

# PRODUCT CATALOG

## MOUNTS AND ACCESSORIES

# ABOUT COMPANY

The plant of thermal insulation materials was established in 2009. Our goal is to offer the buyer innovative solutions in the field of non-flammable thermal insulation materials adapted to Russian conditions. We have been looking for an optimal heat insulator for a long time, combining efficiency, environmental cleanliness, resistance to temperature changes and humidity. The decision was in favor of mineral wool based on basalt rocks, which fully meets all modern requirements!

## UNIQUE PRODUCTION TECHNOLOGIES.

Thanks to the accumulated experience and long-term developments, in 2011 we created our own production of thermal insulation cylinders and components made of mineral wool under the trademark PIPEWOOL. Our products have excellent performance characteristics, as evidenced by certificates of conformity and quality certificates. We are constantly increasing production, expanding the range and striving to reduce the cost of production, introducing the latest technologies and ultra-precise automatic equipment. Our specialists are able to organize the production of insulation for pipes and additional elements of any configuration for the rapid construction of non-standard thermal insulation structures.

We work using original patented technologies developed by our leading engineers.

## WHAT MAKES US DIFFERENT FROM OTHERS?

### PROFESSIONAL TEAM.

Our company employs specialists with extensive experience who will help you make the right choice taking into account your needs.

### IMPECCABLE SERVICE.

We appreciate your time, so your order will be placed and executed as soon as possible. We have hundreds of successfully completed projects of various complexity and many satisfied customers in our piggy bank. But the main reward for us is your trust, as well as recommendations to your friends!

### REASONABLE PRICES.

Our own production of thermal insulation cylinders and shaped elements allows us to independently set favorable prices for products, as well as offer wholesale customers discounts of up to 30%.

### ORGANIZATION OF DELIVERY.

Thanks to the logistics department, convenient location near the federal highway, we are able to ensure timely delivery of goods to any point in Russia with the lowest costs. No force majeure circumstances!

Modern production of insulation for pipes, unique technologies and high quality of products are the main advantages of ZTM LLC.

We are ready to become your reliable partner! Contact us today!  
We are expanding our dealer network, offering very favorable conditions for cooperation!

## MOUNTS AND ACCESSORIES

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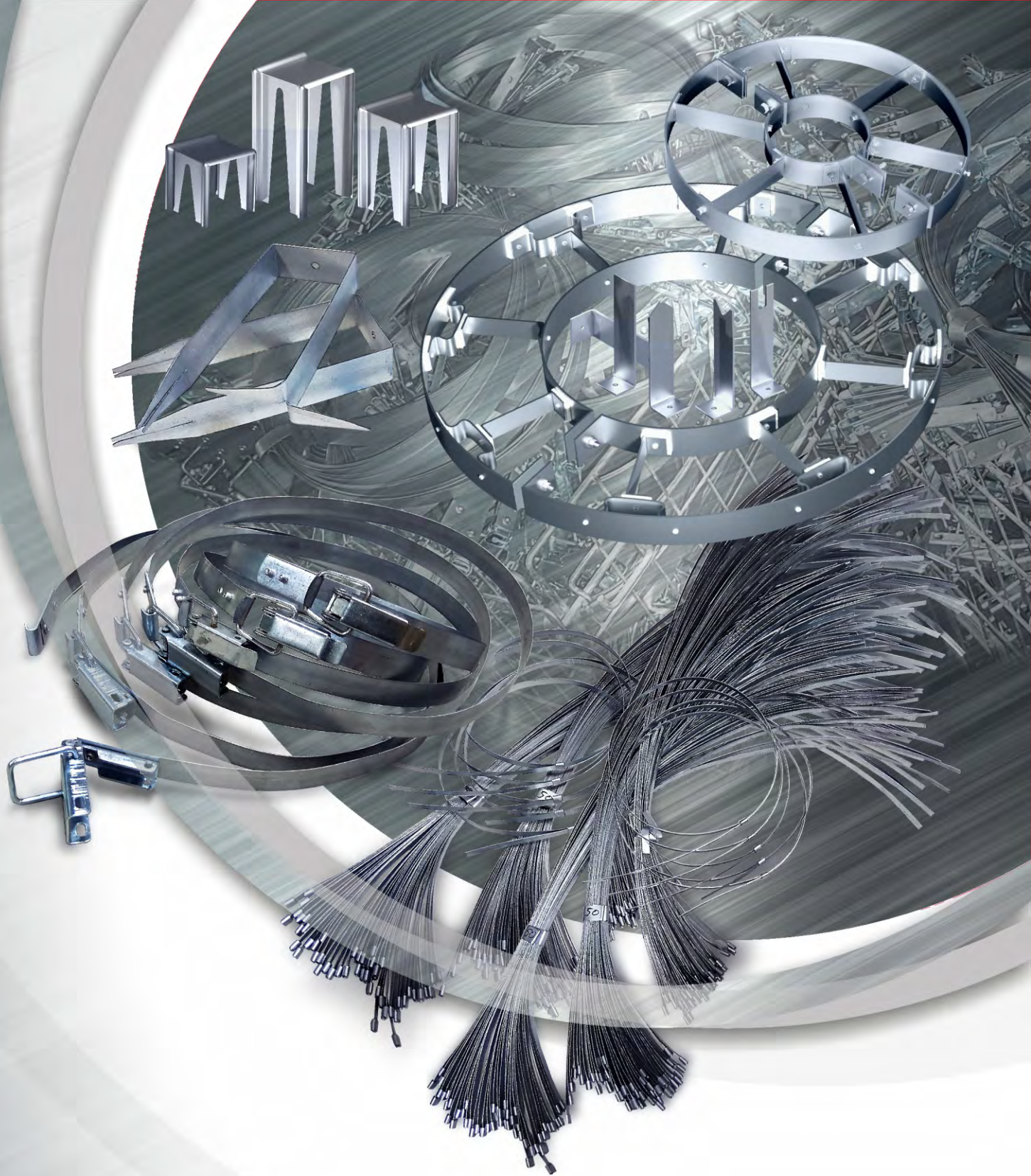
**THERMAL INSULATION MADE OF BASALT WOOL**  
in a separate catalog

**PROTECTIVE SHELLS**  
in a separate catalog

**QUICK-DETACHABLE CONSTRUCTIONS**  
in a separate catalog

**LOCKS**  
in a separate catalog





**MOUNTS AND ACCESSORIES**  
FOR THE ASSEMBLY AND INSTALLATION OF  
THERMAL INSULATION, PROTECTIVE SHELLS  
AND QUICK-RELEASE STRUCTURES.



## TO INCREASE EFFICIENCY THERMAL INSULATION FROM THE COMPANY

D. G. Belousov, General Director of ZTM LLC

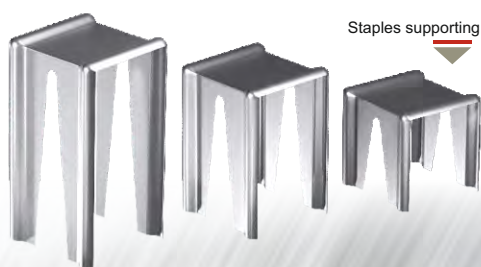
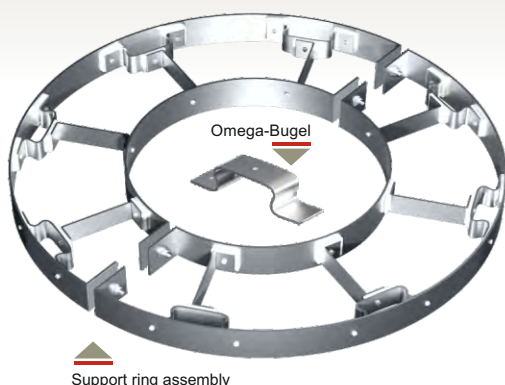
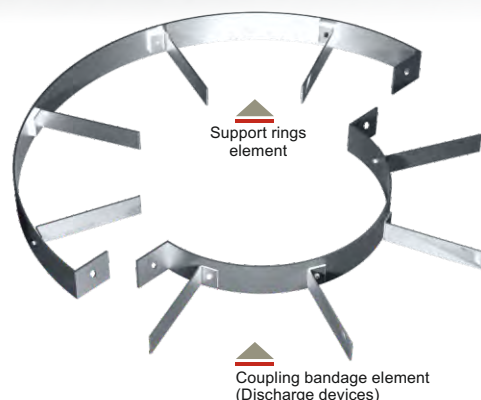
As is known, the structure and properties of mineral wool during the operation of a thermal insulation structure can change significantly as a result of self-sealing, especially during vibration and humidification. The consequence of these factors is the inconstancy of the volume of the thermal insulation structure, instability during vibration and low mechanical strength.

The efficiency of thermal insulation is guaranteed by a more advanced design and competent installation.

To preserve and improve the efficiency of the thermal insulation characteristics of thermal insulation at a given level, various metal frames are installed, on which protective coatings are mounted:

- for pipelines with a nominal diameter of less than 100 mm - support brackets;
- for pipelines with a nominal diameter of more than 100 mm - support distance rings on metal racks.

To solve this problem, special support and unloading structures have been developed, produced on automatic European CNC lines.



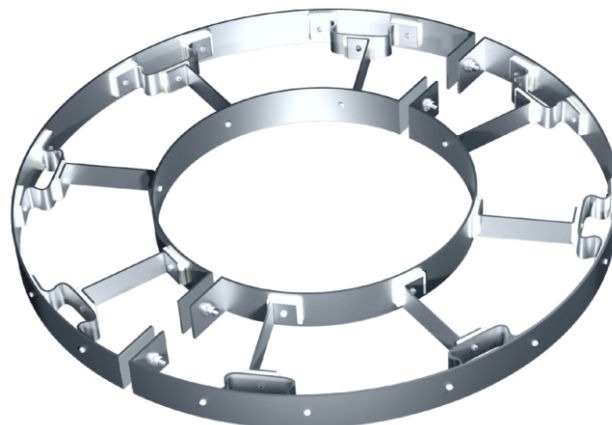
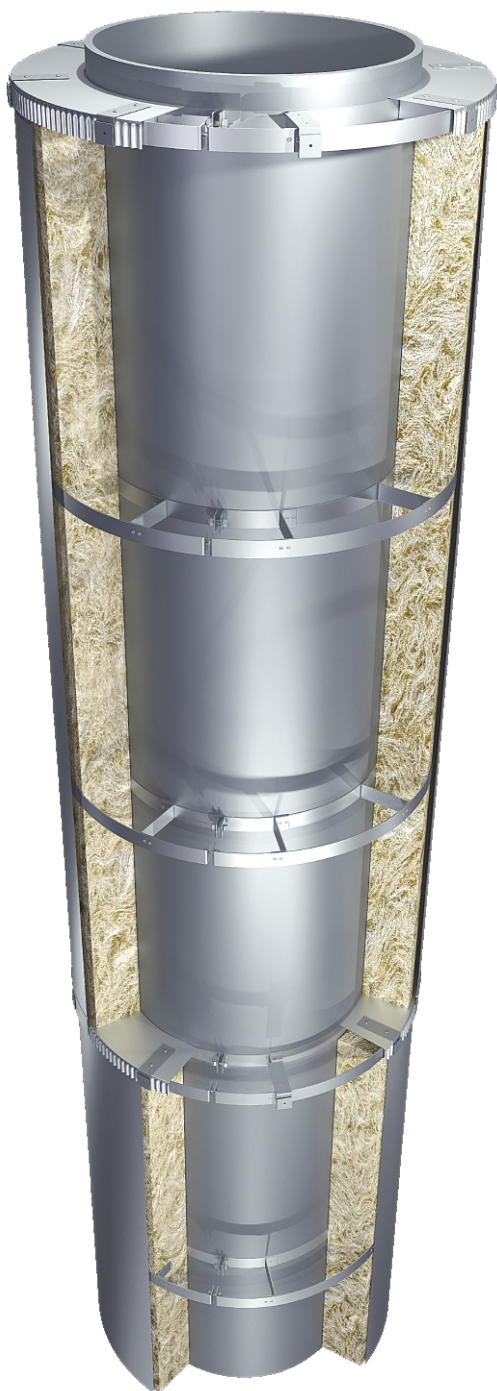
### SUPPORT RINGS AND BRACKETS PIPEWOOL




The support rings and brackets are designed to maintain load distribution when installing protective shells in the thermal insulation of horizontal pipelines and cylindrical apparatuses in industrial and marine projects. Protective shells should be supported by support rings and elastic elements.

At a temperature of 350°C, the support legs of the structure are made of heat-resistant steel and are attached to the ring with the help of elastic elements «omega-bugel» to compensate for thermal expansion and reduce the vibration transfer of the isolated object. Unloading structures and elements of the coupling bandage are used to prevent vertical displacement (sliding) of protective coatings on vertical pipelines and apparatuses when using soft thermal insulation materials.

All structures are made of carbon or stainless steel and consist of rings and brackets with intermediate support posts made of carbon or stainless steel located at a certain distance. To reduce heat transfer, the racks are separated from the ring by heat-insulating gaskets. The rings are mounted to the pipeline using a bolted connection.

\* We invite design and contracting organizations to cooperate.



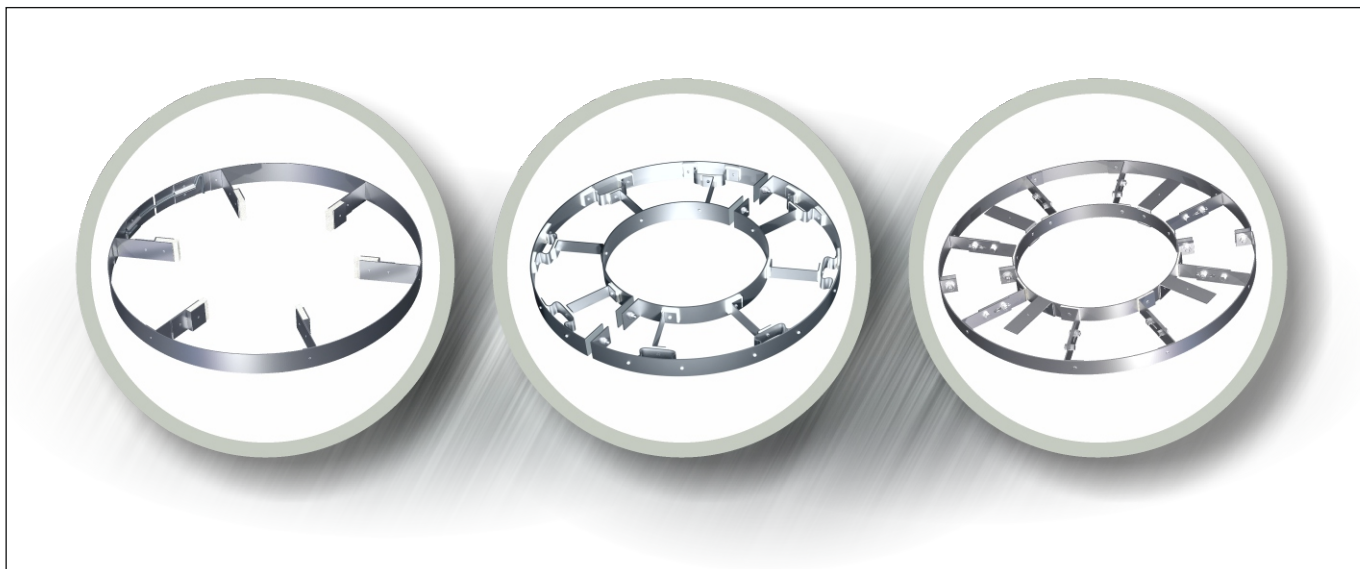
Product execution (types)	 <b>KO1</b> Ring (with pin)  <b>KO2</b> Ring  <b>KO3</b> Ring (double)
Direction	Horizontal or Vertical for pipelines or tanks
Product diameter	According to the Customer's specification
Length of distance holders (insulation thickness)	According to the Customer's specification
Metal type of Ring	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Sizes cross-section of metal tape	2x30; 3x30; 2x40; 3x40 mm
Number of product segments	From 4x (360°) or more (depending on the diameter of the product and in accordance with the load).
Distance holders	Assortment // According to the technical task of the Customer.
Metal type of Paws	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Metal type of Springs	Stainless steel. 1.4310.
Accessories	Assortment // According to the technical task of the Customer.
Mounting direction	They are installed radially directed.

