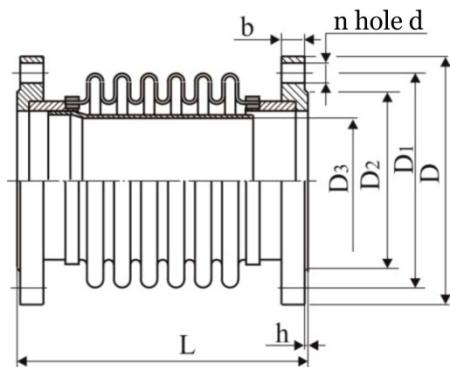


Axial expansion joints, HOΦΓ type

HOΦΓ type



HOΦΓ type unbalanced expansion joints with flanges welded onto branch pipes have an internal guide branch pipe welded to one of the connection branch pipes. They can be installed directly in pipelines transferring water with a temperature up to 150 °C and at a velocity above 8 m/s, oil and oil products with a temperature up to 450 °C and at a velocity above 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 of 20 to 80 m/s.

Table 6*

Serial product range**

Reference designation	Nominal pressure, PN, MPa (kgf/cm ²)	Nominal diameter, DN, mm	Dimensions, mm							n	Weight, kg
			D	D ₁	D ₂	L	b	h	d		
HOΦΓ-2.5-65	0.25 (2.5)	65	160	130	110	258	11	3	14	4	6
HOΦΓ-2.5-80		80	185	150	128	266	11	3	18	4	7
HOΦΓ-2.5-100		100	205	170	148	286	11	3	18	4	8
HOΦΓ-2.5-125		125	235	200	178	302	13	3	18	8	11
HOΦΓ-2.5-150		150	260	225	202	314	13	3	18	8	14
HOΦΓ-2.5-200		200	315	280	258	392	15	3	18	8	24
HOΦΓ-2.5-250		250	370	335	312	416	18	3	18	12	36
HOΦΓ-2.5-300		300	435	395	365	440	18	4	22	12	47
HOΦΓ-2.5-350		350	485	445	415	446	18	4	22	12	54
HOΦΓ-2.5-400		400	535	495	565	456	18	4	22	16	58
HOΦΓ-2.5-500		500	640	600	570	484	20	4	22	16	81
HOΦΓ-2.5-600		600	755	705	670	518	20	5	26	20	103
HOΦΓ-2.5-700		700	860	810	775	506	21	5	26	24	128
HOΦΓ-2.5-800		800	975	920	880	540	21	5	30	24	165
HOΦΓ-2.5-900		900	1075	1020	980	536	23	5	30	24	203
HOΦΓ-2.5-1000	1000	1175	1120	1080	554	25	5	30	28	235	
HOΦΓ-6.3-65	0.63 (6.3)	65	160	130	110	264	13	3	14	4	6
HOΦΓ-6.3-80		80	185	150	128	280	15	3	18	4	9
HOΦΓ-6.3-100		100	205	170	148	308	15	3	18	4	11
HOΦΓ-6.3-125		125	235	200	178	332	17	3	18	8	16
HOΦΓ-6.3-150		150	260	225	202	348	17	3	18	8	20
HOΦΓ-6.3-200		200	315	280	258	422	19	3	18	8	31
HOΦΓ-6.3-250		250	370	335	312	414	20	3	18	12	37
HOΦΓ-6.3-300		300	435	395	365	444	20	4	22	12	49
HOΦΓ-6.3-350		350	485	445	415	444	22	4	22	12	59
HOΦΓ-6.3-400		400	535	495	465	470	24	4	22	16	69
HOΦΓ-6.3-500		500	640	600	570	504	25	4	22	16	100
HOΦΓ-6.3-600		600	755	705	670	540	25	5	26	20	128
HOΦΓ-6.3-700		700	860	810	775	536	27	5	26	24	168
HOΦΓ-6.3-800		800	975	920	880	570	27	5	30	24	215
HOΦΓ-6.3-900		900	1075	1020	980	564	29	5	30	24	257
HOΦΓ-6.3-1000	1000	1175	1120	1080	588	31	5	30	28	308	
HOΦΓ-10-65	1.0 (10)	65	180	145	122	278	17	3	18	4	9
HOΦΓ-10-80		80	195	160	133	284	17	3	18	4	11
HOΦΓ-10-100		100	215	180	158	318	19	3	18	8	14
HOΦΓ-10-125		125	245	210	184	340	21	3	18	8	20
HOΦΓ-10-150		150	280	240	212	330	21	3	22	8	23
HOΦΓ-10-200		200	335	295	268	400	21	3	22	8	32
HOΦΓ-10-250		250	390	350	320	426	23	3	22	12	46
HOΦΓ-10-300		300	440	400	370	454	24	4	22	12	57
HOΦΓ-10-350		350	500	460	430	458	24	4	22	16	72
HOΦΓ-10-400		400	565	515	482	494	26	4	26	16	91
HOΦΓ-10-500		500	670	620	585	538	28	4	26	20	134
HOΦΓ-10-600		600	780	725	685	572	31	5	30	20	177
HOΦΓ-10-700		700	895	840	800	558	34	5	30	24	230
HOΦΓ-10-800		800	1010	950	905	596	37	5	33	24	303
HOΦΓ-10-900		900	1110	1050	1005	594	40	5	33	28	369
HOΦΓ-10-1000	1000	1220	1160	1110	616	43	5	33	28	456	

