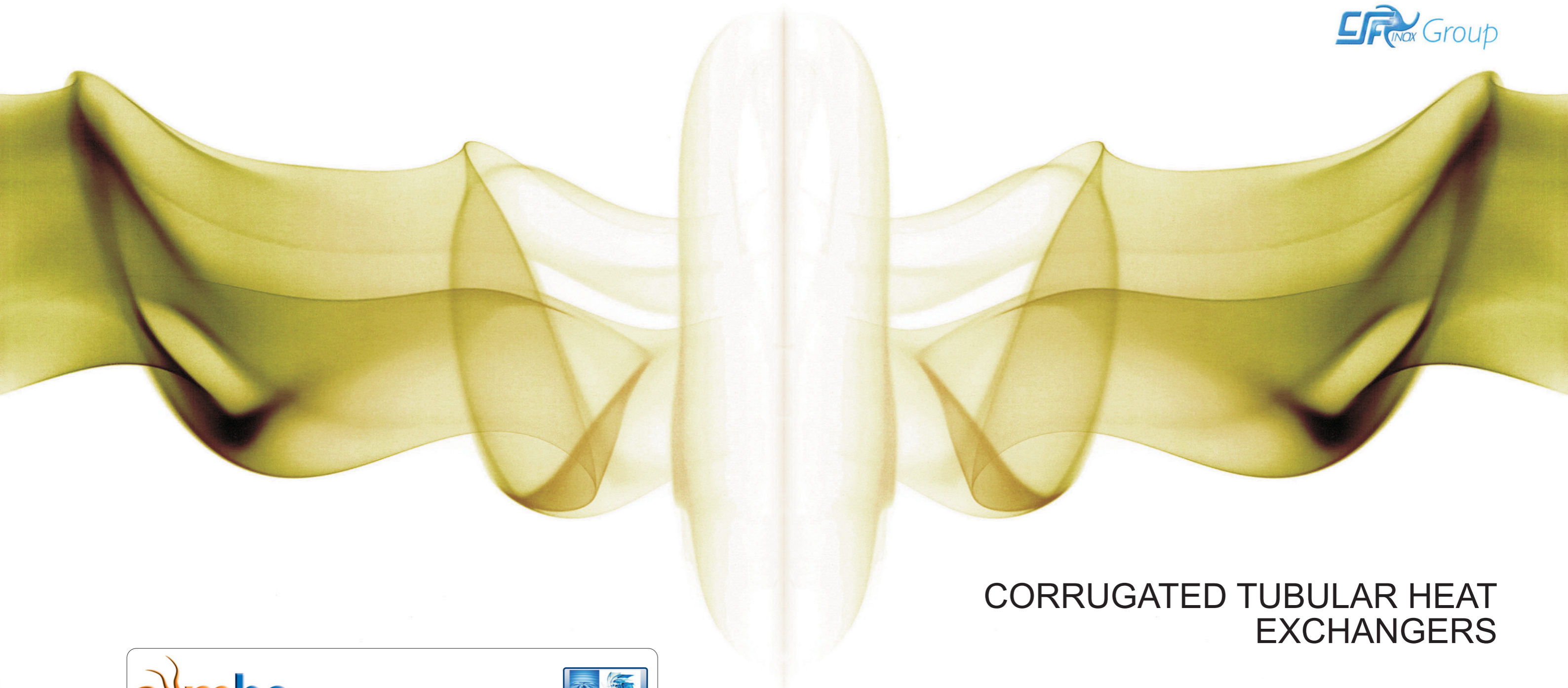


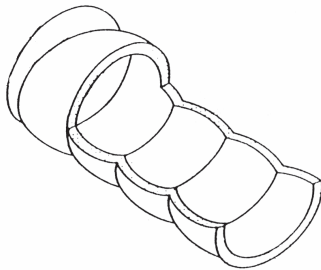
# MIXFLO

MONOTUBE SANITARY SERIE



CORRUGATED TUBULAR HEAT EXCHANGERS

## Sanitary mixflo monotube serie



## THE CORRUGATION

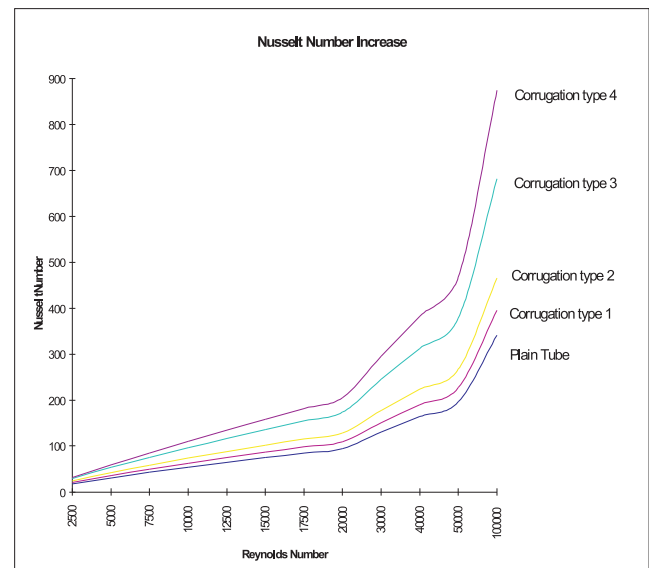
Corrugation is a particular processing applied on plain tubes to induce dynamic turbulence during the liquids flowing allowing thermal exchange optimization.

