

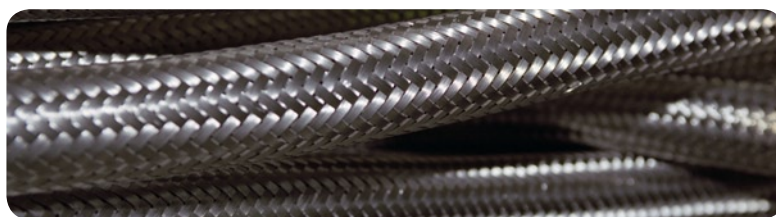
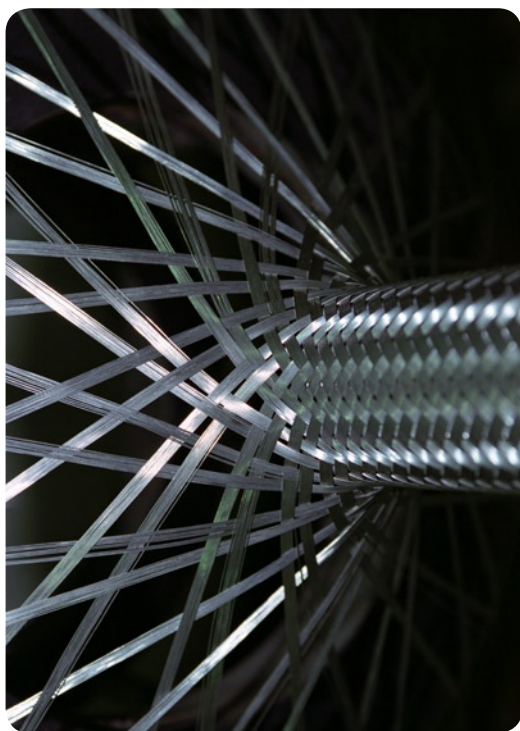
# Vladimir metal hose works

# VZM



Company profile  
& products guide

Recognized leader in manufacturing of flexible connections and fittings



**“VZM” — is the recognized leader in manufacturing of (Corrugated) Metal Hoses and Hose Assemblies in Russia.**

“VZM” is incorporated in the large industrial Holding — the international operator in Precision alloys market. Holding was founded in 1991 by dynasty of professional metallurgists.

“VZM” manufactures full range of Metal Hoses and Fittings. Our plant is located in the city of Vladimir — one of the beautiful places of “Golden Ring of Russia”.

Among our customers there are more than 50 key companies representing various fields of heavy industries: metallurgical, petrochemical, power supply, etc. There are such “Industrial Giants” as **TNK-BP, LUKOIL, SEVERSTAL, EVRAZ, MECHHEL, GAZPROM** on the list of our clients.

As of 2008 “VZM” covers 68% of CIS market of Metal Hoses and flexible connections.

## Customer-focused policy

- “VZM” is capable to execute “rush orders” and non-standard orders. For this reason we have introduced a flexible production and integrated a number of technical innovations supported by the registered patents.
- We serve our clients on **“One call — get all”** basis: at your first contact you will be presented our whole product range, given the opportunity to reach the agreement for delivery of selected products and settle all related commercial issues.
- All standard items are always available from our warehouse, and may be shipped to the Customer within 1–3 days
- Any component part of flexible connection may be completed to comply with specific customer’s requirements.
- For our constant clients we have a stock of customers-tailored items
- We offer our clients flexible payment terms

## Production flexibility

- Multishift operation schedule enables us to double the production capacity if necessary. As a result the period of orders execution (regardless the size and complexity of orders) doesn't exceed 2-4 weeks. **In case of urgency any order may be executed within 1 week without payment of "extra urgency cost"**
- Our production is organized in the way that allows VZM to work both big-sized and small-sized orders at the same time
- VZM operates self-designed equipment specially engineered to increase its output and decrease the equipment realignment time in comparison with standard one **2**