Support Ring	PIPEWOOL	KO1	St3	219	170	1	3	2x30	T1	H4
Product	Manufacturer brand	Ring type	Metal type	Diameter D (mm)	Thermal insulation thickness (mm)	Number of elements (pieces)	Number of paws (pieces)	Ribbon cross section (mm)	Thermal padding	Paws type
Support Ring	PIPEWOOL	KO2	08PS	1200	100	2	5	3x30	T1	L3
Product	Manufacturer brand	Ring type	Metal type	Diameter D (mm)	Thermal insulation thickness (mm)	Number of elements (pieces)	Number of paws (pieces)	Ribbon cross section (mm)	Thermal padding	Paws type
Support Ring	PIPEWOOL	KO3	S-75	1200	100	2	5	3x30	T2	V1
Product	Manufacturer brand	Ring type	Metal type	Diameter D (mm)	Thermal insulation thickness (mm)	Number of elements (pieces)	Number of paws (pieces)	Ribbon cross section (mm)	Thermal padding	Springs type
Support Ring	PIPEWOOL	KO3	AMG3	1200	100	2	5	3x30	T2	L2 - Q1
Product	Manufacturer brand	Ring type	Metal type	Diameter D (mm)	Thermal insulation thickness (mm)	Number of elements (pieces)	Number of paws (pieces)	Ribbon cross section (mm)	Thermal padding	Paws type Springs type



### Information about the customer.

Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



### Parameters of the Support ring.

\* 000.00 - Fill it out & ☒ mark it.

Product execution (types)	<input type="checkbox"/> KO1 <input type="checkbox"/> KO2 <input type="checkbox"/> KO3 <input type="checkbox"/> KO4 <input type="checkbox"/> EKO1 <input type="checkbox"/> EKO2
Direction	Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/>
Metal type of Ring	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/> Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75 Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>
Sizes cross-section of metal tape	2x30 <input type="text"/> mm         3x30 <input type="text"/> mm         2x40 <input type="text"/> mm         3x40 <input type="text"/> mm
Diameter D (mm)	External diameter <input type="text"/> mm         Pipeline diameter <input type="text"/> mm
Number of products (pcs)	of Elements of the support ring <input type="text"/> pcs (*from 4x on 360° or more)         of Paws <input type="text"/> pcs
Length Paws (insulation thickness)	<input type="text"/> mm         Insulation <input type="checkbox"/> - One layer <input type="checkbox"/> - Two layers

### Parameters of the Distance holders.

\* 000.00 - Fill it out & ☒ mark it.

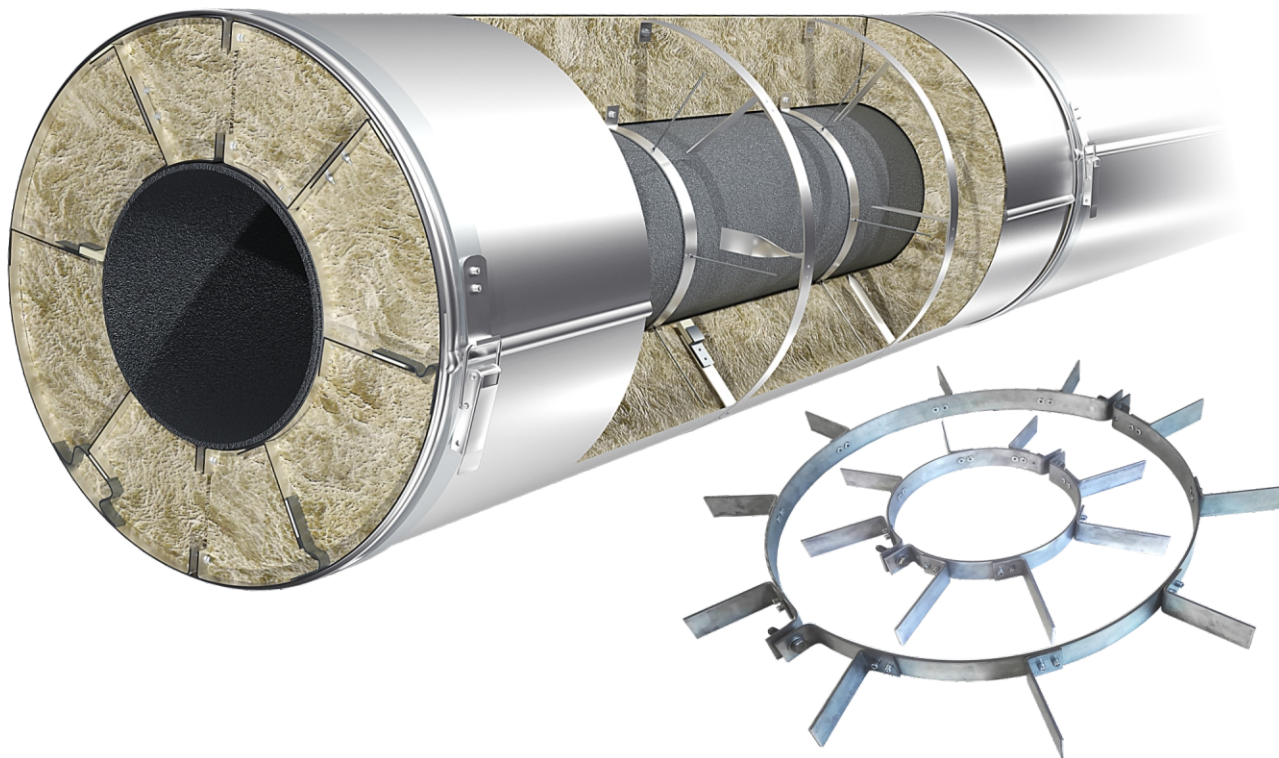
Type of paws / springs	Type of paws <input type="text"/> Type of springs <input type="text"/> St.1.4310
Metal type of Paws	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/> Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75 Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm





### Calculation of components.

\* 000.00 - Fill it out & ☒ mark it.

Number of support rings KO	<input type="text"/> pcs (*formula N1)	<input type="text"/> pcs (*formula N1)
Number of EKO elements	<input type="text"/> pcs (*formula N2)	<input type="text"/> pcs (*formula N2)
Number of paws for KO	<input type="text"/> pcs (*formula N3)	<input type="text"/> pcs (*formula N3)
Number of pins for SB	SB1 <input type="text"/> pcs (*formula N4-1)	ESB1 <input type="text"/> pcs (*formula N4-1) ESB2 <input type="text"/> pcs (*f.N4-3)

Formula N1	Formula N2	Formula N3	Formula N4-1	Formula N4-2
$N1 = \frac{L}{1000mm} + 1$	$N2 = \frac{D \cdot 3,14}{2500mm}$	$N3 = \frac{D \cdot 3,14}{500mm} + 1$	$N4 = \frac{D \cdot 3,14}{250mm} + 1$	$N4 = \frac{R \cdot 3,14}{250mm} + 1$



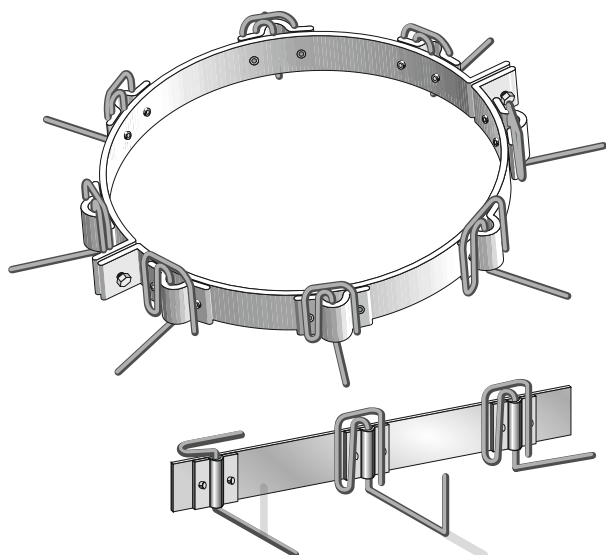
Product execution (types)	 <b>SB1</b> Bandage  <b>SB2</b> Bandage  <b>ESB1</b> Element  <b>ESB2</b> Element (straight)
Direction	Horizontal or Vertical for pipelines or tanks
Product diameter	According to the Customer's specification
Length of distance holders (insulation thickness)	According to the Customer's specification
Metal type of Ring	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Sizes cross-section of metal tape	2x30; 3x30; 2x40; 3x40 mm
Number of product segments	From 4x (360°) or more (depending on the diameter of the product and in accordance with the load).
Distance holders	Assortment // According to the technical task of the Customer.
Metal type of Paws	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Metal type of Springs	Stainless steel. 1.4310.
Metal type of pins	5-O-H steel; 65G steel; AISI 304 steel, etc. (According to the technical specification of the Customer).
Metal type of pin holders	Ordinary /galvanized steel (St3 / 08PS / 08KP / 09G2S); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9).
Metal type of hanging brackets	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Accessories	Assortment // According to the technical task of the Customer.
Mounting direction	They are installed radially directed.

Coupling Bandage	PIPEWOOL	SB1	08ПC	720	160	3	5	3x30	T1	P1
Product	Manufacturer brand	Bandage type	Metal type	Diameter D (mm)	Thermal insulation thickness (mm)	Number of elements (pieces)	Number of paws (pieces)	Ribbon cross section (mm)	Thermal padding	Type of holders insulation

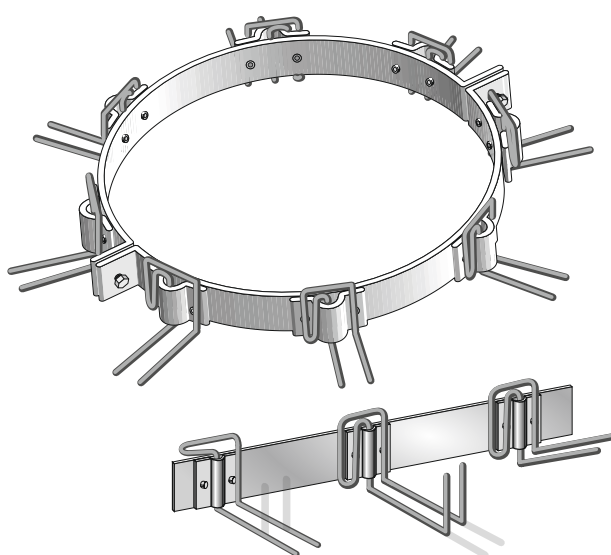


# COUPLING BANDAGE WITH DEVICES PIPEWOOL FOR FIXING THERMAL INSULATION ON DEVICES FOR VARIOUS PURPOSES

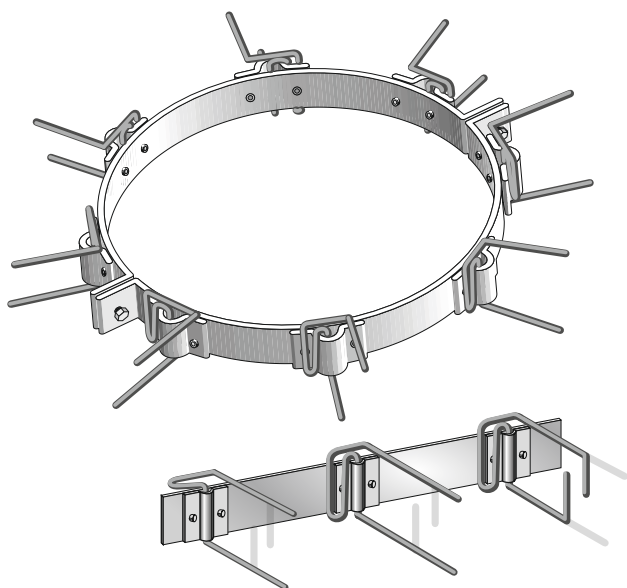
ARRANGEMENT OF SINGLE PINS DEVICES IN THE THERMAL INSULATION STRUCTURES OF THE TIE BAND WITHOUT WELDING OPERATIONS



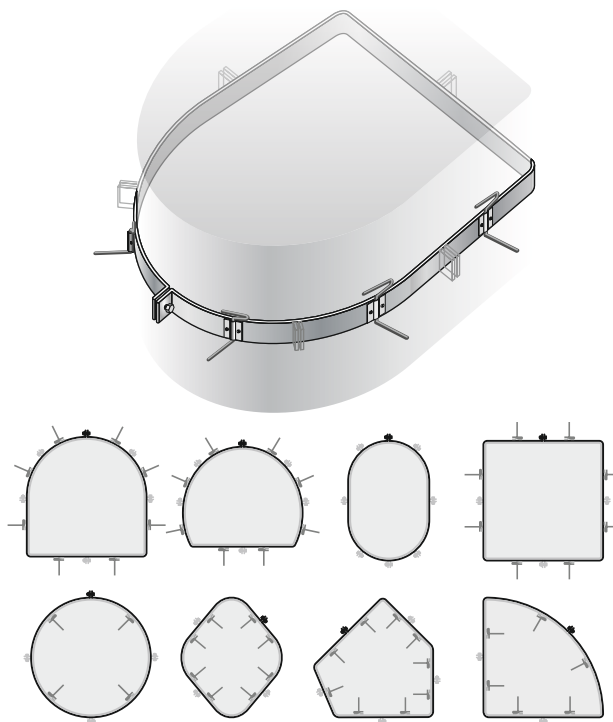
ARRANGEMENT OF DOUBLE PINS DEVICES IN THE THERMAL INSULATION STRUCTURES OF THE TIE BAND WITHOUT WELDING OPERATIONS



ARRANGEMENT OF DOUBLE PINS DEVICES IN THE THERMAL INSULATION STRUCTURES OF THE TIE BAND WITHOUT WELDING OPERATIONS

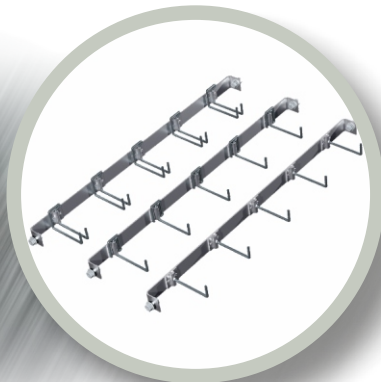
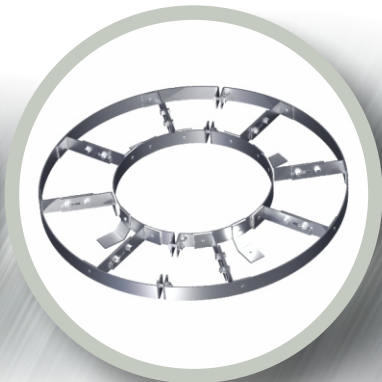
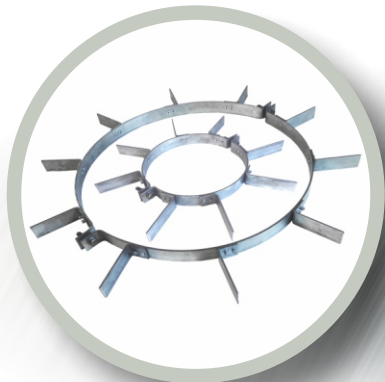


TYPES OF FORMS TAPES SUPPORT RINGS AND STRAPPING TAPE FOR BOXES AND DEVICES FOR VARIOUS PURPOSES WITHOUT WELDING



### Information about the customer.

Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



### Parameters of the Coupling bandage.

\* 000,00 - Fill it out & ☒ mark it.