With corrugated tubes the thermal exchange efficiency can be enhanced by 40% up to 90% according to the following parameters:

- type of product
- selected profile
- type of application

## ADVANTAGES

- reduced exchange surfaces
- reduced contact and standing product time inside the element
- reduced washing time thanks to a higher action produced by turbulence
- vertical or horizontal installation
- working possibilities with high pressures and temperatures
- gaskets-free design so lower maintenance costs
- easy to install and exchanger modularity



## Sanitary mixflo monotube serie

The Monotube MIXFLO Heat Exchanger consists of two concentric corrugated tubes.

The product to be thermally processed flows inside the smaller tube while service fluid flows inside the external jacket.

The Monotube MIXFLO Heat Exchanger is fully welded with expansion joint when necessary.

### Application range

Particularly suited for thermal exchange process of products having a medium or high viscosity even with particulates.

### Standard materials

Stainless steel AISI 304/316 L  
(Other kind of materials are available on request)

### Finishing

Product side Ra < 0.8 µm

### Standard pressure project

10 bar  
(Higher pressures are available depending on utilized connections)

### Standard temperature project

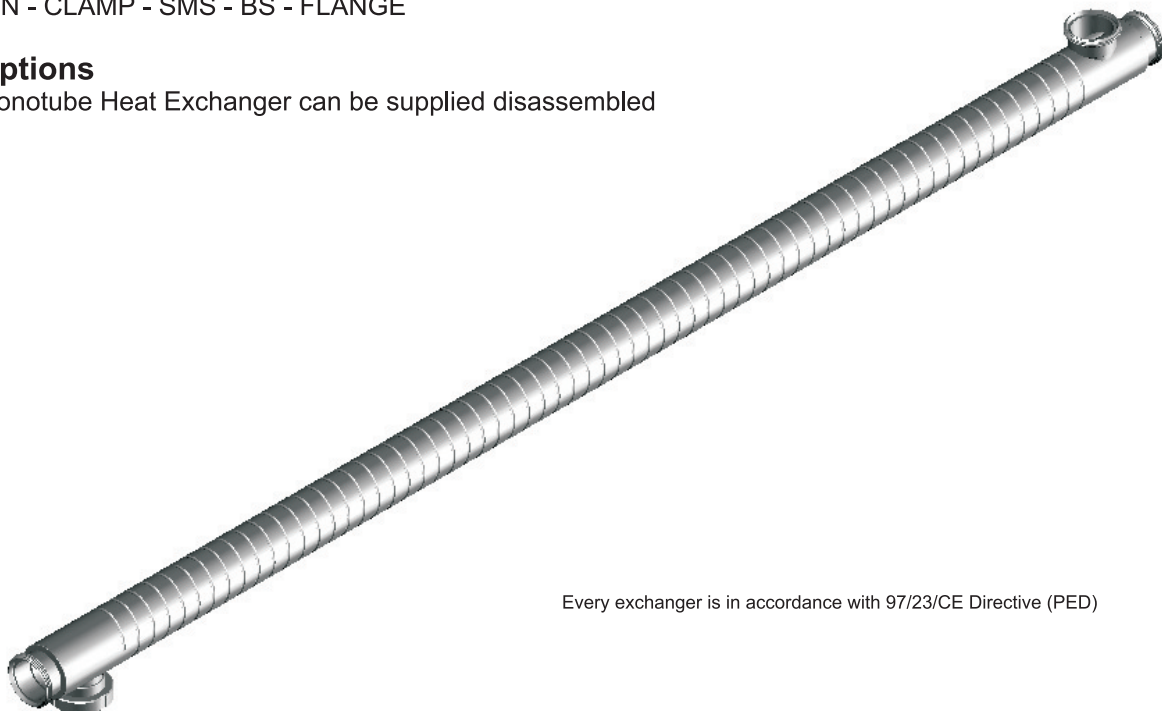
184°C

### Connections

DIN - CLAMP - SMS - BS - FLANGE

### Options

Monotube Heat Exchanger can be supplied disassembled



Every exchanger is in accordance with 97/23/CE Directive (PED)

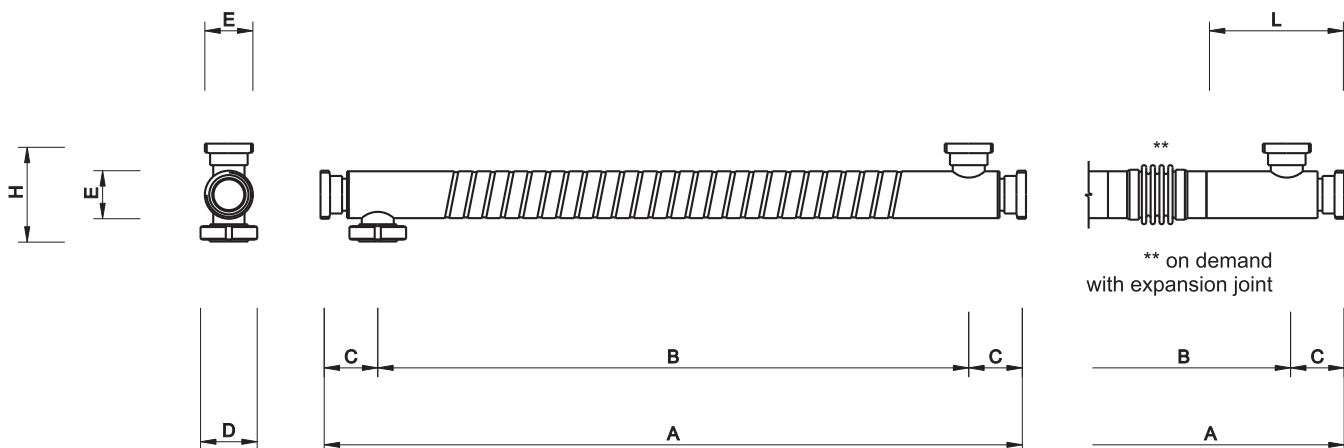
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 25 48 0 3000	2.82	1.55	0.2442	995.9	530.9	8.5
MNW 25 48 0 6000	5.75	3.07	0.4987	995.5	530.9	15.5