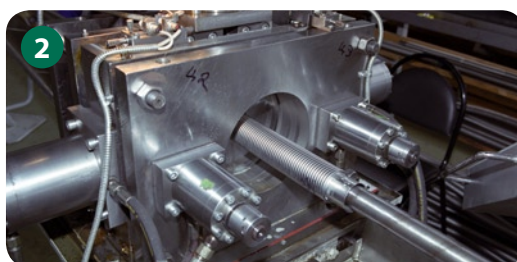
## Technical innovation

- VZM produces specially designed metal hose — **double-seamed metal hose**. The advantages of such design are:
  - Secures the reliability of Metal hose in comparison with single-seamed type one due to more balanced stress distribution between critical parts.
  - Allows to use two-stage Quality control of all metal hoses **4**

These innovations are supported by the registered patents. This ensures the high reliability of VZM products.

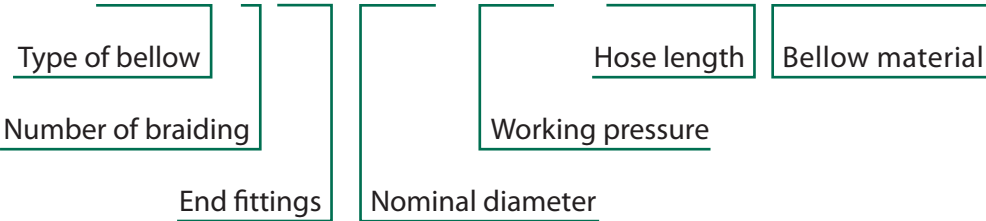
- Technological workflows are organized in the way to maximize automation of crucial processes **1, 3**
- In our product range we have unique items that are not produced anywhere else in the World. These products have been designed in cooperation with our customers. E.g.: Metal hose for gas industry with copper-coated end fittings
- VZM tests 100% of its finished products at working conditions
- Company owns precision casting technology which provides a lower-cost manufacturing of complex-shaped fittings
- Metal hoses and fittings production is located on one site that shortens considerably the order execution time

**VZM — is stability and reliability at the level of industrial giant and simultaneously flexible approach to our clients. We are happy to deal with both limited and non-standard orders.**



# Reference designation of Metal Hoses

VZM MH 015.1W 50x40x1000 AISI 321



Product performance	Reference designation	Marking example
Steel grade a hose is made from	Steel grade indication according to common standards	<b>AISI 321</b>
Type of hose	<b>MH</b> — flexible stainless steel corrugated metal hose	<b>VZM MH</b>
Type of bellow	<b>015</b> — standard model <b>017</b> — with extend flexibility <b>025</b> — with increased Pressure characteristics (Pmax) <b>030</b> — with increased mass	<b>015</b>
Number of braiding	<b>0</b> — without braiding <b>1</b> — with single braiding <b>2</b> — with double braiding <b>3</b> — with triple braiding	<b>1</b>
Type of end fittings	<b>W</b> — weld ends fittings <b>F</b> — flange coupling <b>C</b> — cam locking coupling <b>U</b> — union coupling	<b>W</b>
Nominal diameter, mm (ød <sub>3</sub> )	Number reflecting the nominal inside diameter of the hose. In the range of <b>6</b> to <b>300</b> mm	<b>50</b>
Working pressure	Maximum working pressure of carried medium, bar In the range of <b>0</b> to <b>300</b> bar	<b>40</b>
Length (L)	Overall length of metal hose. In the range of <b>500</b> mm to <b>10</b> m. For hoses with ø up to <b>50</b> mm — the total length is unlimited	<b>1000</b> (mm)

