



*CoRiMa*

*Costruzione Ricambi*

*Macchine Industriali s.r.l.*

## Flexible Metal Pipes



Costruzione Ricambi Macchine Industriali s.r.l. designs and manufactures flexible metal pipes. These items, built using various types of steel, are used to facilitate the flow of fluids of different types, absorbing the movements and vibrations of the pipes on which they are applied and providing the necessary flexibility to the system. Our product range includes corrugated pipes with parallel coils, available both "bare" (for fluids with very low operating pressures) and with a stainless steel sleeve (for fluids with higher operating pressures), available with different types of terminals. Our products also include simple and double crimped pipes, with or without gaskets depending on the required use.

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## Corrugated metal flexible pipes

Costruzione Ricambi Macchine Industriali offers its customers flexible corrugated metal pipes with parallel coils.

These components are used for conveying any type of fluid, liquid or gaseous, ensuring sealing in the presence of pressure or vacuum. The pipes can also be used to absorb vibrations from various systems including gas exhaust, water systems and other applications. Our production has a range of diameters starting from DN6 to DN300.

### Bare pipes

Costruzione Ricambi Macchine Industriali manufactures metal pipes with parallel coils both with stainless steel braid and without. The braidless (ST) or "bare" type is used for fluids that have low operating pressures (maximum 1.5 bar), such as exhaust applications, including exhaust gases from diesel engines, methane and other types of fluids.

We can create this type of pipe without braid in either **AISI 321 stainless steel** or **316L**. Available without terminals (loose) or with terminals.

Types of terminals:

- Female notched
- Butt welded



Bare corrugated pipes with solder ends



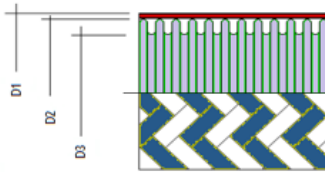
## Flexible pipes with stainless steel sleeve

The flexible corrugated pipes with stainless steel sleeve (or braid), in addition to guaranteeing the seal of the passing fluid, offer important performance in terms of traction, tear, corrosion and pressure tightness strengths. Performance is guaranteed even in very aggressive work conditions (sea water, intense vibrations and high temperatures). To increase the pressure resistance of the various fluids, the metal pipes can be equipped with one or two external braids. The choice of whether to install a single or double braid is made on the basis of the operating pressure, the operating temperature and the type of fluid. The braid is connected to the pipe fittings at both ends to absorb the internal pressure forces. Thanks to its excellent flexibility, the sleeve molds perfectly to the movement of the pipe, absorbing external traction forces and preventing the pipe from stretching due to internal pressure. An important part of the pipe, the braid, is made with strands of AISI304 metal wires twisted around the pipe and alternated in layers.

We manufacture three types of flexible pipes: the **FTN**, **FTS** and **FTR** series.

## Flexible pipes FTN series

The FTN flexible pipes are highly flexible and resistant to high pressures



DN	Size	D3 (mm)	D2 (mm)	Dynamic radius of curvature (mm)	Static radius of curvature (mm)	PN of bare pipe	D1 (mm)	PN pipe with single braid	PN pipe with double braid
6	1/8"	6,1	9,5	80	25	4	10,8	100	160
8	1/4"	8	12,2	125	25	4	13	95	130
10	3/8"	10	14,2	130	40	4	15,2	90	144
12	1/2"	12,25	16	140	50	3	18	80	128
16	5/8"	16,2	18	160	50	3	20	70	112
20	3/4"	20,3	26,7	170	70	2	28,2	64	102
25	1"	25,4	31,8	190	90	2	33	50	80
32	1 1/4"	34	41,1	250	110	1,5	42,5	40	64
40	1 1/2"	40	51	250	130	1,5	52,7	30	48
50	2"	20,2	64,5	320	175	1	66	28	44
65	2 1/2"	65	80,3	410	200	1	83,5	24	38
80	3"	79	94,4	450	205	1	97,5	18	28
100	4"	100	118	560	230	0,8	120	16	26
125	5"	125	145	660	280	0,6	154	12	20
150	6"	152	175	815	320	0,6	180	10	16
200	8"	198	235	1015	435	0,5	240	8	12
250	10"	250	280	1220	550	0,5	288	7	10
300	12"	300	330	1420	650	0,5	340	6	9

Table 1

In table 1 you will find the permissible operating pressure values at a temperature of 20°.

The values of the burst pressure are equal to four times the design pressure.

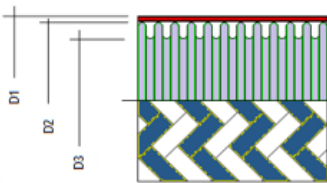
The test pressure is equal to 1.5 times the design pressure.

Our pipes with stainless steel sleeve have a temperature resistance from -200 °C to +600 °C with SS 316L corrugated pipe and -200 to +800 °C with SS 321 corrugated pipe.

The braid is made of SS 304L.