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3
1<sup>st</sup> Category
2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [ bar ] *															
		1	2	3	4	5	6	7	8	9	10	11	12				
MNW 25 48 0 3000	Shell / Tubes																
MNW 25 48 0 6000	Shell / Tubes									8.6							

\* for higher pressure contact MBS



MODEL	DIMENSIONS [ mm ]						
	A	B	C	D	E	H	L
MNW 25 48 0 3000	2964	2790	87	DIN 11851 DN 25 M	DIN 11851 DN 25 F	100	217.5
MNW 25 48 0 6000	5964	5790		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 32 48 0 3000	1.98	2.33	0.2442	682.5	804.2	10.1
MNW 32 48 0 6000	4.03	4.75	0.4987	682.5	804.2	18.1

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

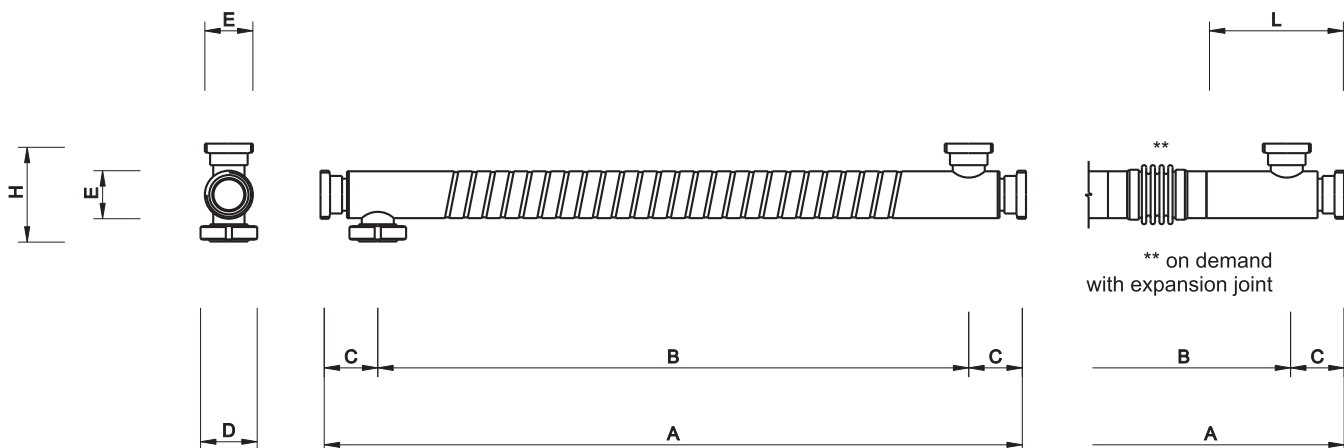
Article 3.3

1<sup>st</sup> Category

2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [ bar ] *															
		1	2	3	4	5	6	7	8	9	10	11	12				
MNW 32 48 0 3000	Shell / Tubes																
MNW 32 48 0 6000	Shell / Tubes															10.5	12.4

\* for higher pressure contact MBS



MODEL	DIMENSIONS [ mm ]						
	A	B	C	D	E	H	L
MNW 32 48 0 3000	2964	2790	87	DIN 11851 DN 32 M	DIN 11851 DN 32 F	110	217.5
MNW 32 48 0 6000	5964	5790		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

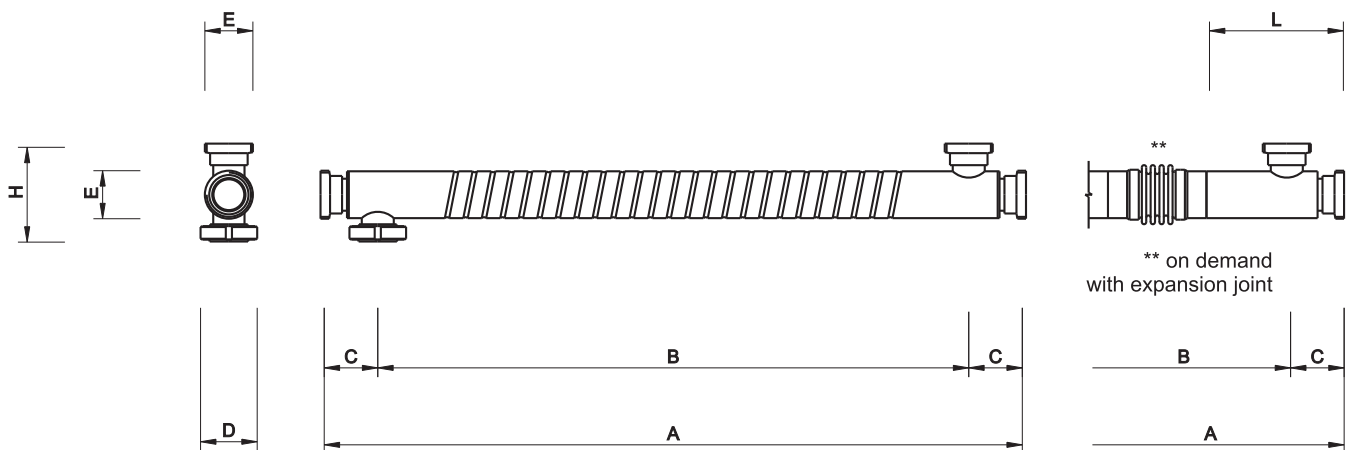
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 32 60 0 3000	4.76	2.33	0.2985	1670.7	804.2	11.5
MNW 32 60 0 6000	9.70	4.75	0.6095	1670.7	804.2	20.8

