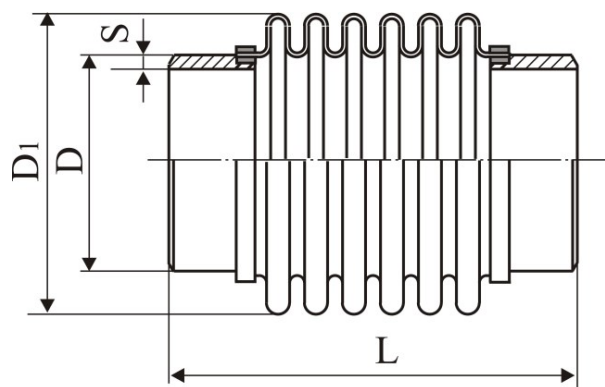


# Axial expansion joints, HOPII type



## HOPII type

HOPII type axial expansion joints with welded neck branch pipes are basic products for more complex designs of expansion joints, but they can be installed directly in pipelines transferring water with a temperature up to 150 °C and at a velocity up to 8 m/s, oil and oil products with a temperature up to 450 °C and at a velocity up to 8 m/s, as well as steam and gaseous media not causing corrosion to the expansion joint material, with a temperature up to 500 °C and at a velocity up to 20 m/s.

Table 1\*

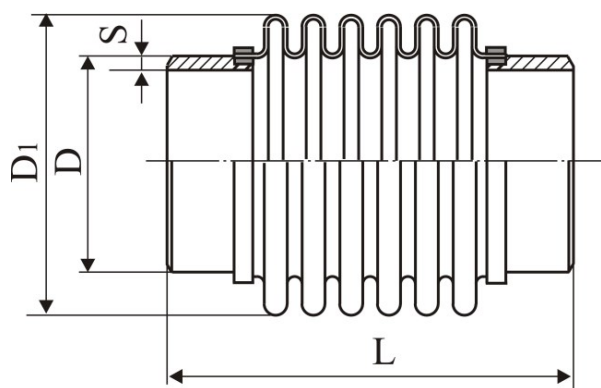
Serial product range\*\*

Reference designation	Nominal pressure, PN, MPa (kgf/cm <sup>2</sup> )	Nominal diameter, DN, mm	Dimensions, mm				Weight, kg
			D	S	D <sub>1</sub>	L	
HOPII-2.5-65	0.25 (2.5)	65	76	3.5	104	340	2
HOPII-2.5-80		80	89	3.5	118	348	2
HOPII-2.5-100		100	108	4.0	142	358	4
HOPII-2.5-125		125	133	4.0	170	372	5
HOPII-2.5-150		150	159	4.5	203	384	6
HOPII-2.5-200		200	219	6.0	258	410	12
HOPII-2.5-250		250	273	7.0	318	588	26
HOPII-2.5-300		300	325	7.0	372	606	31
HOPII-2.5-350		350	377	7.0	431	612	37
HOPII-2.5-400		400	426	7.0	485	622	43
HOPII-2.5-500		500	530	8.0	600	626	54
HOPII-2.5-600		600	630	8.0	706	658	65
HOPII-2.5-700		700	720	8.0	797	634	74
HOPII-2.5-800		800	820	8.0	911	668	95
HOPII-2.5-900		900	920	10.0	1015	650	123
HOPII-2.5-1000		1000	1020	10.0	1117	664	138
HOPII-2.5-1200	1200	1220	12.0	1319	664	213	
HOPII-2.5-1400	1400	1420	14.0	1522	664	249	
HOPII-6.3-65	0.63 (6.3)	65	76	3.5	105	346	3
HOPII-6.3-80		80	89	3.5	120	358	3
HOPII-6.3-100		100	108	4.0	143	376	5
HOPII-6.3-125		125	133	4.0	172	396	7
HOPII-6.3-150		150	159	4.5	206	412	10
HOPII-6.3-200		200	219	6.0	261	432	16
HOPII-6.3-250		250	273	7.0	318	588	26
HOPII-6.3-300		300	325	7.0	372	606	32
HOPII-6.3-350		350	377	7.0	431	602	37
HOPII-6.3-400		400	426	7.0	485	632	43
HOPII-6.3-500		500	530	8.0	600	644	65
HOPII-6.3-600		600	630	8.0	706	678	80
HOPII-6.3-700		700	720	8.0	797	660	97
HOPII-6.3-800		800	820	8.0	911	694	124
HOPII-6.3-900		900	920	10.0	1015	674	153
HOPII-6.3-1000		1000	1020	10.0	1117	694	185
HOPII-6.3-1200	1200	1220	12.0	1319	694	269	
HOPII-6.3-1400	1400	1420	14.0	1522	694	316	
HOPII-10-65	1.0 (10)	65	76	3.5	106	358	3
HOPII-10-80		80	89	3.5	120	364	4
HOPII-10-100		100	108	4.0	145	386	6
HOPII-10-125		125	133	4.0	174	406	8
HOPII-10-150		150	159	4.5	204	396	8
HOPII-10-200		200	219	6.0	259	416	13
HOPII-10-250		250	273	7.0	319	600	28
HOPII-10-300		300	325	7.0	373	616	35
HOPII-10-350		350	377	7.0	431	620	44
HOPII-10-400		400	426	7.0	485	654	51
HOPII-10-500		500	530	8.0	600	676	82
HOPII-10-600		600	630	8.0	706	706	101
HOPII-10-700		700	720	8.0	797	678	113
HOPII-10-800		800	820	8.0	911	712	144
HOPII-10-900		900	920	10.0	1015	698	184
HOPII-10-1000		1000	1020	10.0	1117	716	220
HOPII-10-1200	1200	1220	12.0	1319	716	312	
HOPII-10-1400	1400	1420	14.0	1522	716	368	