Product execution (types)	SB1 <input type="checkbox"/> SB2 <input type="checkbox"/> ESB1 <input type="checkbox"/> ESB2 <input type="checkbox"/>
Direction	Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/>
Metal type of Bandage	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/> Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75 Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>
Sizes cross-section of metal tape	2x30 <input type="checkbox"/> mm 3x30 <input type="checkbox"/> mm 2x40 <input type="checkbox"/> mm 3x40 <input type="checkbox"/> mm
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm
Number of products (pcs)	of Elements of the support ring <input type="text"/> pcs (*from 4x on 360° or more) of Paws <input type="text"/> pcs
Length Paws (insulation thickness)	<input type="text"/> mm Insulation <input type="checkbox"/> - One layer <input type="checkbox"/> - Two layers

### Parameters of the Distance holders.

\* 000,00 - Fill it out & ☒ mark it.

Type of paws / springs	Type of paws <input type="text"/> Type of springs <input type="text"/> St.1.4310
Metal type of Paws	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/> Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75 Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm

### Parameters of the Pins.

\* 000,00 - Fill it out & ☒ mark it.

Type Pins	P1A <input type="checkbox"/> P1B <input type="checkbox"/> PS1A <input type="checkbox"/> PS1B <input type="checkbox"/> P2H <input type="checkbox"/> PS2 <input type="checkbox"/> P2VA <input type="checkbox"/> P2VB <input type="checkbox"/> PT <input type="checkbox"/>
Metal type of Pins	Steel 5-O-H <input type="checkbox"/> Steel 65G <input type="checkbox"/> Steel AISI 304 <input type="checkbox"/>
Type of pins holders	C1 Staple on welding <input type="checkbox"/> C2 Staple on rivets <input checked="" type="checkbox"/> B1 Sleeve on welding <input type="checkbox"/>
Metal type of pins holders	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> 09G2C <input type="checkbox"/> Other <input type="text"/> Stainless steel AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> Other <input type="text"/>
Washers	Without washer <input type="checkbox"/> Washer 50x50mm (hole Ø6mm) <input type="checkbox"/> Lock washer 50x50mm (hole Ø5mm) <input type="checkbox"/>

### Calculation of components.

\* 000,00 - Fill it out & ☒ mark it.

Number of rings SB	<input type="text"/> pcs (*formula N1)	<input type="text"/> pcs (*formula N1)
Number of ESB elements	<input type="text"/> pcs (*formula N2)	<input type="text"/> pcs (*formula N2)
Number of paws for SB	<input type="text"/> pcs (*formula N4-1)	<input type="text"/> pcs (*formula N4-1)
Number of pins for SB	SB1 <input type="text"/> pcs (*formula N4-1) ESB1 <input type="text"/> pcs (*formula N4-1) ESB2 <input type="text"/> pcs (*f.N4-3)	

#### Formula N1

$$N1 = \frac{L-L1-L2}{1000mm} + 1$$

#### Formula N2

$$N2 = \frac{D*3,14}{2500mm}$$

#### Formula N3

$$N3 = \frac{D*3,14}{500mm} + 1$$

#### Formula N4-1

$$N4 = \frac{D*3,14}{250mm} + 1$$

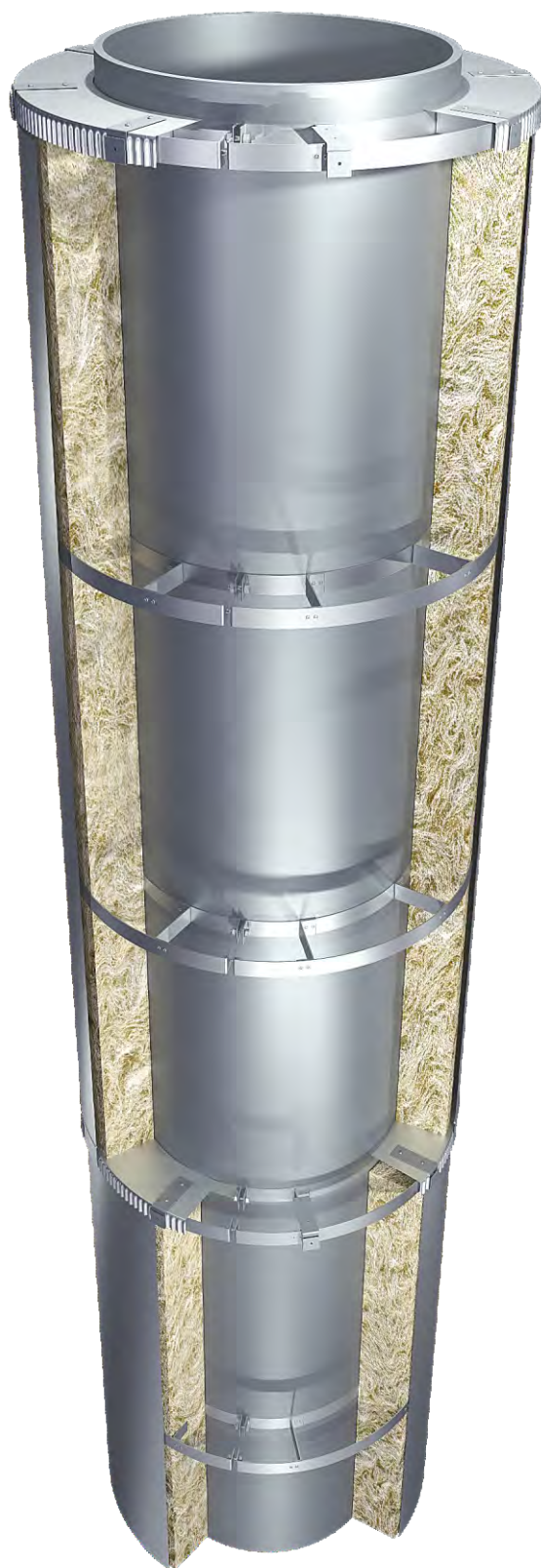
#### Formula N4-2






$$N4 = \frac{R*3,14}{250mm} + 1$$

#### Formula N4-3

$$N4 = \frac{2500mm}{250mm} + 1$$





Product execution (types)	    
Direction	Horizontal or Vertical for pipelines or tanks
Product diameter	According to the Customer's specification
Length of distance holders (insulation thickness)	According to the Customer's specification
Metal type of Ring	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Sizes cross-section of metal tape	2x30; 3x30; 2x40; 3x40 mm
Number of product segments	From 4x (360°) or more (depending on the diameter of the product and in accordance with the load).
Distance holders	Assortment // According to the technical task of the Customer.
Metal type of Paws	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Metal type of Springs	Stainless steel. 1.4310.
Metal type of pins	5-O-H steel; 65G steel; AISI 304 steel, etc. (According to the technical specification of the Customer).
Metal type of pin holders	Ordinary /galvanized steel (St3 / 08PS / 08KP / 09G2S); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9).
Metal type of hanging brackets	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Metal type & thickness of Diaphragm (mm)	Zn 0,50/0,55/0,80    Al 0,50/0,80 mm    St 0,50 mm
Number of segments Diaphragm (pcs)	1-4 pcs Depending on the diameter
Accessories	Assortment // According to the technical task of the Customer.
Mounting direction	They are installed radially directed.

Discharge	PIPEWOOL	RU2	St3	720	160	3	5	3x30	T1	L3	Cnd
Product	Manufacturer brand	Type of construction	Metal type	Diameter D (mm)	Thermal insulation thickness (mm)	Number of elements (pieces)	Number of paws (pieces)	Ribbon cross section (mm)	Thermal padding	Paws type	Hinged brackets type

Information about the customer.	
Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	
Parameters of the Discharge devices. <span style="float: right;">* 000,00 - Fill it out &amp; <input checked="" type="checkbox"/> mark it.</span>	
Product execution (types)	RU1 <input type="checkbox"/> Ru2 <input type="checkbox"/> ERU1 <input type="checkbox"/> ERU2 <input type="checkbox"/>
Direction	Horizontal <input type="checkbox"/> Vertical <input checked="" type="checkbox"/>
Metal type of Discharge devices	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/> Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75 Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>
Sizes cross-section of metal tape	2x30 <input type="checkbox"/> mm 3x30 <input type="checkbox"/> mm 2x40 <input type="checkbox"/> mm 3x40 <input type="checkbox"/> mm
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm
Number of products (pcs)	of Elements of the support ring <input type="text"/> pcs (*from 4x on 360° or more) of Paws <input type="text"/> pcs
Length Paws (insulation thickness)	<input type="text"/> mm Insulation <input type="checkbox"/> - One layer <input type="checkbox"/> - Two layers
Parameters of the Diaphragm. <span style="float: right;">* 000,00 - Fill it out &amp; <input checked="" type="checkbox"/> mark it.</span>	
Diameter D (mm)	External diameter D1 <input type="text"/> mm Diameter D2 of the hole for the pipeline <input type="text"/> mm
Number of segments (pcs)	<input type="text"/> pcs
Connections at the edges (ridges)	No sidewall <input type="checkbox"/> Edge with closed ridges <input type="checkbox"/> Corrugated sidewall (width according to GOST) <input type="checkbox"/>
Metal type & thickness (mm)	Zn galvanized steel <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,55 mm <input type="checkbox"/> 0,80 mm Al Aluminum <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm St Stainless steel <input type="checkbox"/> 0,50 mm
Design requirements	Overlap <input type="text"/> mm add <input type="text"/>
Coloring	yes <input type="checkbox"/> no <input type="checkbox"/> Color <input type="text"/>
Shell fastenings	Self-tapping screw <input type="checkbox"/> Exhaust rivet <input type="checkbox"/> Bandage with a buckle <input type="checkbox"/>
Parameters of the Hanging brackets. <span style="float: right;">* 000,00 - Fill it out &amp; <input checked="" type="checkbox"/> mark it.</span>	
Hanging bracket type	Cnd (for diaphragm) <input type="checkbox"/> Cnt (for the upper bottom of vertical apparatus) <input type="checkbox"/> Cnb (for the lower bottom of vertical apparatus) <input type="checkbox"/> Cnf (for suspended, semi-container) <input type="checkbox"/>
Metal type	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/> Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75 Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>
Cross-section of the metal tape	0,7x27mm <input type="checkbox"/> 0,8x27mm <input type="checkbox"/> 0,8x50mm <input type="checkbox"/> 1,0x27mm <input type="checkbox"/> 1,0x28mm <input type="checkbox"/> 1,0x30mm <input type="checkbox"/> 1,0x50mm <input type="checkbox"/>
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm
Parameters of the Distance holders. <span style="float: right;">* 000,00 - Fill it out &amp; <input checked="" type="checkbox"/> mark it.</span>	
Type of paws / springs	Type of paws <input type="text"/> Type of springs <input type="text"/> St.1.4310
Metal type of Paws	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/> Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75 Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm
Parameters of the Pins. <span style="float: right;">* 000,00 - Fill it out &amp; <input checked="" type="checkbox"/> mark it.</span>	
Type Pins	P1A <input type="checkbox"/> P1B <input type="checkbox"/> PS1A <input type="checkbox"/> PS1B <input type="checkbox"/> P2H <input type="checkbox"/> PS2 <input type="checkbox"/> P2VA <input type="checkbox"/> P2VB <input type="checkbox"/> PT <input type="checkbox"/>
Metal type of Pins	Steel 5-O-H <input type="checkbox"/> Steel 65G <input type="checkbox"/> Steel AISI 304 <input type="checkbox"/>
Type of pins holders	C1 Staple on welding <input type="checkbox"/> C2 Staple on rivets <input checked="" type="checkbox"/> B1 Sleeve on welding <input type="checkbox"/>
Metal type of pins holders	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> 09G2C <input type="checkbox"/> Other <input type="text"/> Stainless steel AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> Other <input type="text"/>
Washers	Without washer <input type="checkbox"/> Washer 50x50mm (hole Ø6mm) <input type="checkbox"/> Lock washer 50x50mm (hole Ø5mm) <input type="checkbox"/>
Calculation of components. <span style="float: right;">* 000,00 - Fill it out &amp; <input checked="" type="checkbox"/> mark it.</span>	
Number of rings RU	<input type="text"/> pcs (*formula N1)
Number of ERU elements	<input type="text"/> pcs (*formula N2)
Number of hanging brackets	<input type="text"/> From 4x (360°) or more (depending on the diameter of the product and in accordance with the load).
Number of paws for RU	<input type="text"/> pcs (*formula N3)
Number of pins for SB	SB1 <input type="text"/> pcs (*formula N4-1) ESB1 <input type="text"/> pcs (*formula N4-1) ESB2 <input type="text"/> pcs (*f.N4-3)

**Formula N1**

$$N1 = \frac{L-L1-L2}{1000mm} + 1$$

**Formula N2**

$$N2 = \frac{D*3,14}{2500mm}$$

**Formula N3**

$$N3 = \frac{D*3,14}{500mm} + 1$$

**Formula N4-1**

$$N4 = \frac{D*3,14}{250mm} + 1$$

**Formula N4-2**

$$N4 = \frac{R*3,14}{250mm} + 1$$

**Formula N4-3**

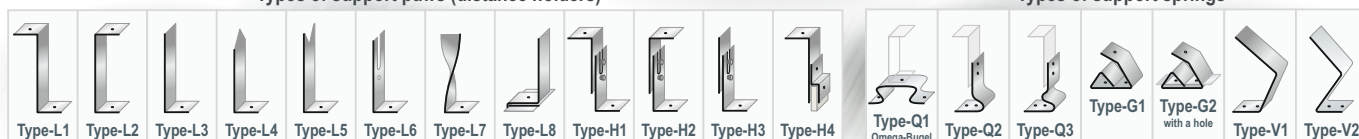
$$N4 = \frac{2500mm}{250mm} + 1$$





Types of support paws (distance holders)

Types of support springs



Types of support paws and springs	!	According to the Customer's specification
Metal type of Paws	K	Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
Metal type of Springs	K	Stainless steel 1.4310.
Sizes cross-section of metal tape	↕	2x30; 3x30; 2x40; 3x40 mm
Length of distance holders (insulation thickness)	↔	According to the Customer's specification
Number of paws/springs (according to the circumference)	⊙	From 4x (360°) or more (depending on the diameter of the product and in accordance with the load). The installation step on the support rings is ≈500mm. The installation step on the Binding band (Unloading device) is ≈250mm.
Accessories	⚙	Assortment // According to the technical task of the Customer.
Mounting direction	↻	They are installed directed.

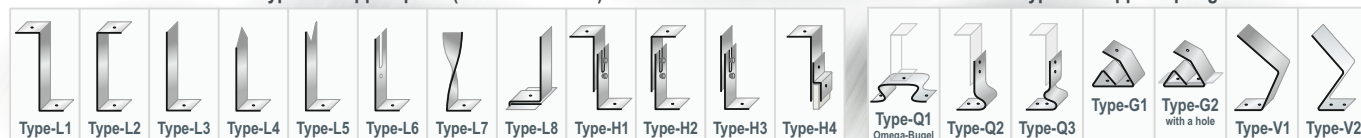
### Information about the customer.

Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



Types of support paws (distance holders)

Types of support springs



Parameters of the Distance holders.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Types of support paws	L1 <input type="checkbox"/> L2 <input type="checkbox"/> L3 <input type="checkbox"/> L4 <input type="checkbox"/> L5 <input type="checkbox"/> L6 <input type="checkbox"/> L7 <input type="checkbox"/> L8 <input type="checkbox"/> H1 <input type="checkbox"/> H2 <input type="checkbox"/> H3 <input type="checkbox"/> H4 <input type="checkbox"/>		
Metal type of Paws	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> 09G2C <input type="checkbox"/> Other <input type="text"/>		
	Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75 <input type="checkbox"/>		
	Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="checkbox"/>		
Sizes cross-section of metal tape	2x30 <input type="checkbox"/> mm 3x30 <input type="checkbox"/> mm 2x40 <input type="checkbox"/> mm 3x40 <input type="checkbox"/> mm		
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm		
Types of support springs / Metal type	Q1 <input type="checkbox"/> Q2 <input type="checkbox"/> Q3 <input type="checkbox"/> G1 <input type="checkbox"/> G2 <input type="checkbox"/> V1 <input type="checkbox"/> V2 <input type="checkbox"/> (St.1.4310 / Analogue)		
Length Paws (insulation thickness)	<input type="text"/> mm Insulation <input type="checkbox"/> - One layer <input type="checkbox"/> - Two layers		
Number of products (pcs)	<input type="text"/> pcs		

Calculation of components.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Number of support rings KO	<input type="text"/> pcs (*formula N1)	<input type="text"/> pcs (*formula N1)	
Number of EKO elements	<input type="text"/> pcs (*formula N2)	<input type="text"/> pcs (*formula N2)	
Number of paws for KO	<input type="text"/> pcs (*formula N3)	<input type="text"/> pcs (*formula N3)	
Number of springs for SB	SB1 <input type="text"/> pcs (*formula N4-1) ESB1 <input type="text"/> pcs (*formula N4-1) ESB2 <input type="text"/> pcs (*f.N4-3)		

Formula N1	Formula N2	Formula N3	Formula N4-1	Formula N4-2
$N1 = \frac{L}{1000mm} + 1$	$N2 = \frac{D \cdot 3,14}{2500mm}$	$N3 = \frac{D \cdot 3,14}{500mm} + 1$	$N4 = \frac{D \cdot 3,14}{250mm} + 1$	$N4 = \frac{R \cdot 3,14}{250mm} + 1$

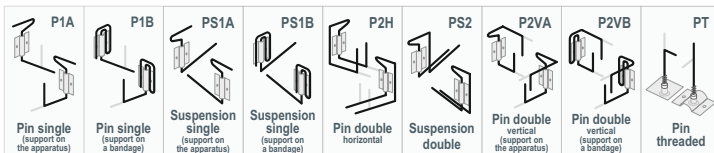


## DEVICES FOR FIXING THERMAL INSULATION ON DEVICES AND TANKS

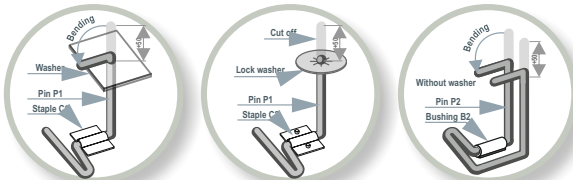


For fixing the main thermal insulation layer on devices and tanks, we have developed and improved existing structures made of single P1 and double P2 pins (GOST 17314-81), the production of which is carried out on automatic CNC lines made of wire steel with a diameter of 5 mm.

Fastening with pins is less labor-intensive and less expensive than with clamps and is used to isolate devices with a diameter of 500 mm, of various heights and lengths.



The methods of fixing the insulation depend on whether welding is allowed on the insulation surface. If welding is possible, the pins are welded to the insulated surface or installed in pre-welded brackets C1 or bushings V1, and if it is impossible to carry out welding work, the pins are attached to tie bands using special brackets C2 fixed to the bandage with the help of exhaust rivets, or, use threaded pins SHR screwed into threaded rivets placed on the bandage.



The thermal insulation material is impaled on the pins, after which the outer end of the pin must be bent at a distance of the insulation thickness. It is possible to use the attachment to the pin with a washer or a locking washer, which, when put on the pin, tightly press the thermal insulation layer to the insulated surface. When using a washer, the outer end of the pin is bent, and when using a locking washer, the excess part of it is cut off.

Removable parts, suspension pins (single PS1, double PS2 or threaded PS), are installed at the installation site of thermal insulation in the following ways:

- Welded directly to the wall of the device or pipeline;
- Into bushings or staples previously welded to the wall of the device or pipeline;
- Into the brackets attached to the tie band with the help of exhaust rivets;
- Into the threaded rivets attached «on the tie band.

Types of pins used for fixing insulation, their placement on the surface depends on the thickness of the insulation.

### TECHNICAL CHARACTERISTICS OF PINS FOR FIXING THERMAL INSULATION

Pin designations	Pin Length (mm)	Product dimensions (mm)	Weight (kg)
P1/60 (single); PS1/60	150	180	0,028
P1/100 (single); PS1/100	190	220	0,034
P2/50 (double); PS2/50	150	331	0,051
P2/100 (double); PS2/100	200	431	0,067
P2/160 (double); PS2/160	260	551	0,085
P2/200 (double); PS2/200	300	631	0,098
P2/250 (double); PS2/250	360	751	0,120

\* The dimensions of the pins are regulated according to GOST 17314-81.

The length of the pins is used in such a way that its length exceeds the thickness of the thermal insulation by 50 mm.

The number of pins required for mounting depends on the installation step of the pins and the location of the insulation surface.

### PIN INSTALLATION STEP (mm)

Pin installation location	The step direction	
	Vertical	Horizontal
Vertical equipment	500	250
Horizontal cylindrical equipment: ↑ Upper half ↓ Lower half	500	500
	250	500
Horizontal surfaces: ↑ From above ↓ From below	500	500
	250	500

The thermal insulation layers on the devices and tanks are fixed with pins, observing the following steps:

- On vertical sections, a step is set through 250 mm horizontally and 500 mm vertically.
- On horizontal lines in all directions through 500 mm, in the lower part along the circumference, the step is made equal to 250 mm, in the upper part along the circumference equal to 500 mm.
- On the bottoms of vertical and horizontal apparatuses and tanks with a diameter of more than 1 m, a step along the circumference through 250 mm, the diameter of the first circle is made 800 mm, each subsequent increases by 1000 mm.

### EXAMPLES OF A CONDITIONAL DESIGNATION

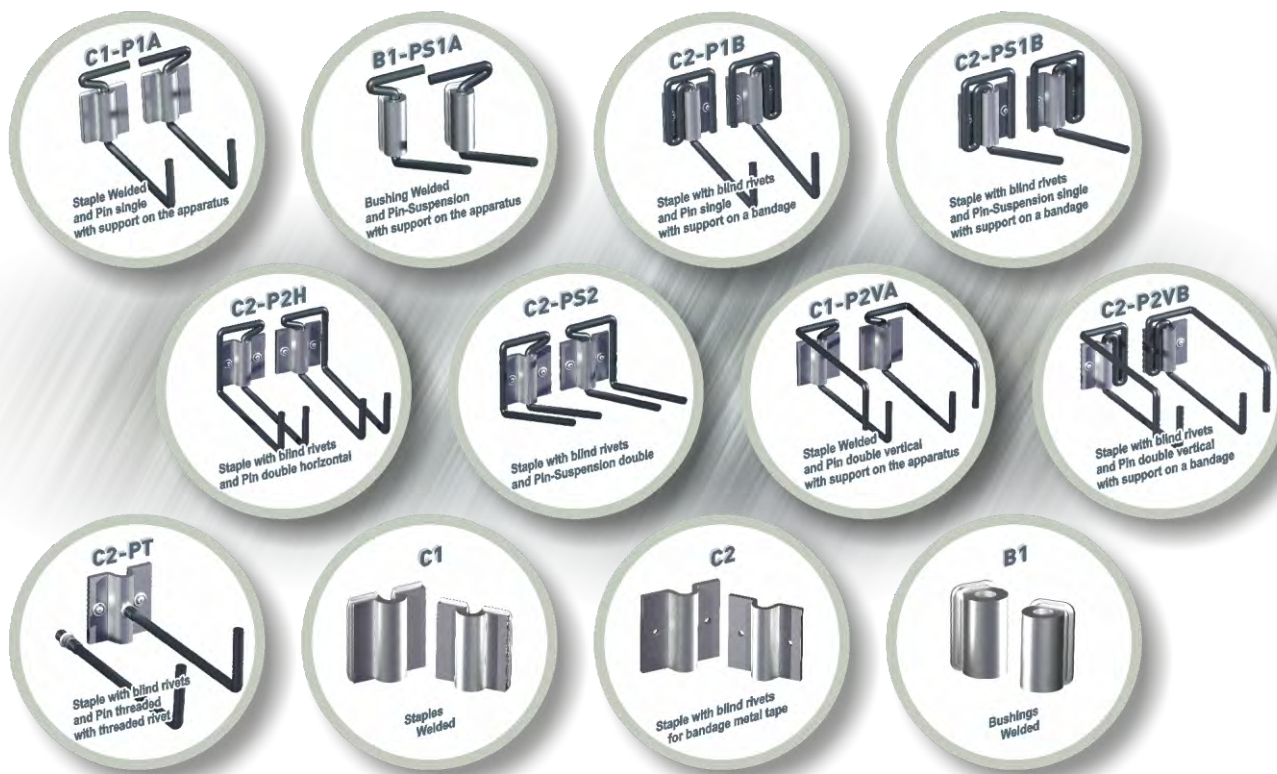
P1/60 GOST 17314-81-Single pin P1; insulation thickness up to 60mm  
 P1/100 GOST 17314-81-Single pin P1; insulation thickness up to 100mm  
 P2/50 GOST 17314-81-Double pin P2; insulation thickness up to 50mm  
 P2/100 GOST 17314-81-Double pin P2; insulation thickness up to 100mm  
 P2/160 GOST 17314-81-Double pin P2; insulation thickness up to 160mm  
 P2/200 GOST 17314-81-Double pin P2; insulation thickness up to 200mm  
 P2/250 GOST 17314-81-Double pin P2; insulation thickness up to 250mm

PS1/60 GOST 17314-81-Pin-suspension single PS1; insulation thickness up to 60mm  
 PS1/100 GOST 17314-81-Pin-suspension single PS1; insulation thickness up to 100mm  
 PS2/50 GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 50mm  
 PS2/100 GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 100mm  
 PS2/160 GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 160mm  
 PS2/200 GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 200mm  
 PS2/250 GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 250mm

C1 GOST 17314-81-Welded bracket (attached to the device)  
 C2 GOST 17314-81-Rivet bracket (attached to a bandage)  
 B1 GOST 17314-81-Welded bushing (attached to the device)

### EXAMPLES OF CONDITIONAL DESIGNATION OF DEVICES

C1-P1/60 GOST 17314-81  
 (Welded bracket C1; single pin P1; insulation thickness up to 60mm)  
 C1-P2/160 GOST 17314-81  
 (Welded bracket C1; double pin P2; insulation thickness up to 160mm)  
 C2-P1/100 GOST 17314-81  
 (Bracket for bandage C2; single pin P1; insulation thickness up to 100mm)  
 C2-P1/160 GOST 17314-81  
 (Bracket for bandage C2; single pin P1; insulation thickness up to 160mm)  
 B1-PS1/160 GOST 17314-81  
 (Welded bushing B1; pin-suspension single PS1; insulation thickness up to 160mm)  
 B1-PS2/100 GOST 17314-81  
 (Welded bushing B1; pin-suspension double PS2; insulation thickness up to 100mm)



Type pins and holders of pins	!	In the Assortment // According to the technical task of the Customer.
Metal type of pins	Ⓚ	5-O-H steel; 65G steel; AISI 304 steel, etc. (According to the Customer's technical specification)
The length of the pins	↔	The thickness of the thermal insulation + 50 mm. (According to the Customer's technical specification)
Number of pins (along the circumference)	⊙	From 4x (360°) or more (depending on the diameter of the product and in accordance with the load). The installation step on the Tie band (Unloading device) is ≈250mm.
Metal type of pin holders	Ⓚ	Ordinary /galvanized steel (St3 / 08PS / 08KP / 09G2C); Stainless steel (AISI 301; AISI 304; AISI 403; 12X18H9).
Accessories	Ⓚ	In the Assortment // According to the technical task of the Customer.
Mounting direction	↻	They are installed directionally.

#### EXAMPLES OF A CONDITIONAL DESIGNATION

**P1/60** GOST 17314-81-Single pin P1; insulation thickness up to 60mm  
**P1/100** GOST 17314-81-Single pin P1; insulation thickness up to 100mm  
**P2/50** GOST 17314-81-Double pin P2; insulation thickness up to 50mm  
**P2/100** GOST 17314-81-Double pin P2; insulation thickness up to 100mm  
**P2/160** GOST 17314-81-Double pin P2; insulation thickness up to 160mm  
**P2/200** GOST 17314-81-Double pin P2; insulation thickness up to 200mm  
**P2/250** GOST 17314-81-Double pin P2; insulation thickness up to 250mm

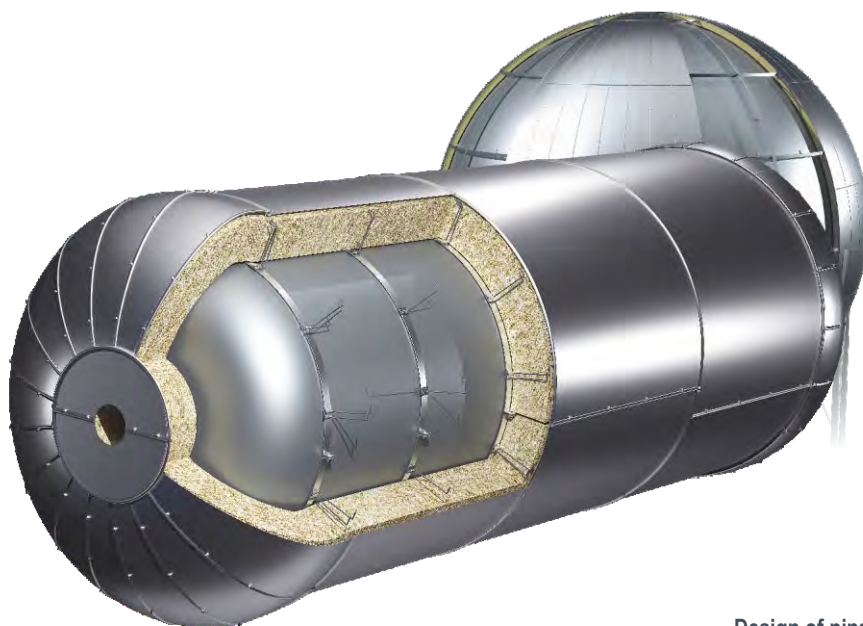
**PS1/60** GOST 17314-81-Pin-suspension single PS1; insulation thickness up to 60mm  
**PS1/100** GOST 17314-81-Pin-suspension single PS1; insulation thickness up to 100mm  
**PS2/50** GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 50mm  
**PS2/100** GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 100mm  
**PS2/160** GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 160mm  
**PS2/200** GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 200mm  
**PS2/250** GOST 17314-81-Pin-suspension double PS2; insulation thickness up to 250mm