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3      1<sup>st</sup> Category      2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *															
		1	2	3	4	5	6	7	8	9	10	11	12				
MNW 32 60 0 3000	Shell / Tubes												10.5				
MNW 32 60 0 6000	Shell / Tubes					5.1								10.5			

\* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 32 60 0 3000	2964	2790	87	DIN 11851 DN 32 M	DIN 11851 DN 32 F	110	217.5
MNW 32 60 0 6000	5964	5790		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

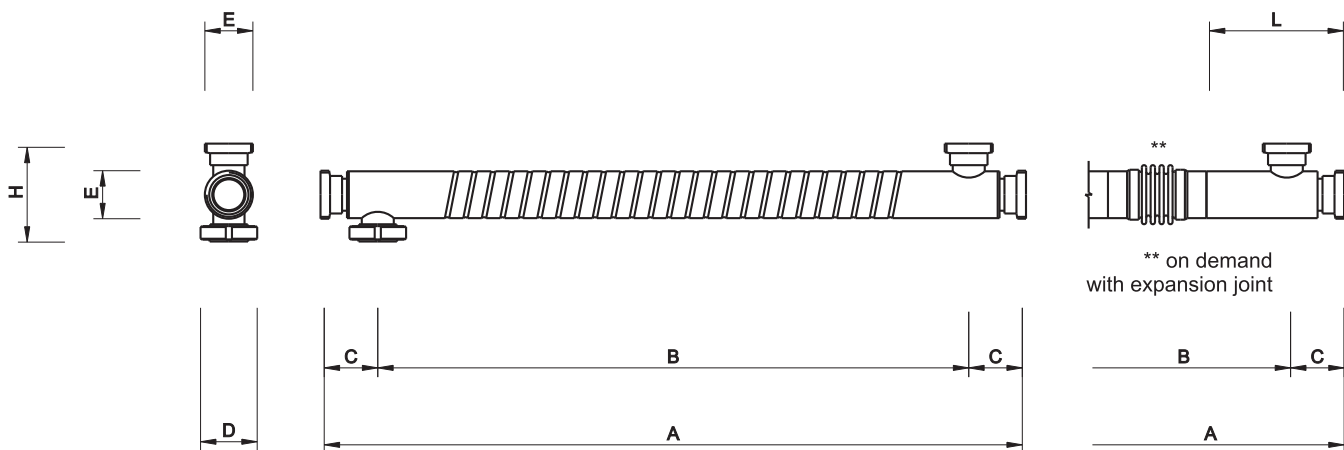
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 40 60 0 3000	3.75	3.28	0.3528	1322.1	1134.1	12.3
MNW 40 60 0 6000	7.64	6.68	0.7204	1322.1	1134.1	22.1

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3
1<sup>st</sup> Category
2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [ bar ] *														
		1	2	3	4	5	6	7	8	9	10	11	12			
MNW 40 60 0 3000	Shell / Tubes															
MNW 40 60 0 6000	Shell / Tubes						6.5	7.4								

\* for higher pressure contact MBS



MODEL	DIMENSIONS [ mm ]						
	A	B	C	D	E	H	L
MNW 40 60 0 3000	2962	2790	86	DIN 11851 DN 40 M	DIN 11851 DN 40 F	120	215
MNW 40 60 0 6000	5962	5790		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

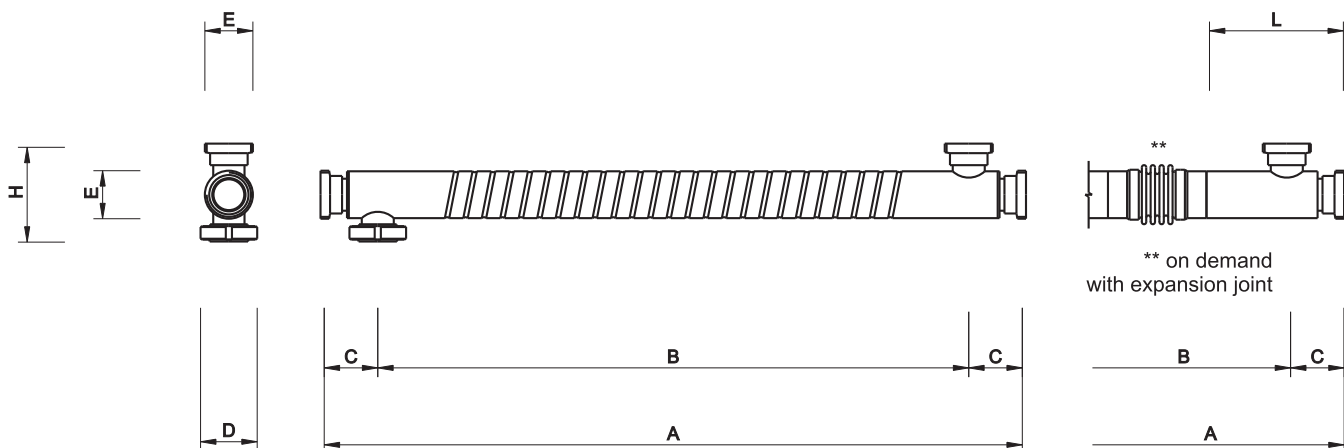
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 40 76 0 3000	8.49	3.28	0.3528	3161.2	1134.1	14.0
MNW 40 76 0 6000	17.27	6.68	0.7204	3161.2	1134.1	25.6