* 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).

HOΦΓ type

HOΦΓ type unbalanced expansion joints with flanges welded onto branch pipes have an internal guide branch pipe welded to one of the connection branch pipes. They can be installed directly in pipelines transferring water with a temperature up to 150 °C and at a velocity above 8 m/s, oil and oil products with a temperature up to 450 °C and at a velocity above 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 of 20 to 80 m/s.

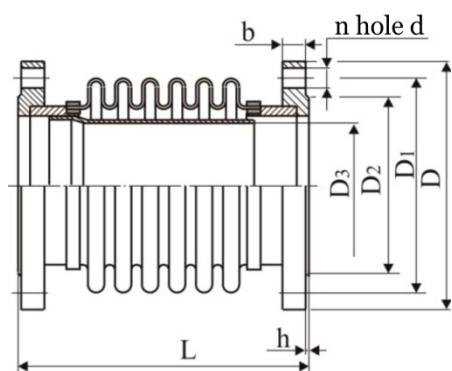


Table 6* continued

Serial product range**

Reference designation	Nominal pressure, PN, MPa (kgf/cm ²)	Nominal diameter, DN, mm	Dimensions, mm							n	Weight, kg
			D	D ₁	D ₂	L	b	h	d		
HOΦΓ-16-65	1.6 (16)	65	180	145	122	298	21	3	18	4	11
HOΦΓ-16-80		80	195	160	133	306	21	3	18	4	13
HOΦΓ-16-100		100	215	180	158	312	23	3	18	8	15
HOΦΓ-16-125		125	245	210	184	328	25	3	18	8	20
HOΦΓ-16-150		150	280	240	212	344	25	3	22	8	26
HOΦΓ-16-200		200	335	295	268	492	27	3	22	12	40
HOΦΓ-16-250		250	405	355	320	462	28	3	26	12	59
HOΦΓ-16-300		300	460	410	370	474	28	4	26	12	72
HOΦΓ-16-350		350	520	470	430	484	30	4	26	16	94
HOΦΓ-16-400		400	580	525	482	530	34	4	30	16	123
HOΦΓ-16-500		500	710	650	585	580	44	4	33	20	213
HOΦΓ-16-600		600	840	770	685	628	45	5	39	20	292
HOΦΓ-16-700		700	910	840	800	604	47	5	39	24	315
HOΦΓ-16-800		800	1020	950	905	648	49	5	39	24	407
HOΦΓ-16-900		900	1120	1050	1005	646	54	5	39	28	497
HOΦΓ-16-1000		1000	1255	1170	1110	666	58	5	45	28	634
HOΦΓ-25-65	2.5 (25)	65	180	145	122	282	21	3	18	8	11
HOΦΓ-25-80		80	195	160	133	290	23	3	18	8	13
HOΦΓ-25-100		100	230	190	158	322	25	3	22	8	18
HOΦΓ-25-125		125	270	220	184	338	27	3	26	8	26
HOΦΓ-25-150		150	300	250	212	354	27	3	26	8	32
HOΦΓ-25-200		200	360	310	278	436	29	3	26	12	49
HOΦΓ-25-250		250	425	370	335	466	31	3	30	12	68
HOΦΓ-25-300		300	485	430	390	488	32	4	30	16	90
HOΦΓ-25-350		350	550	490	450	500	38	4	33	16	125
HOΦΓ-25-400		400	610	550	505	556	40	4	33	16	166
HOΦΓ-25-500		500	730	660	615	602	48	4	39	20	249
HOΦΓ-25-600		600	840	770	720	648	49	5	39	20	333
HOΦΓ-25-700		700	960	875	820	636	55	5	45	24	431
HOΦΓ-25-800		800	1075	990	930	692	63	5	45	24	603

