWING OF NUT	DIMENSIONAL DRAWING OF CONNECTED SCREW-JOINT
	Stainless steel 1.4541 (only for NA2, NAG2, NA3, NAG3, NA5, NAG5, NA6 and NAG6		
	Carbon steel 11 109.0 (only for NA1, NAG1, NA4 and NAG4)		

ORDERING NUMBER	SEALING RINGS FOR WELD-ON SLEEVE They can be ordered separately also from other materials pursuant to the ordering numbers specified below. Sealing rings can also be used for sealing of the manometric sleeve connection.		
	MATERIAL		DIMENSIONAL DRAWING
382 041	Al	EN AW-1050A	
276 067	Cu	42 3005	
382 063	Steel	1.4541	
382 096	Steel	1.4404	

ORDERING NUMBER		MANOMETRIC SLEEVE CONNECTION		
		DESIGN	MATERIAL	DIMENSIONAL DRAWING
981	NP1	M20x1.5 / M20x1.5 LH	Stainless steel 1.4541	
	NP2	M20x1.5 / M20x1.5 LH	Galvanized carbon steel 11 109	
	NP3	G1/2 / M20x1.5 LH	Stainless steel 1.4541	
	NP4	G1/2 / G1/2 LH	Stainless steel 1.4541	

INSTALLATION AND CONNECTION

The installation of the condensation loop may be realized by a worker of an installation or service organization.

When measuring pressure of water steam at high temperatures it is necessary to ensure that steam cannot penetrate the manometer, which would be damaged therewith. Therefore, we include a condensation loop before the manometer.
We recommend placing a suitable valve before the condensation loop to ensure simple dismantling of the manometer.

The loops are installed vertically with the outlet side facing up (refer to the drawing at individual designs). They are connected on the outlet side with a sleeve connection with thread (M20x1.5 or G1/2) or by welding, at the inlet side the connection is with a pin (with thread M20x1.5 or G1/2) or by welding.

The connection to the manometer is realized according to EN 837-2. Correct and safe sealing of the loops with a cylindrical thread (G, M) is realized by means of a flat gasket between the rest area of the thread of the loop and its counter-piece (ball valve, valve, manometer etc.).

Loops of the U-shape are designed for vertical piping; coiled loops for horizontal piping (refer to figure 1).

For the steam temperature over 250°C, it is suitable to add at least 0.5 m of a tube before the loop to ensure better cooling or solve the connection of the pressure sensor by means of the condensation tank.

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

CONNECTION OF SCREW-JOINT WITH SLEEVE CONNECTION (M20x1.5 LH / M20x1.5 or G1/2LH / G1/2)

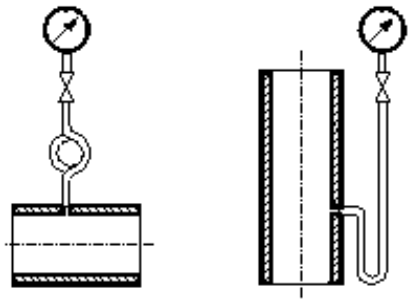
1. On the screw-joint to the manometer, put on a metal sealing (it is not a part of the delivery, it can be ordered according to table 3 – Sealing rings for weld-on sleeve
2. Screw the manometer and the loop together with a manometric sleeve connection (it is delivered together with the loop) and tighten it with torque max. 120 Nm

CONNECTION WITH MANOMETRIC SCREW-JOINT WITH CONNECTION PIN (M20x1.5 or G1/2) BY MEANS OF A WELD-ON SLEEVE

1. Put a cap-nut on the sleeve
2. Weld the sleeve on the end of the tube
3. Put the metal sealing on the screw-joint
4. Screw the piping to the screw-joint with a nut and tighten with torque max. 120 Nm

Sleeve with cap nut and sealing may be ordered according to table 3.

Figure 1 - Condensation loop for horizontal and vertical piping



COMMISSIONING

After the installation, inspection of correct position and the connection of the impulse piping, the condensation loop is prepared for putting into operation. We recommend filling the condensation loop with liquid before it is put into operation.

OPERATION AND MAINTENANCE

The condensation loops shall be blown through adequately before the connection to the manometer. Blowing through shall be repeated during the operation too.
In case of an interruption of operation in winter months, the loop shall be emptied or filled with non-freezing liquid.

SPARE PARTS

The design of the condensation loop does not require any delivery of spare parts.

WARRANTY

The warranty period shall be 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 loops do not require any repair.

DISABLING AND LIQUIDATION

Both the product and its package do not include any parts that could impact the environment.
The 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 package of the product and metal parts of the product are recycled.

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