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3
1<sup>st</sup> Category
2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [ bar ] *															
		1	2	3	4	5	6	7	8	9	10	11	12				
MNW 40 76 0 3000	Shell / Tubes					5.8											
MNW 40 76 0 6000	Shell / Tubes		2.8						7.4							11.5	

\* for higher pressure contact MBS



MODEL	DIMENSIONS [ mm ]						
	A	B	C	D	E	H	L
MNW 40 76 0 3000	2962	2790	86	DIN 11851 DN 40 M	DIN 11851 DN 40 F	120	215
MNW 40 76 0 6000	5962	5790		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise



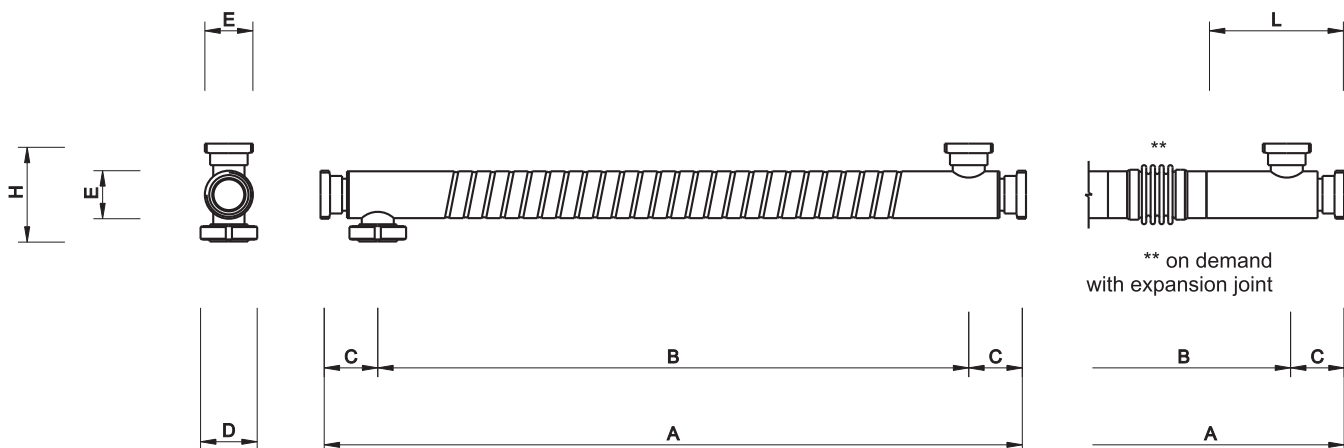
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 50 76 0 3000	5.97	5.56	0.4523	2233.3	1885.7	15.0
MNW 50 76 0 6000	12.17	11.22	0.9236	2233.3	1885.7	26.8

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3      1<sup>st</sup> Category      2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *																
		1	2	3	4	5	6	7	8	9	10	11	12					
MNW 50 76 0 3000	Shell / Tubes								8.3	8.9								
MNW 50 76 0 6000	Shell / Tubes				4.1	4.4												

\* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 50 76 0 3000	2962	2790	86	DIN 11851 DN 50 M	DIN 11851 DN 50 F	140	215
MNW 50 76 0 6000	5962	5790		more connections on demand	more connections on demand		

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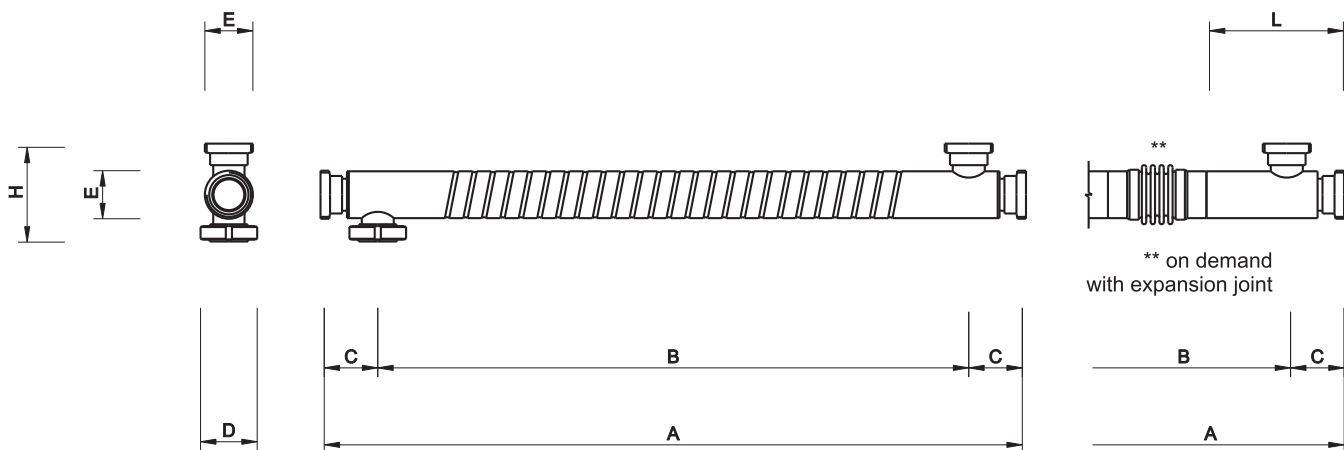
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 50 88 0 3000	9.91	5.56	0.4523	3418.1	1885.7	15.0
MNW 50 88 0 6000	20.16	11.22	0.9236	3418.1	1885.7	26.8