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

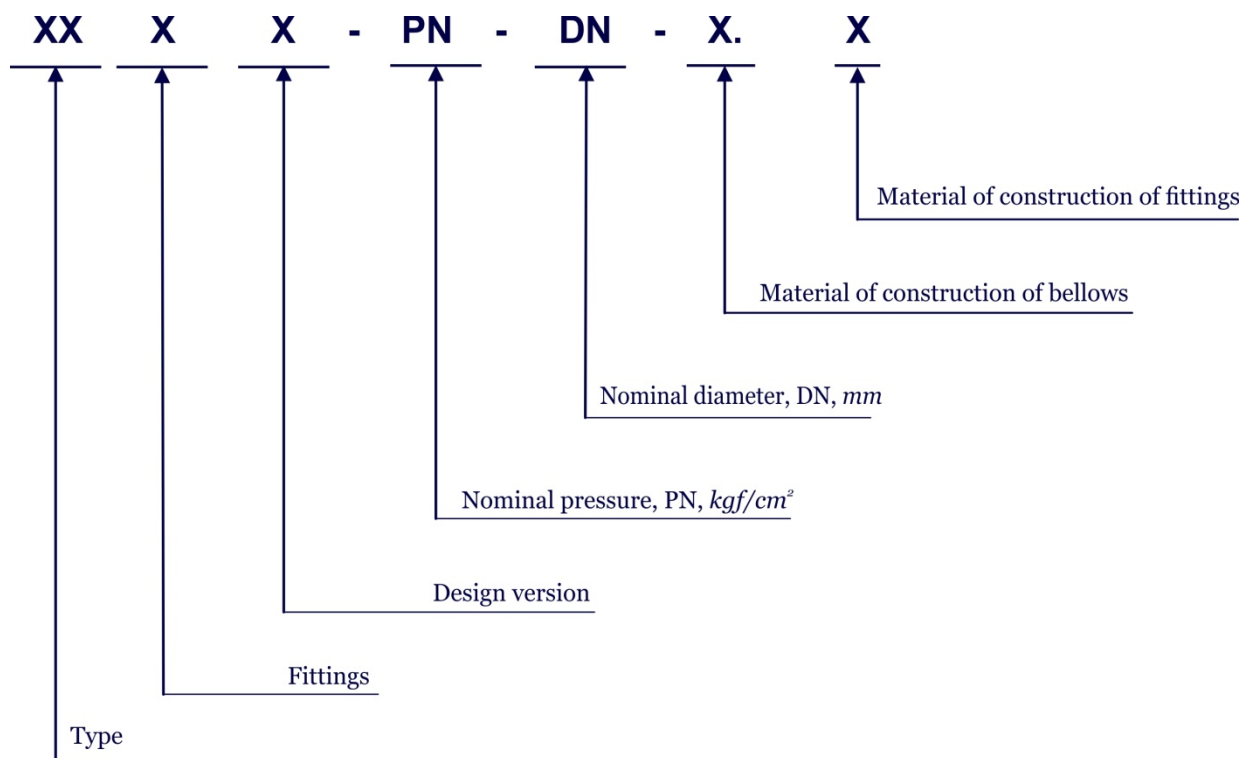
** The scientific, material and technical facilities, as well as testing equipment of the factory make it possible to supply both serial products and customized products (designed and manufactured according to the customer's ToR).

Reference designation of unbalanced general purpose industrial grade axial expansion joints as per the ИРНС.300260.052TV 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/cm²); 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/cm²); 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"> 1. 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. 2. The expansion joints may be used for other handled media not capable of causing sulphide stress corrosion cracking. 3. 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. 		