\* The parameters of expansion joints given in the Table are for reference only; for precise product performance please contact the factory's technical specialists;

\*\* The scientific, material and technical facilities, as well as testing equipment of the factory make it possible to supply both serial products and customized products (designed and manufactured according to the customer's ToR).

## HOIИH type



HOIИH type axial expansion joints with welded neck branch pipes are basic products for more complex designs of expansion joints, but they can be installed directly in pipelines transferring water with a temperature up to 150 °C and at a velocity up to 8 m/s, oil and oil products with a temperature up to 450 °C and at a velocity up to 8 m/s, as well as steam and gaseous media not causing corrosion to the expansion joint material, with a temperature up to 500 °C and at a velocity up to 20 m/s.

Table 1\* continued

Serial product range\*\*

Reference designation	Nominal pressure, PN, MPa (kgf/cm <sup>2</sup> )	Nominal diameter, DN, mm	Dimensions, mm				Weight, kg
			D	S	D <sub>1</sub>	L	
HOIИH-16-65	1.6 (16)	65	76	3.5	108	374	4
HOIИH-16-80		80	89	3.5	122	382	5
HOIИH-16-100		100	108	4.0	143	376	5
HOIИH-16-125		125	133	4.0	172	390	7
HOIИH-16-150		150	159	4.5	205	406	10
HOIИH-16-200		200	219	6.0	275	502	17
HOIИH-16-250		250	273	7.0	320	632	33
HOIИH-16-300		300	325	7.0	374	632	44
HOIИH-16-350		350	377	7.0	431	640	58
HOIИH-16-400		400	426	7.0	485	682	72
HOIИH-16-500		500	530	8.0	600	702	99
HOIИH-16-600		600	630	8.0	706	748	131
HOIИH-16-700		700	720	8.0	797	712	145
HOIИH-16-800		800	820	8.0	911	754	194
HOIИH-16-900		900	920	10.0	1015	734	236
HOIИH-16-1000		1000	1020	10.0	1117	748	270
HOIИH-16-1200	1200	1220	12.0	1319	748	372	
HOIИH-16-1400	1400	1420	14.0	1522	748	438	
HOIИH-25-65	2.5 (25)	65	76	4.0	106	358	3
HOIИH-25-80		80	89	4.0	120	364	3
HOIИH-25-100		100	108	4.5	144	384	4
HOIИH-25-125		125	133	5.0	173	398	5
HOIИH-25-150		150	159	4.5	218	512	20
HOIИH-25-200		200	219	6.0	277	514	25
HOIИH-25-250		250	273	7.0	320	632	30
HOIИH-25-300		300	325	8.0	374	642	45
HOIИH-25-350		350	377	9.0	431	648	61
HOIИH-25-400		400	426	9.0	485	702	80
HOIИH-25-500		500	530	8.0	600	722	111
HOIИH-25-600		600	630	8.0	706	766	146
HOIИH-25-700		700	720	8.0	797	736	170
HOIИH-25-800		800	820	8.0	911	780	227
HOIИH-25-900		900	920	10.0	1015	748	256
HOIИH-25-1000		1000	1020	12.0	1117	776	320
HOIИH-25-1200	1200	1220	14.0	1319	776	430	
HOIИH-25-1400	1400	1420	14.0	1522	776	508	