## Flexible pipes FTS series

The FTS flexible pipes are more flexible than the FTN type because of more compacted convolutions of the corrugated inner pipe



DN	Size	D3 (mm)	D2 (mm)	Dynamic radius of curvature (mm)	Static radius of curvature (mm)	PN of bare pipe	D1 (mm)	PN pipe with single braid	PN pipe with double braid
6	1/8"	6,1	9,5	70	25	4	10,8	100	160
8	1/4"	8	12,2	110	25	4	13	95	130
10	3/8"	10	14,2	115	40	4	15,2	90	144
12	1/2"	12,25	16	120	50	3	18	80	128
16	5/8"	16,2	18	140	50	3	20	70	112
20	3/4"	20,3	26,7	150	70	2	28,2	64	102
25	1"	25,4	31,8	165	90	2	33	50	80
32	1 1/4"	34	41,1	220	110	1,5	42,5	40	64
40	1 1/2"	40	51	220	130	1,5	52,7	30	48
50	2"	20,2	64,5	280	175	1	66	28	44
65	2 1/2"	65	80,3	360	200	1	83,5	24	38
80	3"	79	94,4	400	205	1	97,5	18	28
100	4"	100	118	490	230	0,8	120	16	26
125	5"	125	145			0,6	154	12	20
150	6"	152	175			0,6	180	10	16
200	8"	198	235			0,5	240	8	12
250	10"	250	280			0,5	288	7	10
300	12"	300	330			0,5	340	6	9

Table 2

In table 2 you will find the permissible operating pressure values at a temperature of 20°.

The values of the burst pressure are equal to four times the design pressure.

The test pressure is equal to 1.5 times the design pressure.

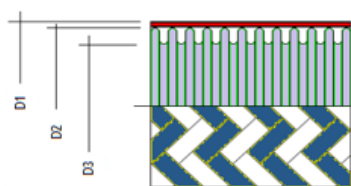
Our pipes with stainless steel sleeve have a temperature resistance from -200 °C to +600 °C with SS 316L corrugated pipe and -200 to +800 °C with SS 321 corrugated pipe.

The braid is made of SS 304L.



## Flexible pipes FTR series

The FTS flexible pipes are manufactured with reinforced ply of the corrugated inner pipe. They can resist higher pressures than FTN and FTS types



DN	Size	D3 (mm)	D2 (mm)	Dynamic radius of curvature (mm)	Static radius of curvature (mm)	PN of bare pipe	D1 (mm)	PN pipe with single braid	PN pipe with double braid
20	¾"	19,5	28,8	600	55	3,2	30	75	125
25	1"	25,6	36,5	680	70	3,2	38,1	60	100
32	1 ¼"	32,6	43,7	750	80	3,2	46	50	90
40	1 ½"	39,6	52	850	100	2	54	45	80
50	2"	51	65,5	950	130	2	68	40	65
65	2 ½"	65,5	85,4	1050	175	2	88	35	50
80	3"	76	97,5	1280	200	2	100	25	40
100	4"	102,4	125	1430	250	2	128	20	32
125	5"	127,1	152	1700	325	2	154	16	25
150	6"	151,1	177	2100	375	1,6	181	12,5	20

Table 3

In table 2 you will find the permissible operating pressure values at a temperature of 20°.

The values of the burst pressure are equal to four times the design pressure.

The test pressure is equal to 1.5 times the design pressure.

Our pipes with stainless steel sleeve have a temperature resistance from -200 °C to +600 °C with SS 316L corrugated pipe and -200 to +800 °C with SS 321 corrugated pipe.

The braid is made of SS 304L.

## Types of ends

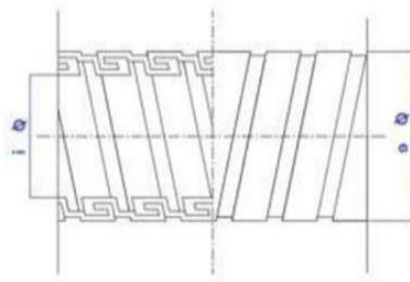
- Butt welded
- Female or male union, three NPT gas thread pieces
- Swivel nut, cylindrical gas thread, conical seat and/or flat seat
- Fixed male, cylindrical-conical gas thread
- Fixed flange
- Swivel flange



Flexible pipes with sleeve

The terminals can be of the following materials: carbon steel, AISI304 and 316L. The welding of the pipe and of the sleeve at the terminals can be performed using the TIG procedure.

## Crimped pipes



Costruzione Ricambi Macchine Industriali has been involved for over 50 years in the marketing of flexible crimped pipes, both simple and double crimp.

Given their lower resistance to dynamic stresses, simple crimped pipes are not used to compensate for system movements but for static applications, especially to protect certain types of systems such as wiring ones. The simple crimped pipes can be built with gaskets, which can be used for fluids with slight pressure or vacuum (air intake).

The double crimped pipes, instead, are used to convey the exhaust gases of combustion engines, giving the system the necessary flexibility to resist its deviations. However, this type of piping does not hold liquid fluids, for which it is necessary to choose the model formed with **gaskets**. **Double crimped pipes with gaskets** ensure the sealing of liquid fluids at a given pressure (30 bar for a double crimped pipe with an internal diameter of 15mm and 2 bar for a pipe with an internal diameter of 250mm).

Double crimped pipes have a high resistance to corrosion and excellent flexibility to compensate for axial (expansion and narrowing) and lateral movements as well as for vibrations of the pipes. We have a range of internal diameters ranging from 20 to 300mm in **galvanised steel** and **AISI 430** stainless steel. On request the pipes are also available in **AISI304**.

**We also sell to our customers single lengths of galvanised double crimped pipes without gasket with an internal diameter of 20 mm to 115mm - minimum order quantity: 1 metre. Available with terminal**

We can supply our double crimped pipes both without (loose) and with terminals

Types of ends:

- Weld-on
- Fixed/rotating flange
- Custom flange
- Female notched terminals
- With reductions



Double crimped pipe with female notched terminals

# Contacts



## **Costruzione Ricambi Macchine Industriali S.r.l.**

Via Cortina D'Ampezzo, 14 - 20139 – Milan

**Telephone:** (+ 39) 02.569.18.88 - **E-mail:** [info@corimamilano.it](mailto:info@corimamilano.it)

**Website**