Weld ends fittings



Cam locking coupling

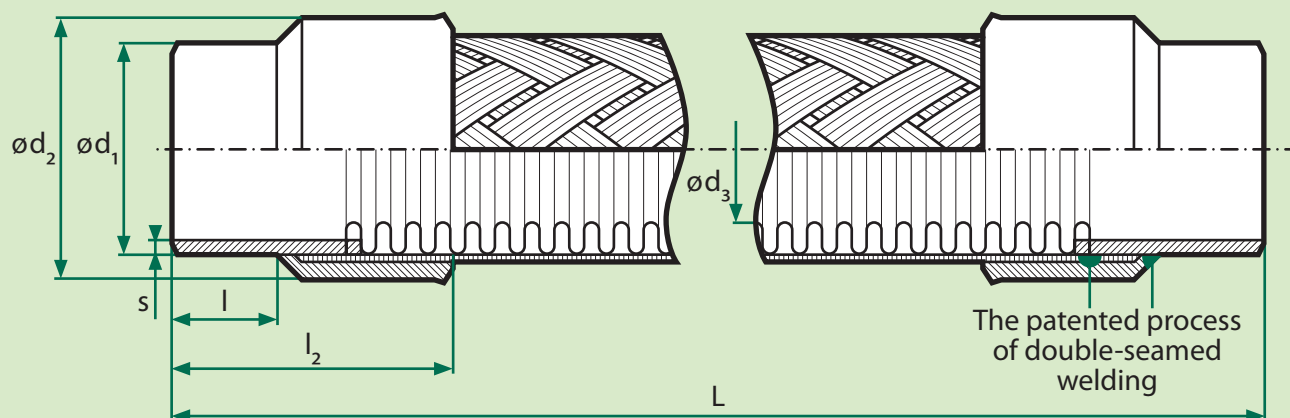


Union coupling





## Hose of standard performance



Nominal diameter	External diameter of outlet	Tolerance	External diameter of cup	Tolerance	Overall length of connective fittings	Available part of outlet	Tolerance	Thickness of outlet
$\varnothing d_3$ , mm	$\varnothing d_1$ , mm	mm	$\varnothing d_2$ , mm	mm	$l_2$ , mm	$l$ , mm	mm	$s$ , mm
6	10,1	$\pm 0,3$	17,3	$\pm 0,7$	60	40	-1,0	1,8
8	12	$\pm 0,3$	17,6	$\pm 0,7$	60	40	-1,0	2,0
10	15,9	$\pm 0,4$	23,1	$\pm 0,7$	60	40	-1,0	1,8
12	19,2	$\pm 0,4$	26,4	$\pm 0,7$	60	40	-1,0	2,0
16	22,8	$\pm 0,4$	27,9	$\pm 0,6$	60	40	-1,0	2,2
20	27	$+0,5$ $-0,6$	32,1	$\pm 0,6$	65	40	-1,0	2,5
25	33	$+0,4$ $-0,7$	38,1	$\pm 0,7$	65	40	-1,0	2,5
32	42	$+0,2$ $-0,6$	47,7	$\pm 0,7$	65	35	-1,0	2,5
40	52	$\pm 0,5$	57,7	$\pm 0,7$	70	35	-1,0	3,0
50	60,3	$\pm 0,5$	68,7	$\pm 0,8$	79	45	-1,0	3,0
65	76,1	$+0,5$ $-0,7$	85,7	$\pm 0,8$	79	45	-1,0	3,2
80	88,9	$+0,8$ $-1,0$	103,6	$\pm 0,9$	80	43	-1,0	3,5
100	114,3	$+0,5$ $-1,0$	126,6	$\pm 0,9$	80	43	-1,0	4,0
125	139,7	$+0,5$ $-1,0$	154,4	$\pm 0,9$	80	43	-1,0	4,0
150	168,3	$+1,0$ $-2,0$	182	$\pm 1,1$	102	60	-1,0	4,5
200	219	$+0,5$ $-0,8$	235,8	$\pm 1,2$	100,5	60	-1,0	6,0
250	273	$\pm 0,1$	289,2	$\pm 1,2$	125,5	80	-1,0	6,0
300	323,9	$\pm 0,1$	340,1	$\pm 1,2$	140	100	-1,0	7,1



## Ordering & contact information

When ordering metal hoses please specify:

- Hose material
- Nominal diameter ( $\phi d_3$ ), mm
- Total length (L), mm
- Bend radius, mm
- Number of braiding (0,1,2,3)
- End fittings (type and material)
- Working pressure (inside/outside), bar
- Medium (inside/outside)
- Working temperature (inside/outside), C
- Additional protective cover, if required (rubber, PTFE, etc.)



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