**C1** GOST 17314-81-Welded bracket (attached to the device)  
**C2** GOST 17314-81-Rivet bracket (attached to a bandage)  
**B1** GOST 17314-81-Welded bushing (attached to the device)

#### EXAMPLES OF CONDITIONAL DESIGNATION OF DEVICES

**C1-P1/60** GOST 17314-81  
(Welded bracket C1; single pin P1; insulation thickness up to 60mm)  
**C1-P2/160** GOST 17314-81  
(Welded bracket C1; double pin P2; insulation thickness up to 160mm)  
**C2-P1/100** GOST 17314-81  
(Bracket for bandage C2; single pin P1; insulation thickness up to 100mm)  
**C2-P1/160** GOST 17314-81  
(Bracket for bandage C2; single pin P1; insulation thickness up to 160mm)  
**C2-P1/200** GOST 17314-81  
(Bracket for bandage C2; single pin P1; insulation thickness up to 200mm)  
**C2-P1/250** GOST 17314-81  
(Bracket for bandage C2; single pin P1; insulation thickness up to 250mm)  
**B1-PS1/160** GOST 17314-81  
(Welded bushing B1; pin-suspension single PS1; insulation thickness up to 160mm)  
**B1-PS2/100** GOST 17314-81  
(Welded bushing B1; pin-suspension double PS2; insulation thickness up to 100mm)  
**B1-PS2/200** GOST 17314-81  
(Welded bushing B1; pin-suspension double PS2; insulation thickness up to 200mm)





Design of pins and devices PIPEWOOL

Pin single (support on the apparatus)	Pin single (support on a bandage)	Suspension single (support on the apparatus)	Suspension single (support on a bandage)	Pin double horizontal	Suspension double	Pin double vertical (support on the apparatus)	Pin double vertical (support on a bandage)	Pin threaded

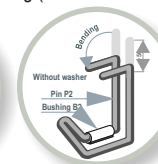
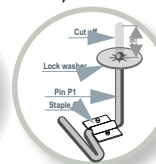
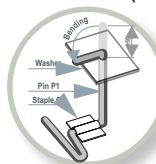
Type pins and holders of pins	⚠	In the Assortment // According to the technical task of the Customer.
Metal type of pins	Ⓚ	5-O-H steel; 65G steel; AISI 304 steel, etc. (According to the Customer's technical specification)
The length of the pins	📏	The thickness of the thermal insulation + 50 mm. (According to the Customer's technical specification)
Number of pins (along the circumference)	🔄	From 4x (360°) or more (depending on the diameter of the product and in accordance with the load). The installation step on the Tie band (Unloading device) is ≈250mm.
Metal type of pin holders	Ⓚ	Ordinary /galvanized steel (St3 / 08PS / 08KP / 09G2C); Stainless steel (AISI 301; AISI 304; AISI 403; 12X18H9).
Accessories	🔧	In the Assortment // According to the technical task of the Customer.
Mounting direction	🔄	They are installed directionally.

#### EXAMPLES OF THE CONDITIONAL DESIGNATION OF PINS

**P1A/60 GOST 17314-81 (St. 5-O-H)**  
• Single pin (support on the device); insulation thickness up to 60mm  
**P1B/100 GOST 17314-81 (St. 65G)**  
• Single pin (support on the bandage); the thickness of the thermal insulation is up to 100mm  
**PS1A/60 GOST 17314-81 (St. AISI 304)**  
• Single pin suspension (support on the device); insulation thickness up to 60mm  
**PS1B/100 GOST 17314-81 (St. 5-O-H)**  
• Single pin-Suspension (support on the bandage); the thickness of the thermal insulation is up to 100 mm  
**P2G/200 GOST 17314-81 (St. 5-O-H)**  
• Double horizontal pin; insulation thickness up to 200mm  
**PS2/160 GOST 17314-81 (St. 65G)**  
• Double pin suspension; insulation thickness up to 160mm  
**P2VA/100 GOST 17314-81 (St. 5-O-H)**  
• Double vertical pin (support on the device); thermal insulation thickness up to 100 mm  
**P2VB/160 GOST 17314-81 (St. AISI 304)**  
• Double vertical pin (support on the bandage); insulation thickness up to 160mm  
**PT/60 GOST 17314-81 (St. 5-O-H)**  
• Threaded pin; insulation thickness up to 60mm

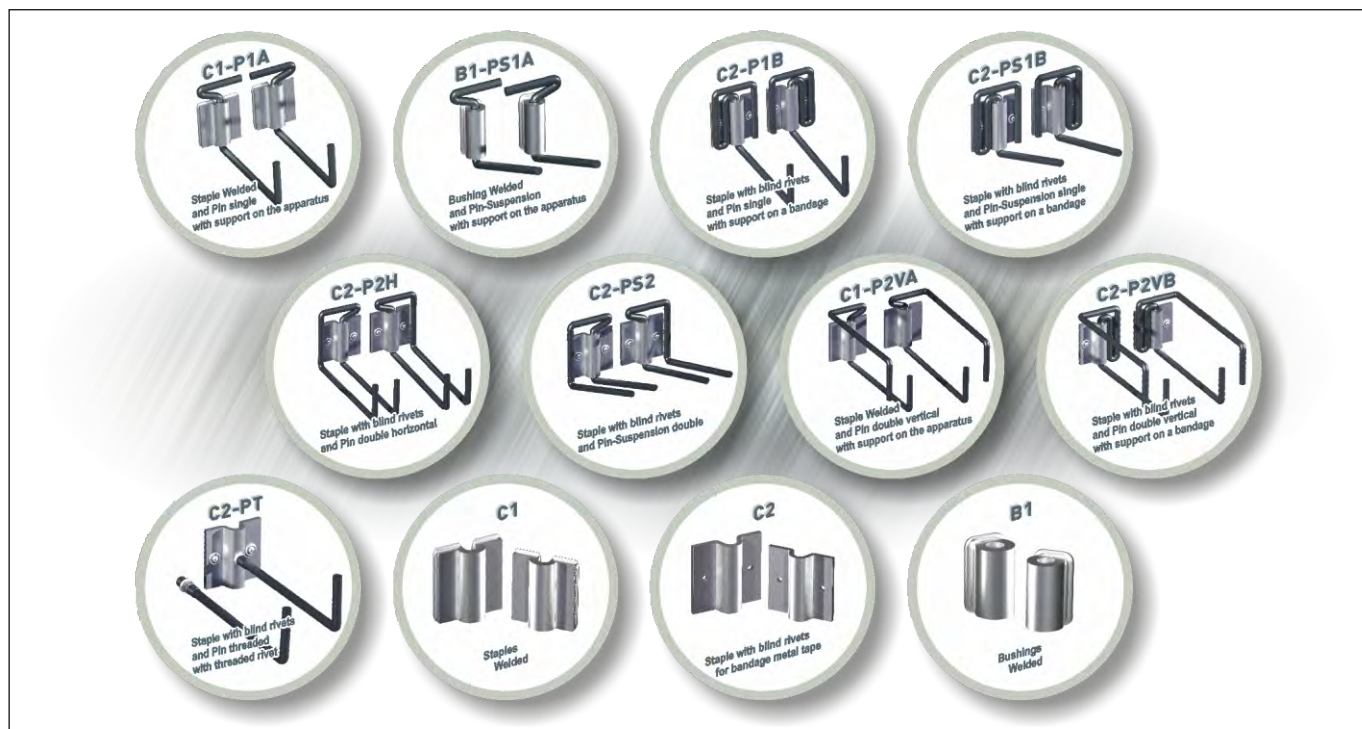
#### EXAMPLES OF CONDITIONAL DESIGNATION OF BRACKETS

**C1 GOST 17314-81 (St. AISI 304)** • Welded bracket (attached to the device)  
**C1 GOST 17314-81 (St. 08PS)** • Welded bracket (attached to the device)  
**C1 GOST 17314-81 (St. 08KP)** • Welded bracket (attached to the device)  
**C1 GOST 17314-81 (St. AISI 403)** • Welded bracket (attached to the device)  
**C2 GOST 17314-81 (St. 08PS)** • A bracket on rivets (attached to a bandage)  
**C2 GOST 17314-81 (St. 08KP)** • A bracket on rivets (attached to a bandage)  
**C2 GOST 17314-81 (St. AISI 301)** • Bracket on rivets (attached to a bandage)  
**C2 GOST 17314-81 (St. AISI 403)** • Bracket on rivets (attached to a bandage)  
**B1 GOST 17314-81 (St. 09G2S)** • Welded bushing (attached to the device)  
**B1 GOST 17314-81 (St. 12X18H9)** • Welded bushing (attached to the device)



**CUSTOMER SURVEY SHEET # \_\_\_\_\_**

Information about the customer.	
Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



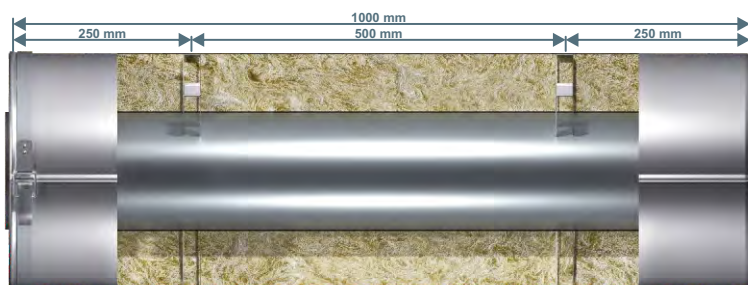
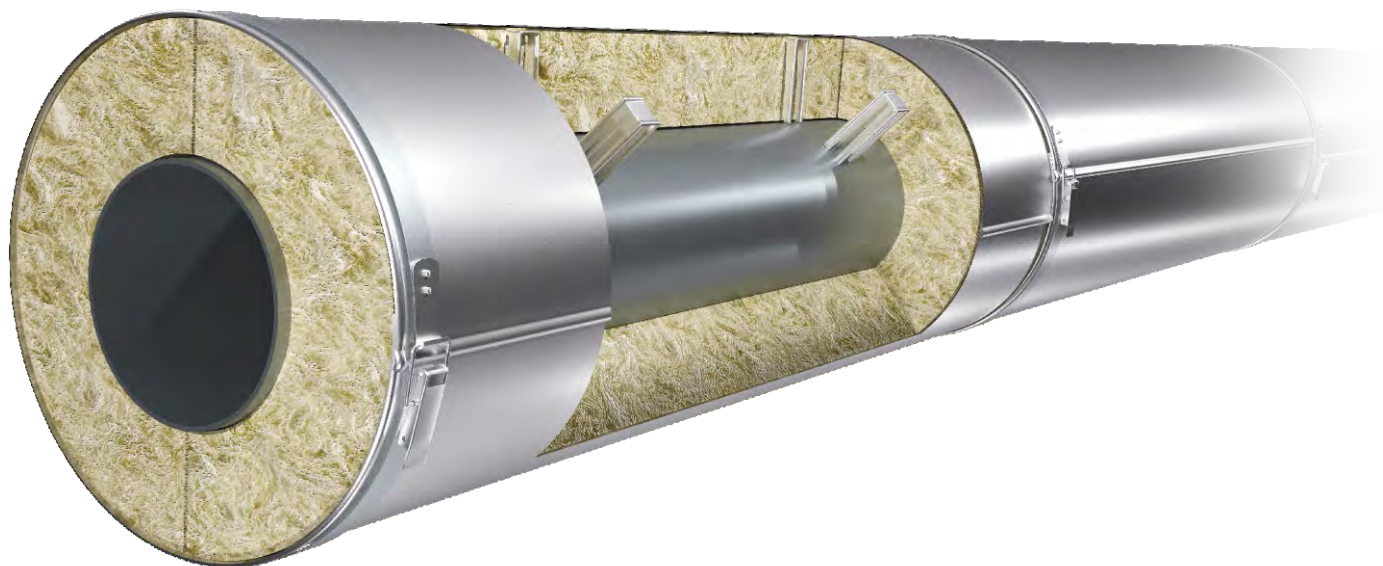
Parameters of the Pins.		* 000.00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Type Pins	P1A <input type="checkbox"/> P1B <input type="checkbox"/> PS1A <input type="checkbox"/> PS1B <input type="checkbox"/> P2H <input type="checkbox"/> PS2 <input type="checkbox"/> P2VA <input type="checkbox"/> P2VB <input type="checkbox"/> PT <input type="checkbox"/>		
Metal type of Pins	Steel 5-O-H <input type="checkbox"/> Steel 65G <input type="checkbox"/> Steel AISI 304 <input type="checkbox"/>		
Length Pins (insulation thickness)	<input type="text"/> mm Insulation <input type="checkbox"/> - One layer <input type="checkbox"/> - Two layers		
Type of pins holders	C1 Staple on welding <input type="checkbox"/> C2 Staple on rivets <input checked="" type="checkbox"/> B1 Sleeve on welding <input type="checkbox"/>		
Metal type of pins holders	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> 09G2C <input type="checkbox"/> Other <input type="text"/> Stainless steel AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> Other <input type="text"/>		
Washers	Without washer <input type="checkbox"/> Washer 50x50mm (hole Ø6mm) <input type="checkbox"/> Lock washer 50x50mm (hole Ø5mm) <input type="checkbox"/>		

Calculation of components.		* 000.00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Number of support rings KO *	<input type="text"/> pcs (*formula N1)	<input type="text"/> pcs (*formula N1)	
Number of EKO elements	<input type="text"/> pcs (*formula N2)	<input type="text"/> pcs (*formula N2)	
Number of paws for KO	<input type="text"/> pcs (*formula N3)	<input type="text"/> pcs (*formula N3)	
Number of rings SB1	<input type="text"/> pcs (*formula N4-1)	<input type="text"/> pcs (*formula N4-1)	
Number of rings ESB1	<input type="text"/> pcs (*formula N4-2)	<input type="text"/> pcs (*formula N4-2)	
Number of rings ESB2	<input type="text"/> pcs (*formula N4-3)	<input type="text"/> pcs (*formula N4-3)	
Number of rings on the tank *	<input type="text"/> pcs (*formula N5H)	<input type="text"/> pcs (*formula N5U)	

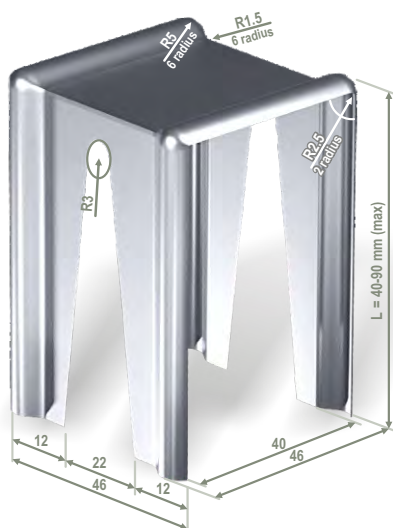
<b>Formula N1</b> $N1 = \frac{L-L1-L2}{1000mm} + 1$	<b>Formula N2</b> $N2 = \frac{D*3,14}{2500mm}$	<b>Formula N3</b> $N3 = \frac{D*3,14}{500mm} + 1$	<b>Formula N4-1</b> $N4 = \frac{D*3,14}{250mm} + 1$	<b>Formula N4-2</b> $N4 = \frac{R*3,14}{250mm} + 1$	<b>Formula N4-3</b> $N4 = \frac{2500mm}{250mm} + 1$
<b>Formula N5H</b> $N5H = (2L+1)*D*3,14*3$		<b>Formula N5U</b> $N5U = (2L+1)*D*3,14*3$			

\* See the drawings on the page [Capacitive tanks].