\* The parameters of expansion joints given in the Table are for reference only; for precise product performance please contact the factory's technical specialists;

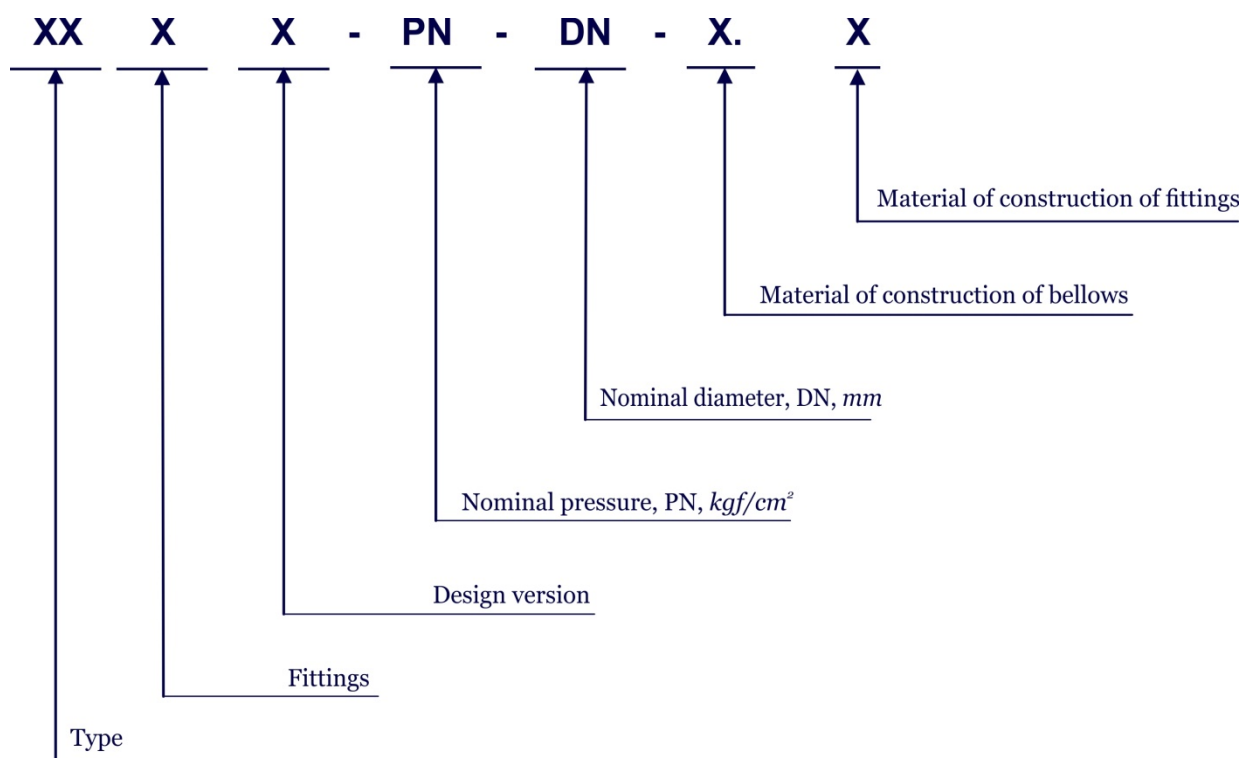
\*\* The scientific, material and technical facilities, as well as testing equipment of the factory make it possible to supply both serial products and customized products (designed and manufactured according to the customer's ToR).