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3      1<sup>st</sup> Category      2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *															
		1	2	3	4	5	6	7	8	9	10	11	12				
MNW 50 88 0 3000	Shell / Tubes					5.0				8.9							
MNW 50 88 0 6000	Shell / Tubes		2.4			4.4					9.9						

\* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 50 88 0 3000	2962	2790	86	DIN 11851 DN 50 M	DIN 11851 DN 50 F	140	215
MNW 50 88 0 6000	5962	5790		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

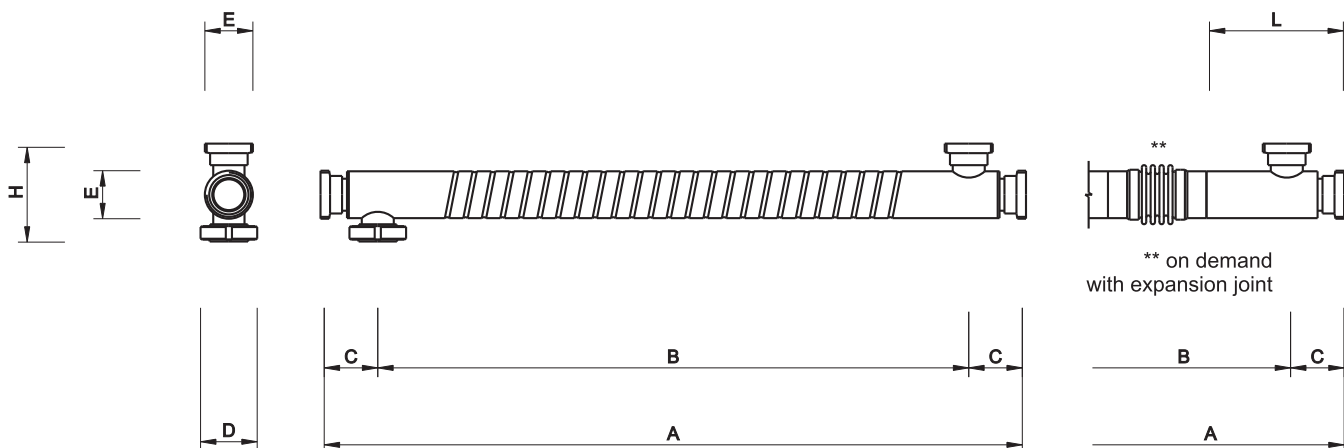
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 65 88 0 3000	4.91	10.21	0.6088	1693.3	1885.7	16.5
MNW 65 88 0 6000	9.99	20.79	1.2497	1693.3	1885.7	29.7

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3      1<sup>st</sup> Category      2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *															
		1	2	3	4	5	6	7	8	9	10	11	12				
MNW 65 88 0 3000	Shell / Tubes					4.8							10.1				
MNW 65 88 0 6000	Shell / Tubes			2.4				5.0						9.6			

\* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 65 88 0 3000	2964	2700	132	DIN 11851 DN 65 M	DIN 11851 DN 65 F	160	330
MNW 65 88 0 6000	5964	5700		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 65 101 0 3000	10.53	10.21	0.6088	3633.1	3525.6	22.2
MNW 65 101 0 6000	21.43	20.79	1.2497	3633.1	3525.6	36.2

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

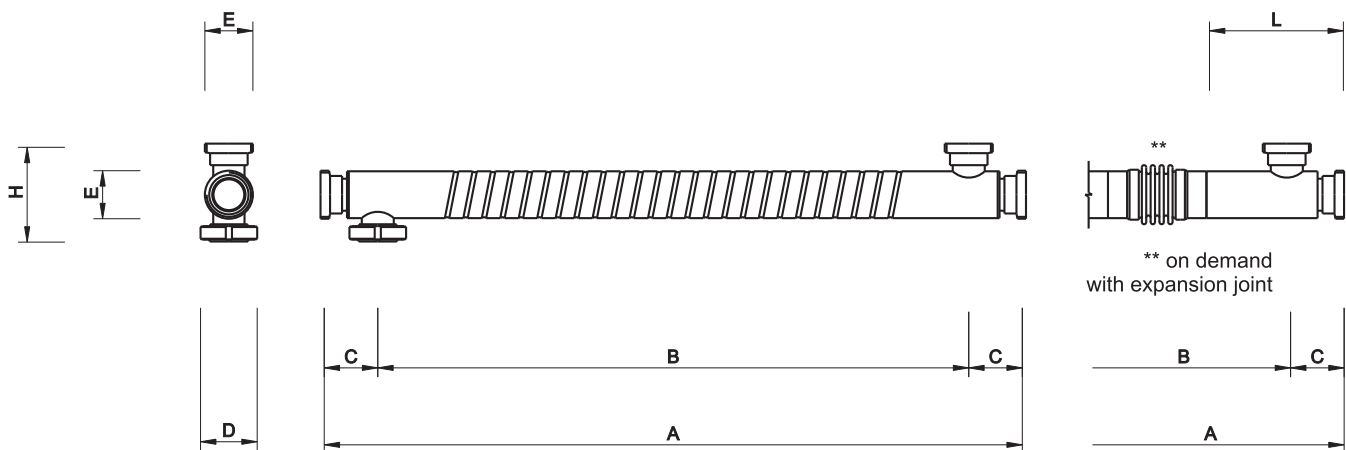
Article 3.3

1<sup>st</sup> Category

2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *																					
		1	2	3	4	5	6	7	8	9	10	11	12										
MNW 65 101 0 3000	Shell / Tubes				4.7	4.8																	
MNW 65 101 0 6000	Shell / Tubes		2.3	2.4									9.3	9.6									