## PIPEWOOL - STAPLES SUPPORTING FOR PIPELINE THERMAL INSULATION STRUCTURES



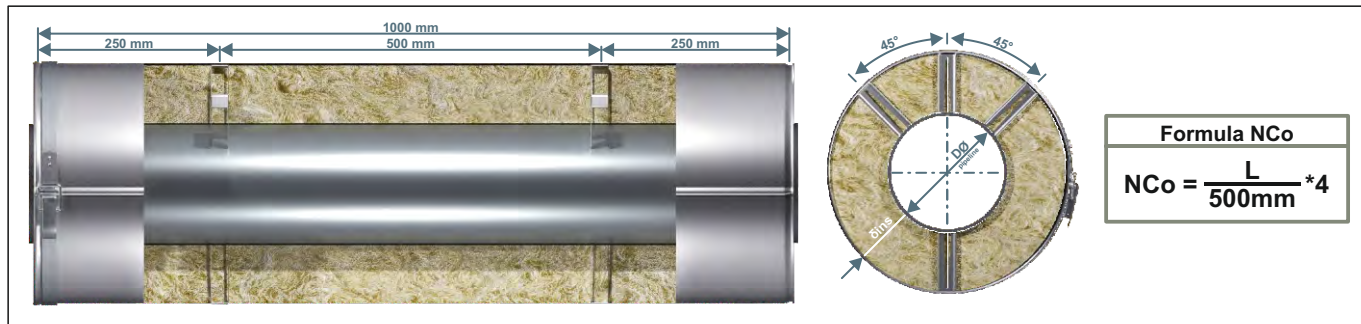
Bracket length (mm) / Insulation thickness (δins)	↔	90 / 80 / 70 / 60 / 50 / 40 mm
Metal type & thickness (mm)	↓	Zn 0,50/0,80 mm    Al 0,50/0,80/1,00 mm
Accessories	⚙	Assortment (According to the technical task of the Customer)
Installation features	⚙	They are installed radially
Destiny	📅	To increase the service life of the thermal insulation layer in fully assembled complete structures with a metal protective coating. They contribute to the unloading of the metal coating from gravity.

Co	PIPEWOOL	Al	60	050
Product type	Manufacturer brand	Metal type	Thermal insulation thickness (mm)	Metal thickness (mm)
Co	PIPEWOOL	Zn	90	080
Product type	Manufacturer brand	Metal type	Thermal insulation thickness (mm)	Metal thickness (mm)

## CUSTOMER SURVEY SHEET # \_\_\_\_\_

### Information about the customer.

Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



Product A		Parameters of the support brackets.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Metal type of support bracket	Zn galvanized steel <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm Al Aluminum <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm <input type="checkbox"/> 1,00 mm				
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm				
Bracket length (mm)	Length <input type="text"/> mm Insulation thickness <input type="text"/> δins				
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm				
Number of brackets	<input type="text"/> pcs (*Formula NCo)				

Product B		Parameters of the support brackets.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Metal type of support bracket	Zn galvanized steel <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm Al Aluminum <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm <input type="checkbox"/> 1,00 mm				
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm				
Bracket length (mm)	Length <input type="text"/> mm Insulation thickness <input type="text"/> δins				
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm				
Number of brackets	<input type="text"/> pcs (*Formula NCo)				

Product C		Parameters of the support brackets.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Metal type of support bracket	Zn galvanized steel <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm Al Aluminum <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm <input type="checkbox"/> 1,00 mm				
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm				
Bracket length (mm)	Length <input type="text"/> mm Insulation thickness <input type="text"/> δins				
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm				
Number of brackets	<input type="text"/> pcs (*Formula NCo)				

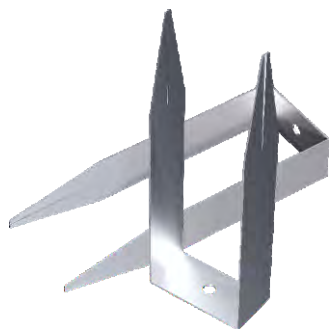
Product D		Parameters of the support brackets.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Metal type of support bracket	Zn galvanized steel <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm Al Aluminum <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm <input type="checkbox"/> 1,00 mm				
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm				
Bracket length (mm)	Length <input type="text"/> mm Insulation thickness <input type="text"/> δins				
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm				
Number of brackets	<input type="text"/> pcs (*Formula NCo)				

Product E		Parameters of the support brackets.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Metal type of support bracket	Zn galvanized steel <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm Al Aluminum <input type="checkbox"/> 0,50 mm <input type="checkbox"/> 0,80 mm <input type="checkbox"/> 1,00 mm				
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm				
Bracket length (mm)	Length <input type="text"/> mm Insulation thickness <input type="text"/> δins				
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm				
Number of brackets	<input type="text"/> pcs (*Formula NCo)				





**PIPEWOOL - BRACKET for thermal insulation of boxes**



U-shaped bracket



L-shaped bracket

Bracket length / Insulation thickness (mm)	According to the Customer's TOR	
Metal type & thickness (mm)	Zn 0,80 mm	Al 0,50/0,80 mm
Width of the metal tape (mm)	According to GOST or the Customer's technical specification	
Accessories	Assortment (According to the technical task of the Customer)	
Installation features	They are installed radially	
Destiny	To increase the service life of the thermal insulation layer in fully assembled complete structures with a metal protective coating. They contribute to the unloading of the metal coating from gravity.	

<b>CkU</b> Product type	<b>PIPEWOOL</b> Manufacturer brand	<b>Al</b> Metal type	<b>100</b> Thermal insulation thickness (mm)	<b>050</b> Metal thickness (mm)
<b>CkL</b> Product type	<b>PIPEWOOL</b> Manufacturer brand	<b>Zn</b> Metal type	<b>80</b> Thermal insulation thickness (mm)	<b>080</b> Metal thickness (mm)

**CUSTOMER SURVEY SHEET # \_\_\_\_\_**

Information about the customer.	
Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



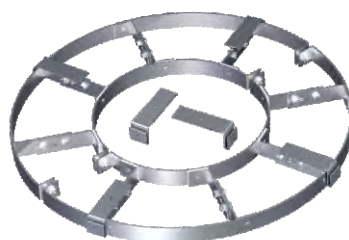
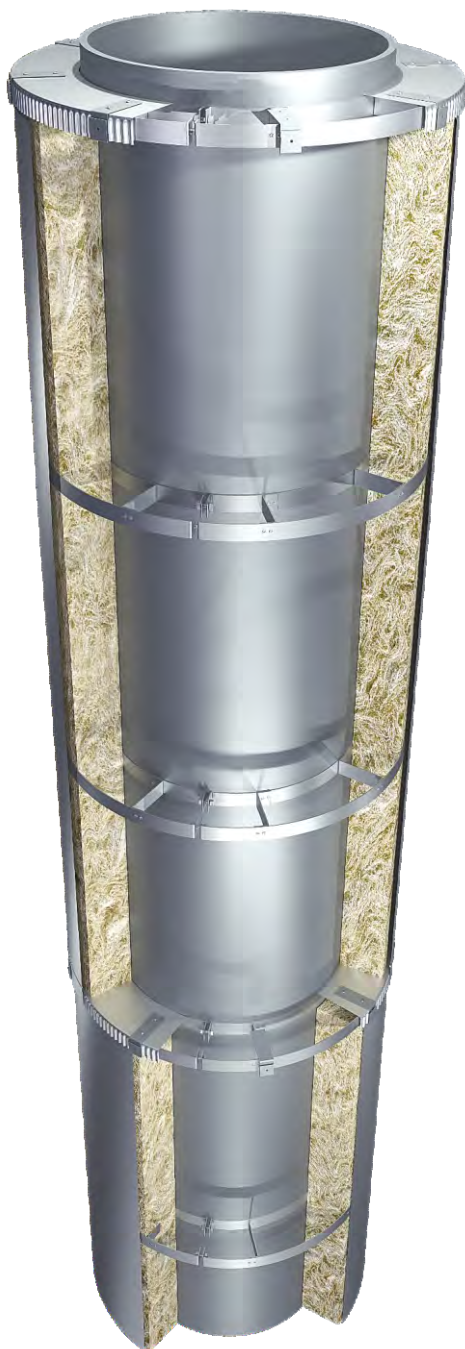
Product A		General Parameters.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Type bracket	U-shaped bracket <input type="checkbox"/> L-shaped bracket <input type="checkbox"/>				
Metal type & thickness (mm)	Zn Galvanized steel <input type="checkbox"/> 0,80 mm	Al Aluminum <input type="checkbox"/> 0,80 mm	<input type="checkbox"/> 1,00 mm		
Bracket length / Insulation thickness	<input type="text"/> mm				
Holes for fasteners	<input type="checkbox"/> Ø3,2mm	Point out <input type="text"/> mm			
Number of brackets	<input type="text"/> pcs				

Product B		General Parameters.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Type bracket	U-shaped bracket <input type="checkbox"/> L-shaped bracket <input type="checkbox"/>				
Metal type & thickness (mm)	Zn Galvanized steel <input type="checkbox"/> 0,80 mm	Al Aluminum <input type="checkbox"/> 0,50 mm	<input type="checkbox"/> 0,80 mm		
Bracket length / Insulation thickness	<input type="text"/> mm				
Holes for fasteners	<input type="checkbox"/> Ø3,2mm	Point out <input type="text"/> mm			
Number of brackets	<input type="text"/> pcs				

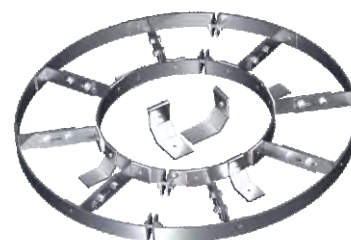
Product C		General Parameters.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Type bracket	U-shaped bracket <input type="checkbox"/> L-shaped bracket <input type="checkbox"/>				
Metal type & thickness (mm)	Zn Galvanized steel <input type="checkbox"/> 0,80 mm	Al Aluminum <input type="checkbox"/> 0,80 mm	<input type="checkbox"/> 1,00 mm		
Bracket length / Insulation thickness	<input type="text"/> mm				
Holes for fasteners	<input type="checkbox"/> Ø3,2mm	Point out <input type="text"/> mm			
Number of brackets	<input type="text"/> pcs				

Product D		General Parameters.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Type bracket	U-shaped bracket <input type="checkbox"/> L-shaped bracket <input type="checkbox"/>				
Metal type & thickness (mm)	Zn Galvanized steel <input type="checkbox"/> 0,80 mm	Al Aluminum <input type="checkbox"/> 0,80 mm	<input type="checkbox"/> 1,00 mm		
Bracket length / Insulation thickness	<input type="text"/> mm				
Holes for fasteners	<input type="checkbox"/> Ø3,2mm	Point out <input type="text"/> mm			
Number of brackets	<input type="text"/> pcs				

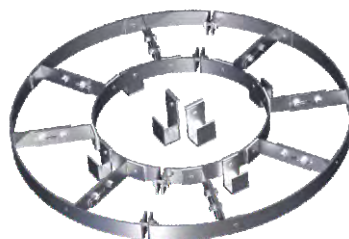




Unloading device with feet H1 and hinged brackets Cnd for mounting the diaphragm













Unloading device with feet H1 and hinged brackets Cnt for the upper bottom of vertical apparatus

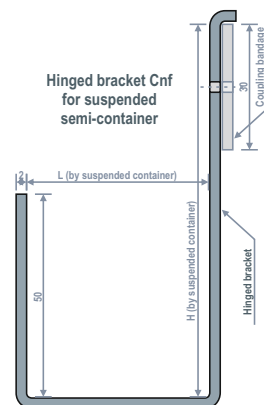
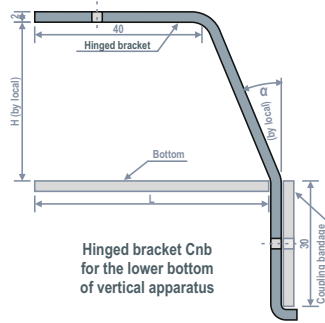
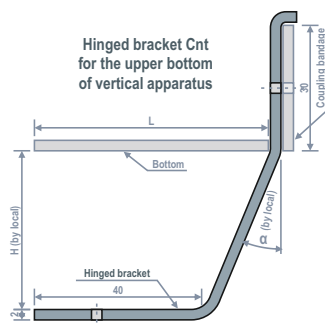
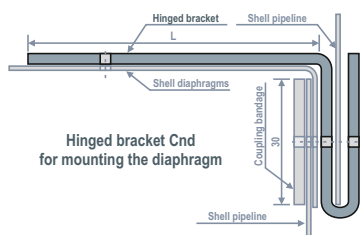


Unloading device with feet H1 and hinged brackets Cnb for the lower bottom of vertical apparatus



Unloading device with feet H1 and hinged brackets Cnf for suspended semi-container

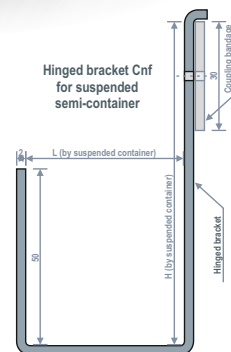
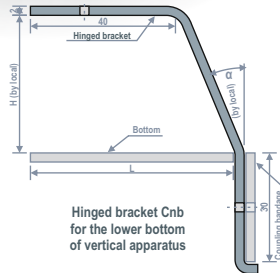
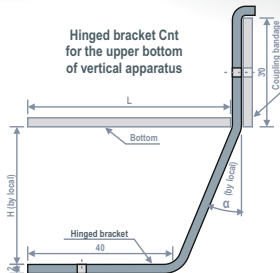
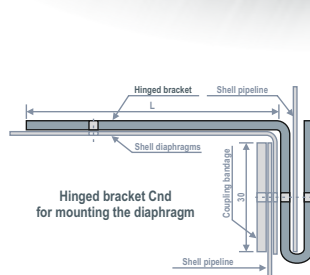
<b>Product execution (types)</b>	 <b>Cnd</b> for mounting the diaphragm  <b>Cnt</b> for the upper bottom of vertical apparatus  <b>Cnb</b> for the lower bottom of vertical apparatus  <b>Cnf</b> for suspended semi-container
<b>Metal type</b>	 Ordinary /galvanized steel (St3 / 08PS / 08KP); Stainless steel. (AISI 301; AISI 304; AISI 403; 12X18H9; St.1.4310; St.S-75); Aluminum (AMG2; AMG3; AD1H).
<b>Cross-section of the metal tape (mm)</b>	 0,7x27; 0,8x27; 0,8x50; 1,0x27; 1,0x28; 1,0x30; 1,0x50 mm.
<b>Product dimensions</b>	 According to the technical task of the Customer. (*in accordance with the drawings).
<b>Number of brackets (according to the circumference)</b>	 From 4x (360°) or more (depending on the diameter of the product and in accordance with the load).
<b>Accessories</b>	 Assortment // According to the technical task of the Customer.
<b>Mounting direction</b>	 They are installed directionally.