# Reference designation of unbalanced general purpose industrial grade axial expansion joints as per the ИРНС.300260.052ТУ specification

The reference designation of expansion joints consists of symbols and values of the main parameters:

Reference designation of expansion joint types and versions					
Type	Symbol	Fitting	Symbol	Design version	Symbol
Axial	HO	Weld branch pipe (on both sides)	Π	Basic (bellows + 2 branch pipes or flanges)	H
		Butt welded plate flange (on both sides)	Φ	With a guide branch pipe	Γ
		Plate flange (on both sides)	B	Enclosed	K
				With a guide branch pipe and enclosed	M

## Expansion joint reference designation diagram



Depending on the operating conditions, the material of construction of expansion joints shall be specified at order placement in accordance with the tables below:

Bellows		
Material of construction	Material grade	Permissible operating temperature, K (°C)
1	Steel 08X18H10T (12X18H10T) as per GOST 5632	20 to 773 (-253 to 500)
2	Steel 10X17H13M2T as per GOST 5632	20 to 773 (-253 to 500)

Fittings		
Material of construction	Material grade	Permissible operating temperature, K (°C)
1	Steel 20 as per GOST 1050	253 to 698 (-20 to 425)
2	Steel 17ГC, 17Г1C as per GOST 19281	233 to 748 (-40 to 475)
3	Steel 09Г2C, 09Г2 as per GOST 19281	213 to 748 (-60 to 475)
4	Steel 08X18H10T, 12X18H10T as per GOST 5632	20 to 823 (-253 to 550)
5	Steel 10X17H13M2T as per GOST 5632	20 to 823 (-253 to 550)
6	Steel 12MX, 12X1MΦ as per GOST 20072	223 to 773 (-50 to 500)

Also, depending on the operating conditions of expansion joints, a heat-resistant corrosion-protection and waterproof coating can be applied onto outer surfaces of bellows and fittings.

#### Example of ordering information for:

1. An axial expansion joint for welded attachment to a pipeline made of 12X18H10T steel; nominal pressure, PN, 1.6 MPa (16 kgf/cm<sup>2</sup>); nominal diameter, DN, 250 mm; mounted casing; material of bellows construction, 08X18H10T steel as per GOST 5632; material of construction of fittings, 12X18H10T steel as per GOST 5632: “Expansion joint **НОПК-16-250-1.4** as per ИЯНШ.300260.052 ТУ”.

2. An axial expansion joint for flanged attachment to a pipeline made of grade 20 steel; nominal pressure, PN, 2.5 MPa (25 kgf/cm<sup>2</sup>); nominal diameter, DN, 250 mm; mounted casing and guide branch pipe; material of bellows construction, 08X18H10T steel as per GOST 5632; material of construction of fittings, grade 20 steel as per GOST 1050: “Expansion joint **НОФМ-16-250-1.1** as per ИЯНШ.300260.052 ТУ”.

Basic parameters and characteristics of handled media of the products as per ИЯНШ.300260.052 ТУ

Handled media	Handled medium temperature, K (°C)	Handled medium velocity, m/s	
		Without a guide branch pipe	With a guide branch pipe
Oil, oil products	723 (450)	up to 8	over 8
Fresh water	423 (150)		
Steam, natural gas, gaseous media not causing corrosion to expansion joint material	773 (500)	up to 20	above 20 to 80
Note:	<ol style="list-style-type: none"> <li>The permissible content of chloride ions in fresh water, the handled medium for expansion joints to be installed in heating networks, shall not exceed 250 mg/l.</li> <li>The expansion joints may be used for other handled media not capable of causing sulphide stress corrosion cracking.</li> <li>The data provided in the table do not cover the expansion joints, dwg. ИЯНШ.302667.700-01.61, ИЯНШ.302667.701-01.61, ИЯНШ.302667.732-01.41.</li> </ol>		