## CUSTOMER SURVEY SHEET # \_\_\_\_\_

### Information about the customer.

Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



Product A		Parameters of the Hanging brackets.				* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Hanging bracket type	Cnd (for diaphragm) <input type="checkbox"/> Cnt (for the upper bottom of vertical apparatus) <input type="checkbox"/> Cnb (for the lower bottom of vertical apparatus) <input type="checkbox"/> Cnf (for suspended semi-container) <input type="checkbox"/>						
Metal type	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/>						
	Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75						
	Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>						
Cross-section of the metal tape	0,7x27mm <input type="checkbox"/> 0,8x27mm <input type="checkbox"/> 0,8x50mm <input type="checkbox"/> 1,0x27mm <input type="checkbox"/> 1,0x28mm <input type="checkbox"/> 1,0x30mm <input type="checkbox"/> 1,0x50mm <input type="checkbox"/>						
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm						
Bracket length (mm)	Length <input type="text"/> mm Insulation thickness <input type="text"/> ðins						
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm						
Holes for fasteners	<input type="checkbox"/> Ø3,2 mm Point out <input type="text"/> mm						
Number of brackets	<input type="text"/> pcs (*from 4x on 360° or more)						

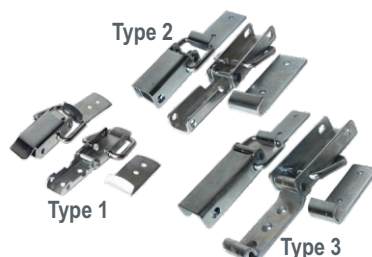
Product B		Parameters of the Hanging brackets.				* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.	
Hanging bracket type	Cnd (for diaphragm) <input type="checkbox"/> Cnt (for the upper bottom of vertical apparatus) <input type="checkbox"/> Cnb (for the lower bottom of vertical apparatus) <input type="checkbox"/> Cnf (for suspended semi-container) <input type="checkbox"/>						
Metal type	Ordinary /galvanized steel St3 <input type="checkbox"/> 08PS <input type="checkbox"/> 08KP <input type="checkbox"/> Other <input type="text"/>						
	Stainless steel <input type="checkbox"/> AISI 301 <input type="checkbox"/> AISI 304 <input type="checkbox"/> AISI 403 <input type="checkbox"/> 12X18H9 <input type="checkbox"/> 1.4310 <input type="checkbox"/> S-75						
	Aluminum <input type="checkbox"/> AMG2 <input type="checkbox"/> AMG3 <input type="checkbox"/> AD1H <input type="text"/>						
Cross-section of the metal tape	0,7x27mm <input type="checkbox"/> 0,8x27mm <input type="checkbox"/> 0,8x50mm <input type="checkbox"/> 1,0x27mm <input type="checkbox"/> 1,0x28mm <input type="checkbox"/> 1,0x30mm <input type="checkbox"/> 1,0x50mm <input type="checkbox"/>						
Diameter D (mm)	External diameter <input type="text"/> mm Pipeline diameter <input type="text"/> mm						
Bracket length (mm)	Length <input type="text"/> mm Insulation thickness <input type="text"/> ðins						
Thermal pads T	NOVAPRESS <input type="checkbox"/> ISOPLAN <input type="checkbox"/> 2 mm <input type="checkbox"/> 3 mm <input type="checkbox"/> 5 mm <input type="checkbox"/> 8 mm <input type="checkbox"/> 10 mm						
Holes for fasteners	<input type="checkbox"/> Ø3,2 mm Point out <input type="text"/> mm						
Number of brackets	<input type="text"/> pcs (*from 4x on 360° or more)						






















### Quick-detachable Bandage PIPEWOOL

Execution  Bandage with a lock  Location & direction



Cross-section of the metal tape (mm) 	0,5x10/12/15/20; 0,7x10/12/15/20; 0,8x20; 1,0x40
Cross-section of the metal tape (mm) 	0,8x10/15/20/40
Cross-section of the metal tape (mm) 	0,5x10/12/15/20; 0,7x10/12/15/20; 0,8x20; 1,0x40
Load Compliance (mm) 	0,5/0,7/0,8mm up to Ø300mm; 0.8/1.0mm for Ø300-800mm; 0.8mm from Ø800mm
Metal type / GOST for bandage tape Zn 	Galvanized steel  GOST 14918-80
Metal type / GOST for bandage tape Al 	Aluminum  GOST 13918-97
Metal type / GOST for bandage tape St 	Stainless steel  GOST 4986-79
Height / Width of the structure (mm) 	from 100 mm (According to the Customer's technical specification)
The diameter of the structure (mm) 	100-1500 mm (According to the Customer's technical specification)
The length of the clamp tape (mm) 	600-5300 mm (According to the Customer's technical specification)
Lock (type-1) 	up to Ø300mm; length/stroke → 115/37mm
Lock (type-2) 	for Ø300-800mm; length/stroke → 145/22mm
Lock (type-3) 	from Ø800mm; length/stroke → 190/25mm

Mounts and accessories  - Exhaust rivet

Mounting direction  Installed radially

<b>BL</b>	<b>PIPEWOOL</b>	<b>Zn</b>	<b>700</b>	<b>080</b>	<b>20</b>	<b>2</b>
Product type	Manufacturer brand	Metal type of tape	Construction diameter (mm)	Metal thickness (mm)	Width of the tape (mm)	Lock type

<b>BL</b>	<b>PIPEWOOL</b>	<b>St</b>	<b>400</b>	<b>250</b>	<b>070</b>	<b>15</b>	<b>2</b>
Product type	Manufacturer brand	Metal type of tape	Construction height (mm)	Construction width (mm)	Metal thickness (mm)	Width of the tape (mm)	Lock type

**Information about the customer.**

Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



Product A	General Parameters.										* 000.00 - Fill it out & <input checked="" type="checkbox"/> mark it.
<b>Zn</b> G'Steel / Cross-section up to Ø300mm	<input type="checkbox"/> 0,5x10	<input type="checkbox"/> 0,5x12	<input type="checkbox"/> 0,5x15	<input type="checkbox"/> 0,5x20	<input type="checkbox"/> 0,7x10	<input type="checkbox"/> 0,7x12	<input type="checkbox"/> 0,7x15	<input type="checkbox"/> 0,7x20			
<b>Zn</b> Galvanized steel / Cross-section	for Ø300-800mm <input type="checkbox"/> 0,8x20mm		from Ø800mm <input type="checkbox"/> 1,0x40mm								
<b>Al</b> Aluminum / Cross-section	up to Ø300mm <input type="checkbox"/> 0,8x10		<input type="checkbox"/> 0,8x15		for Ø300-800mm <input type="checkbox"/> 0,8x20		from Ø800mm <input type="checkbox"/> 0,8x40				
<b>St</b> S'Steel / Cross-section up to Ø300mm	<input type="checkbox"/> 0,5x10	<input type="checkbox"/> 0,5x12	<input type="checkbox"/> 0,5x15	<input type="checkbox"/> 0,5x20	<input type="checkbox"/> 0,7x10	<input type="checkbox"/> 0,7x12	<input type="checkbox"/> 0,7x15	<input type="checkbox"/> 0,7x20			
<b>St</b> Stainless steel / Cross-section	for Ø300-800mm <input type="checkbox"/> 0,8x20mm		from Ø800mm <input type="checkbox"/> 1,0x40mm								
Diameter of the structure <b>D</b>	<input type="text"/> mm (100 - 1500 mm)										
Length of the bandage tape <b>L</b>	<input type="text"/> mm (600 - 5300 mm)										
Lock type	Type-1 (up to Ø300mm) <input type="checkbox"/>			Type-2 (for Ø300-800mm) <input type="checkbox"/>			Type-3 (from Ø800mm) <input type="checkbox"/>				
	Other / Code <input type="text"/>										
Number of bandages with a lock	<input type="text"/> pcs										

Product B	General Parameters.										* 000.00 - Fill it out & <input checked="" type="checkbox"/> mark it.
<b>Zn</b> G'Steel / Cross-section up to Ø300mm	<input type="checkbox"/> 0,5x10	<input type="checkbox"/> 0,5x12	<input type="checkbox"/> 0,5x15	<input type="checkbox"/> 0,5x20	<input type="checkbox"/> 0,7x10	<input type="checkbox"/> 0,7x12	<input type="checkbox"/> 0,7x15	<input type="checkbox"/> 0,7x20			
<b>Zn</b> Galvanized steel / Cross-section	for Ø300-800mm <input type="checkbox"/> 0,8x20mm		from Ø800mm <input type="checkbox"/> 1,0x40mm								
<b>Al</b> Aluminum / Cross-section	up to Ø300mm <input type="checkbox"/> 0,8x10		<input type="checkbox"/> 0,8x15		for Ø300-800mm <input type="checkbox"/> 0,8x20		from Ø800mm <input type="checkbox"/> 0,8x40				
<b>St</b> S'Steel / Cross-section up to Ø300mm	<input type="checkbox"/> 0,5x10	<input type="checkbox"/> 0,5x12	<input type="checkbox"/> 0,5x15	<input type="checkbox"/> 0,5x20	<input type="checkbox"/> 0,7x10	<input type="checkbox"/> 0,7x12	<input type="checkbox"/> 0,7x15	<input type="checkbox"/> 0,7x20			
<b>St</b> Stainless steel / Cross-section	for Ø300-800mm <input type="checkbox"/> 0,8x20mm		from Ø800mm <input type="checkbox"/> 1,0x40mm								
Diameter of the structure <b>D</b>	<input type="text"/> mm (100 - 1500 mm)										
Length of the bandage tape <b>L</b>	<input type="text"/> mm (600 - 5300 mm)										
Lock type	Type-1 (up to Ø300mm) <input type="checkbox"/>			Type-2 (for Ø300-800mm) <input type="checkbox"/>			Type-3 (from Ø800mm) <input type="checkbox"/>				
	Other / Code <input type="text"/>										
Number of bandages with a lock	<input type="text"/> pcs										


























## Bandage PIPEWOOL with a buckle

Execution  Bandage with a buckle  Location & direction



Cross-section of the metal tape (mm) 	0,5x10/12/15/20; 0,7x10/12/15/20; 0,8x20; 1,0x40
Cross-section of the metal tape (mm) 	0,8x10/15/20/40
Cross-section of the metal tape (mm) 	0,5x10/12/15/20; 0,7x10/12/15/20; 0,8x20; 1,0x40
Load Compliance (mm) 	0,5/0,7/0,8mm up to Ø300mm; 0.8mm for Ø300-800mm; 0.8mm from Ø800mm
Metal type / GOST for bandage tape Zn 	Galvanized steel  GOST 14918-80
Metal type / GOST for bandage tape Al 	Aluminum  GOST 13918-97
Metal type / GOST for bandage tape St 	Stainless steel  GOST 4986-79
Metal type / GOST for buckle Zn 	 GOST 14918-80 (Grade according to GOST 1994-90)
Metal type / GOST for buckle Al 	 GOST 21631-76 (Grades: AD1, AMc, Amg)
Metal type / GOST for buckle St 	Stainless steel  GOST 4986-79
Height / Width of the structure (mm) 	from 100 mm (According to the Customer's technical specification)
The diameter of the structure (mm) 	100-1500 mm (According to the Customer's technical specification)
The length of the clamp tape (mm) 	600-5300 mm (According to the Customer's technical specification)
Buckle 	The type and sizes are used in accordance with the type and sizes of the belt for the clamp
Mounting direction 	Installed radially

<b>Bb</b>	<b>PIPEWOOL</b>	<b>Zn</b>	<b>700</b>	<b>080</b>	<b>20</b>
Product type	Manufacturer brand	Metal type of tape	Construction diameter (mm)	Metal thickness (mm)	Width of the tape (mm)
<b>Bb</b>	<b>PIPEWOOL</b>	<b>St</b>	<b>400</b>	<b>250</b>	<b>070 - 15</b>
Product type	Manufacturer brand	Metal type of tape	Construction height (mm)	Construction width (mm)	Metal thickness (mm) Width of the tape (mm)

### Information about the customer.

Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	



### Parameters of the bandage

\* 000,00 - Fill it out & ☒ mark it.

Zn G'Steel / Cross-section up to Ø300mm	<input type="checkbox"/> 0,5x10 <input type="checkbox"/> 0,5x12 <input type="checkbox"/> 0,5x15 <input type="checkbox"/> 0,5x20 <input type="checkbox"/> 0,7x10 <input type="checkbox"/> 0,7x12 <input type="checkbox"/> 0,7x15 <input type="checkbox"/> 0,7x20
Zn Galvanized steel / Cross-section	for Ø300-800mm <input type="checkbox"/> 0,8x20mm from Ø800mm <input type="checkbox"/> 1,0x40mm
Al Aluminum / Cross-section	up to Ø300mm <input type="checkbox"/> 0,8x10 <input type="checkbox"/> 0,8x15 for Ø300-800mm <input type="checkbox"/> 0,8x20 from Ø800mm <input type="checkbox"/> 0,8x40
St S'Steel / Cross-section up to Ø300mm	<input type="checkbox"/> 0,5x10 <input type="checkbox"/> 0,5x12 <input type="checkbox"/> 0,5x15 <input type="checkbox"/> 0,5x20 <input type="checkbox"/> 0,7x10 <input type="checkbox"/> 0,7x12 <input type="checkbox"/> 0,7x15 <input type="checkbox"/> 0,7x20
St Stainless steel / Cross-section	for Ø300-800mm <input type="checkbox"/> 0,8x20mm from Ø800mm <input type="checkbox"/> 1,0x40mm
Diameter of the structure D	<input type="text"/> mm (100 - 1500 mm)
Length of the bandage tape L	<input type="text"/> mm (600 - 5300 mm)
Number of bandages with a buckle	<input type="text"/> pcs

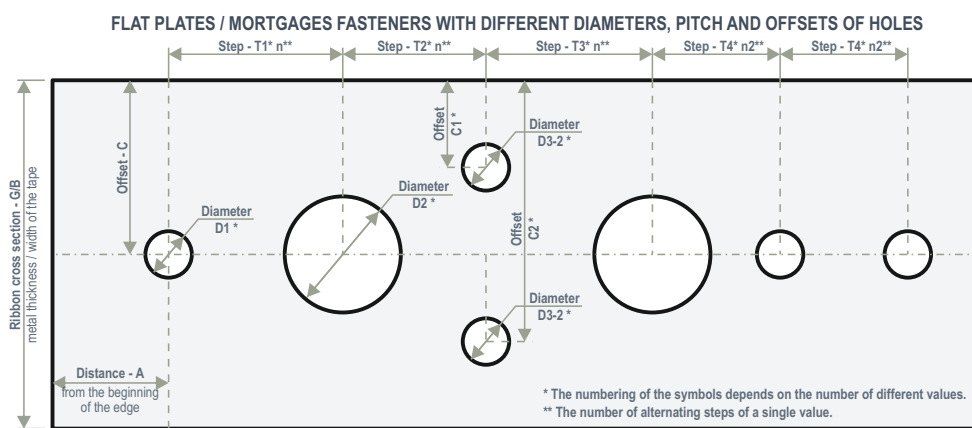
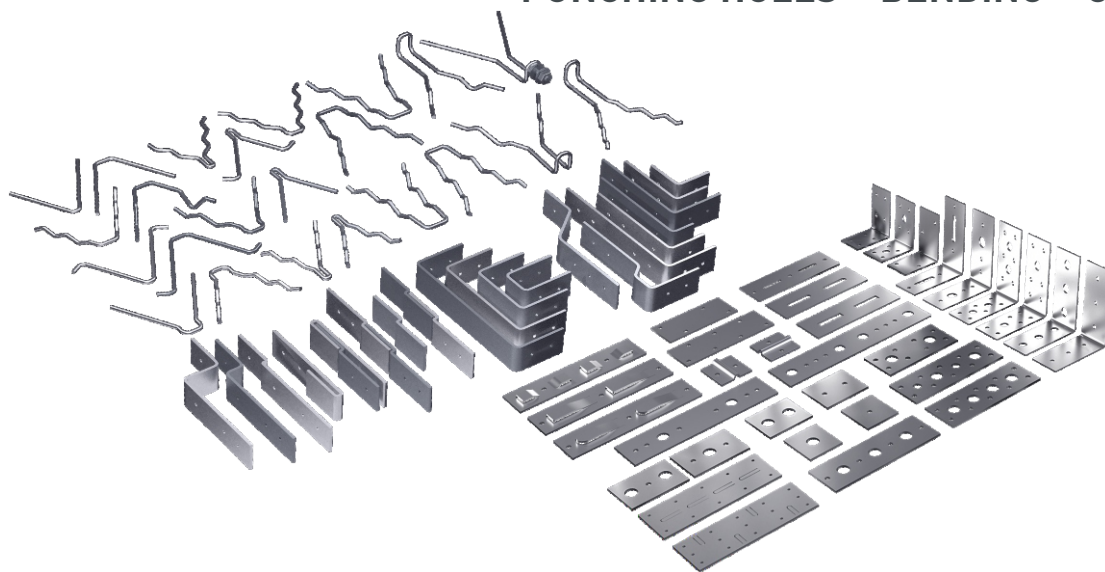


### Parameters of the buckle TU 36.16.22-64-92.

\* 000,00 - Fill it out & ☒ mark it.

Buckle type I:	I-A <input type="checkbox"/> I-O <input type="checkbox"/> I-C <input type="checkbox"/> Perforation <input type="checkbox"/>
Buckle type (II; III; IV):	II-A <input type="checkbox"/> II-O <input type="checkbox"/> II-C <input type="checkbox"/> III-A <input type="checkbox"/> III-O <input type="checkbox"/> III-C <input type="checkbox"/> IV-A <input type="checkbox"/> IV-O <input type="checkbox"/> IV-C <input type="checkbox"/>
Metal tape thickness	0,7mm <input type="checkbox"/> 0,8mm <input type="checkbox"/> 1,0mm <input type="checkbox"/> Coloring <input type="checkbox"/> (C)
Width of the bandage tape	12mm <input type="checkbox"/> (I; II; III; IV) 12mm <input type="checkbox"/> (I; II; III; IV) 20mm <input type="checkbox"/> (III) 40mm <input type="checkbox"/> (IV)



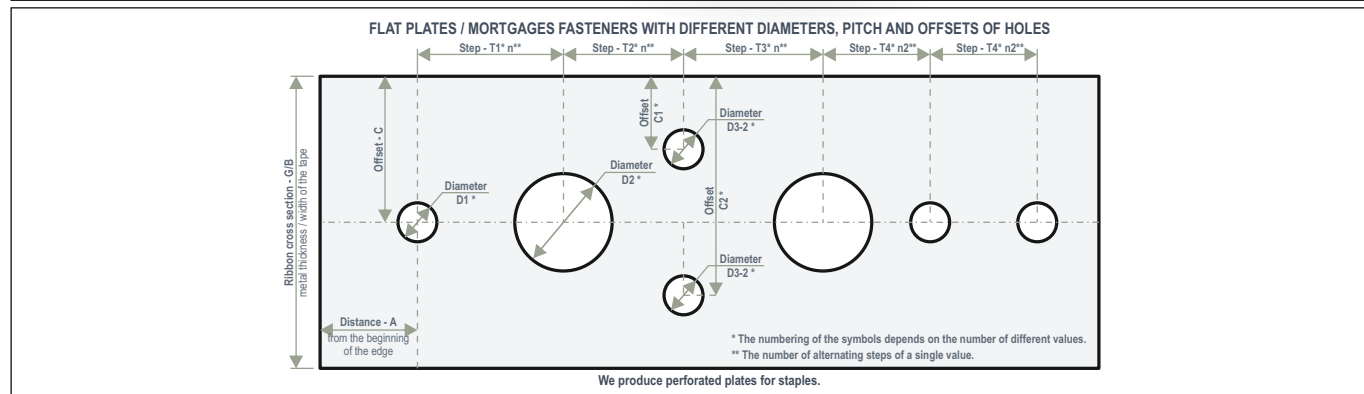


We produce perforated plates for staples.

Execution (types)	With holes          With ears of the suspension          For cables
Tape length (mm)	<b>Measuring; Coil; Plate</b> (According to the Customer's technical specification)
Type / GOST of the tape	<b>St3 steel; 65G Steel; AISI 301 steel; AD1N aluminum</b> or According to the Customer's technical specification
Tape cross-section (mm)	<b>0,5-4,0 x 10-50 mm</b> (According to the Customer's technical specification)
Perforation pitch (mm)	According to the technical task of the Customer
Distance from the edge (mm)	According to the technical task of the Customer
Number of holes (pcs)	According to the technical task of the Customer
The diameter of the holes (mm)	<b>Ø → 3,2; 5; 8; 9; 12 and others.</b> (According to the Customer's technical specification)
Number of hole diameters	According to the technical task of the Customer
Hole offset (mm)	According to the technical task of the Customer
Hole offset difference	<b>Any location</b> (According to the Customer's technical specification)
Chamfering (mm)	According to the technical task of the Customer
Chamfer type/type	According to the technical task of the Customer
Execution method	<b>Automatic → according to the specified CNC program</b>

## CUSTOMER SURVEY SHEET # \_\_\_\_\_

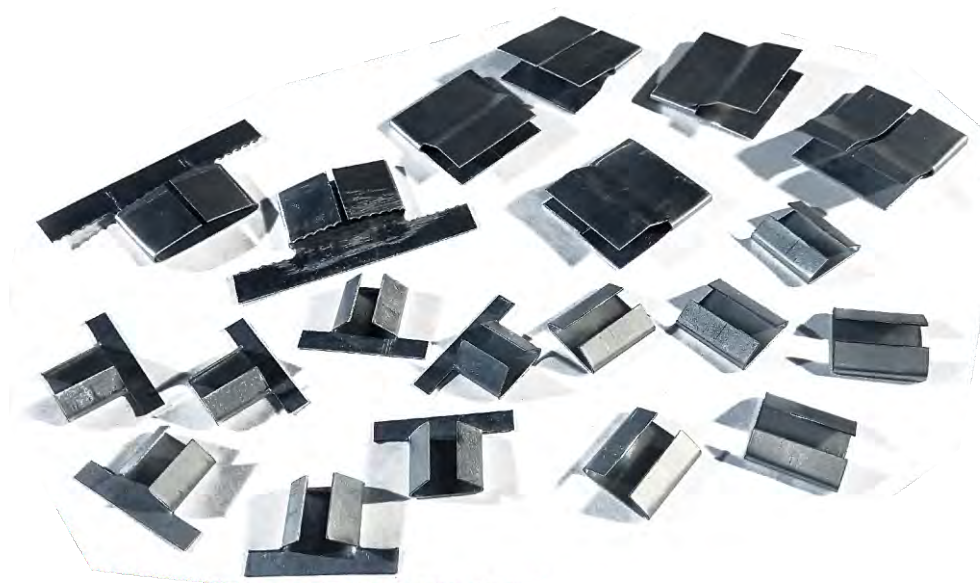
Information about the customer.	
Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	

















Product A	Parameters tape.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.
Execution (types)	<input checked="" type="checkbox"/> With holes	<input type="checkbox"/> With ears of the suspension	<input type="checkbox"/> For cables
View/type product	Measuring <input type="text"/> linear mm	Coil <input type="checkbox"/>	Plate <input type="checkbox"/>
Metal type	St3 Steel <input type="checkbox"/>	65G Steel <input type="checkbox"/>	AISI 301 Steel <input type="checkbox"/> AD1N Aluminum <input type="checkbox"/> Other <input type="text"/>
Cross-section (mm)	<input type="text"/> * <input type="text"/> mm (0,5-4,0 x 10-50 mm)		
Distance A from the edge (mm)	<input type="text"/> mm		
Perforation pitch (mm) T*/N*	<input type="text"/> (T1-5/N1; T2-10/N1...)		
Hole Diameter D (mm) / Quantity N (pcs)	<input type="text"/> (Ø = 3,2; 5; 8; 9; 12) <input type="text"/> (D1-5/N1...)		
Hole offset C (mm)	<input type="text"/> (C-5; C1-3,3/C2-6,6...)		
Chamfer type/type	<input checked="" type="checkbox"/> Bevel	<input type="checkbox"/> Rounded	<input type="text"/> mm
Number of products (pcs)	<input type="text"/> pcs		

Product B	Parameters tape.		* 000,00 - Fill it out & <input checked="" type="checkbox"/> mark it.
Execution (types)	<input checked="" type="checkbox"/> With holes	<input type="checkbox"/> With ears of the suspension	<input type="checkbox"/> For cables
View/type product	Measuring <input type="text"/> linear mm	Coil <input type="checkbox"/>	Plate <input type="checkbox"/>
Metal type	St3 Steel <input type="checkbox"/>	65G Steel <input type="checkbox"/>	AISI 301 Steel <input type="checkbox"/> AD1N Aluminum <input type="checkbox"/> Other <input type="text"/>
Cross-section (mm)	<input type="text"/> * <input type="text"/> mm (0,5-4,0 x 10-50 mm)		
Distance A from the edge (mm)	<input type="text"/> mm		
Perforation pitch (mm) T*/N*	<input type="text"/> (T1-5/N1; T2-10/N1...)		
Hole Diameter D (mm) / Quantity N (pcs)	<input type="text"/> (Ø = 3,2; 5; 8; 9; 12) <input type="text"/> (D1-5/N1...)		
Hole offset C (mm)	<input type="text"/> (C-5; C1-3,3/C2-6,6...)		
Chamfer type/type	<input checked="" type="checkbox"/> Bevel	<input type="checkbox"/> Rounded	<input type="text"/> mm
Number of products (pcs)	<input type="text"/> pcs		





Execution Buckles (types)	 Type I  Type II  Type III  Type IV
Execution Braces (types)	 Type I  Type II
Metal type of band steel 	<p>Aluminum or aluminum alloy (A) according to GOST 21631-76 (grades ADI, AMc, AMg).</p> <p>Thin-sheet galvanized steel (O) according to GOST 14918-80 (grade according to GOST 19904-90).</p> <p>Rolled hot-rolled thin-sheet steel according to TU 14-11-252-89 (grade according to GOST 19903-74), rolled cold-rolled thin-sheet roofing steel (C) according to TU 14-11-262-89 (grade according to GOST 19904-90).</p>
The thickness of the metal tape 	0,7; 0,8; 1,0 mm (According to the Customer's technical specification).
Wire metal type 	Galvanized steel (Zn); Stainless steel (St) (According to the Customer's technical specification)
Wire diameter (mm) 	Ø3,5 -3,9 (According to the Customer's TOR)
Conditions for (C) 	Buckles made of rolled thin-sheet roofing must have a paint and varnish coating of class II according to GOST 9.032-74, a group of operating conditions of a product with a coating of class I according to GOST 9.104-79.
Purpose of buckles 	Types I and II for the bandage tape (width) 12; 15; 20; 40 mm. Type III for the bandage tape 20; 40 mm. Type IV for the bandage tape 40 mm.
Purpose of braces 	For polypropylene (PP) packaging (strapping) tape.
Execution method 	Automatic → according to the specified CNC program.

Buckle	I	A	TU 36.16.22-64-92	0,8	20
Product	Product type	Metal type	Technical condition	Metal thickness (mm)	Width of the tape (mm)
Buckle	I	O	TU 36.16.22-64-92	0,8	40
Product	Product type	Metal type	Technical condition	Metal thickness (mm)	Width of the tape (mm)
Buckle	II	C	TU 36.16.22-64-92	0,7	15
Product	Product type	Metal type	Technical condition	Metal thickness (mm)	Width of the tape (mm)
Buckle	IV	O	TU 36.16.22-64-92	0,8	40
Product	Product type	Metal type	Technical condition	Metal thickness (mm)	Width of the tape (mm)

# CUSTOMER SURVEY SHEET #

Information about the customer.	
Customer?* The company?*	
Object / # Order form / Date	
Phone / Your name?*	
Mail:	

Buckle type I

Technical drawing of Buckle type I. It includes a front view with dimensions 45, 10, 7, and 27. A side view shows a thickness of 0.8. A detail view of the buckle blank shows a notch line, cut line, and sheet GOST 19903-2015 with dimensions 11, 7, and 27. A cross-section view shows the buckle type I attached to a bandage (Tape 0,8x20 GOST 3560-73) with a width of 40-50 and a thickness of 0.7.

Buckle type II

Technical drawing of Buckle type II. It includes a front view with dimensions 20, 10, 10, and 22. A side view shows a thickness of 0.8. A detail view of the buckle blank shows a notch line, cut line, and sheet GOST 19903-2015 with dimensions 11, 15, 10, 10, and 22. A cross-section view shows the buckle type II attached to a bandage (Tape 0,8x20 GOST 3560-73) with a width of 40-50 and a thickness of 0.7.

Buckle type III

Technical drawing of Buckle type III. It includes a front view with dimensions 25, 20, 45, 20, 10, and 25. A side view shows a thickness of 0.8. A detail view of the buckle blank shows a notch line, cut line, and sheet GOST 19903-2015 with dimensions 20, 45, 30, 10, 15, 10, 5, 10, and 5. A cross-section view shows the buckle type III attached to a bandage (Tape 0,8x20 GOST 3560-73) with a width of 40-50 and a thickness of 0.7.

Buckle type IV

Technical drawing of Buckle type IV. It includes a front view with dimensions 45, 15, 40, 20, 20, and 45. A side view shows a thickness of 0.8. A detail view of the buckle blank shows a notch line, cut line, and sheet GOST 19903-2015 with dimensions 15, 40, 30, 20, 15, 10, 5, 20, and 5. A cross-section view shows the buckle type IV attached to a bandage (Tape 0,8x40 GOST 3560-73) with a width of 40-50 and a thickness of 0.7.

Parameters of the BUCKLE TU 36.16.22-64-92.										* 000,00	- Fill it out & <input checked="" type="checkbox"/> mark it.
Buckle type I	I-A <input type="text"/>	I-O <input type="text"/>	I-C <input type="text"/>	Perforation <input type="text"/>							
Buckle type (II; III; IV)	II-A <input type="text"/>	II-O <input type="text"/>	II-C <input type="text"/>	III-A <input type="text"/>	III-O <input type="text"/>	III-C <input type="text"/>	IV-A <input type="text"/>	IV-O <input type="text"/>	IV-C <input type="text"/>		
Metal tape thickness	0,7mm <input type="text"/>	0,8mm <input type="text"/>	1,0mm <input type="text"/>	Coloring <input type="text"/> (C)							
Width of the bandage tape	12mm <input type="text"/> (I; II; III; IV)	12mm <input type="text"/> (I; II; III; IV)	20mm <input type="text"/> (III)	40mm <input type="text"/> (IV)							
Number of products (pcs)	<input type="text"/>			pcs							

Parameters of the BRACE TU 36.16.22-64-92.						* 000,00	- Fill it out &	<input checked="" type="checkbox"/> mark it.
Brace type	I-A <input type="checkbox"/>	I-O <input type="checkbox"/>	I-C <input type="checkbox"/>	II-A <input type="checkbox"/>	II-O <input type="checkbox"/>	II-C <input type="checkbox"/>		
Thickness of the metal tape (mm)	0,7mm <input type="checkbox"/>	0,8mm <input type="checkbox"/>	1,0mm <input type="checkbox"/>	Coloring <input type="checkbox"/>		(C)		
Width PP-strapping tape (mm)	Point out	<input type="text"/>					mm	
Number of products (pcs)		<input type="text"/>					pcs	

\* The questionnaire is filled out separately for each type of product.





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# PRODUCT CATALOG

## MOUNTS AND ACCESSORIES

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