\* for higher pressure contact MBS



\*\* on demand with expansion joint

MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 65 101 0 3000	2964	2700	132	DIN11851 DN 65 M	DIN11851 DN 65 F	160	330
MNW 65 101 0 6000	5964	5700		more connections on demand	more connections on demand		

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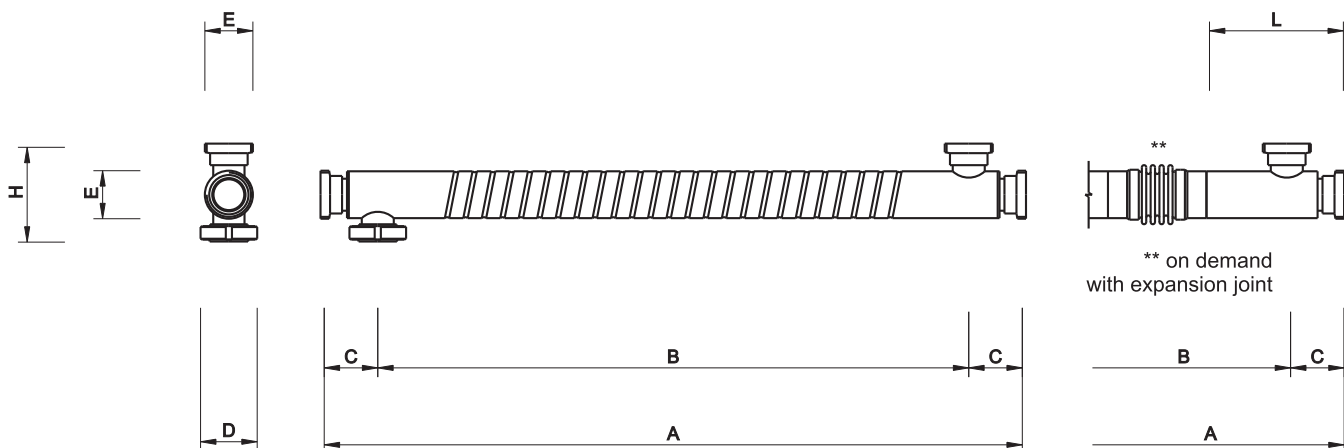
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 65 114 0 3000	16.75	10.21	0.6088	5706.7	3525.6	25.6
MNW 65 114 0 6000	34.07	20.79	1.2497	5706.7	3525.6	38.2

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3      1<sup>st</sup> Category      2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *														
		1	2	3	4	5	6	7	8	9	10	11	12			
MNW 65 114 0 3000	Shell / Tubes		2.9			4.8								11.9		
MNW 65 114 0 6000	Shell / Tubes	1.4		2.4			5.8						9.6			

\* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 65 114 0 3000	2964	2700	132	DIN 11851 DN 65 M	DIN 11851 DN 65 F	160	330
MNW 65 114 0 6000	5964	5700		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

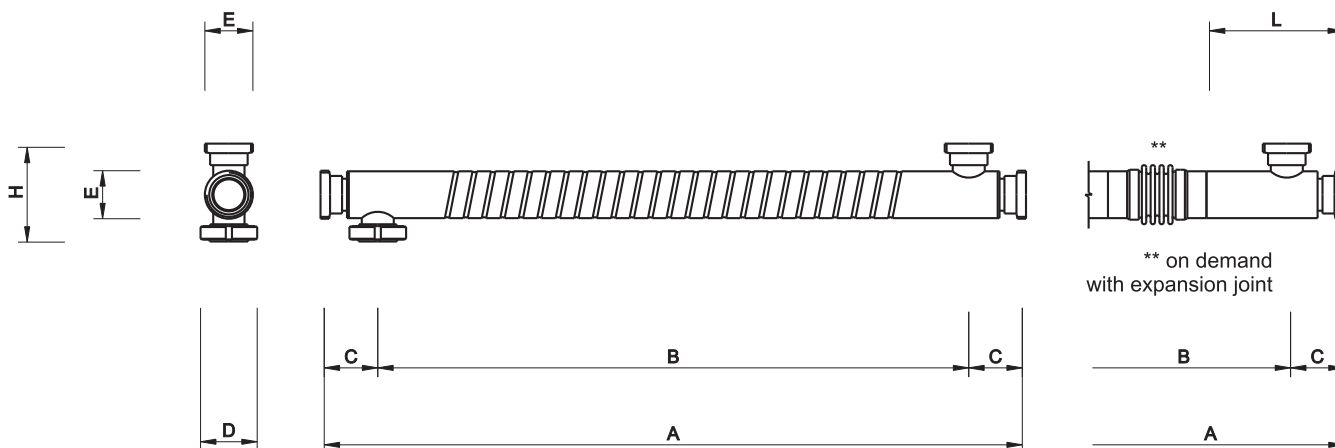
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 80 114 0 3000	11.10	15.57	0.7431	3828.8	5281.0	30.6
MNW 80 114 0 6000	27.59	31.42	0.7431	3828.8	5281.0	40.1

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3     1<sup>st</sup> Category     2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *														
		1	2	3	4	5	6	7	8	9	10	11	12			
MNW 80 114 0 3000	Shell / Tubes			3.2	4.5											12.8
MNW 80 114 0 6000	Shell / Tubes	1.8	1.5						6.3	7.2						

\* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 80 114 0 3000	2968	2700	134	DIN 11851 DN 80 M	DIN 11851 DN 80 F	180	335
MNW 80 114 0 6000	5968	5700		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

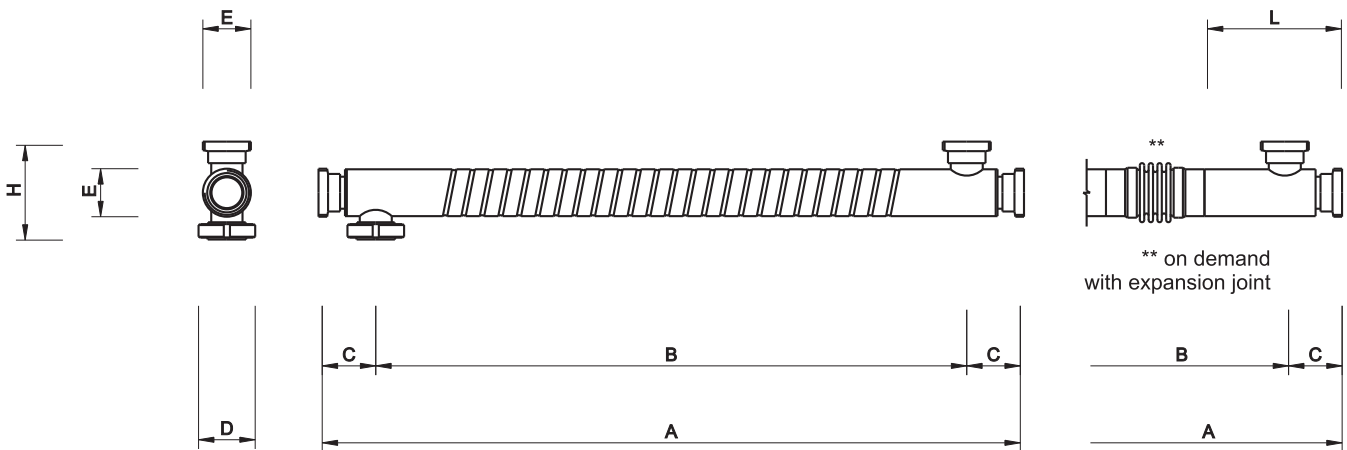
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 80 139 0 3000	25.05	15.57	0.7431	8639.3	5281	38.2
MNW 80 139 0 6000	50.97	31.42	1.5254	8639.3	5281	47.7

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3     1<sup>st</sup> Category     2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [ bar ] *																							
		1	2	3	4	5	6	7	8	9	10	11	12												
MNW 80 139 0 3000	Shell / Tubes	1.9			3.2							7.9												12.8	
MNW 80 139 0 6000	Shell / Tubes		1.5			3.9							6.3												

\* for higher pressure contact MBS



MODEL	DIMENSIONS [ mm ]						
	A	B	C	D	E	H	L
MNW 80 139 0 3000	2968	2700	134	DIN 11851 DN 80 M	DIN 11851 DN 80 F	180	335
MNW 80 139 0 6000	5968	5700		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

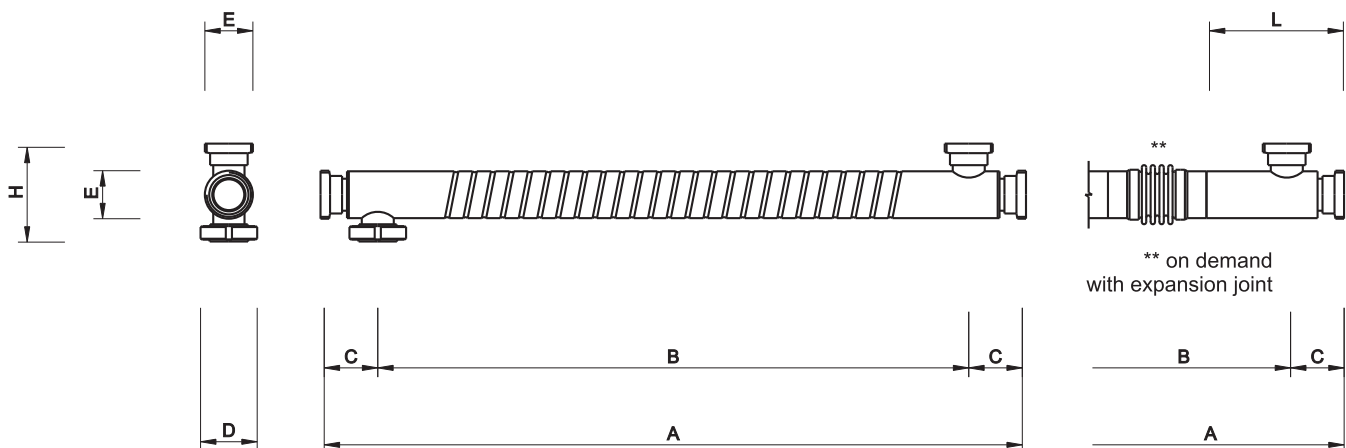
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 100 139 0 3000	17.99	21.68	0.8917	6206.5	7481.5	44.7
MNW 100 139 0 6000	36.61	44.11	1.8304	6206.5	7481.5	78.7

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3
1<sup>st</sup> Category
2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *														
		1	2	3	4	5	6	7	8	9	10	11	12			
MNW 100 139 0 3000	Shell / Tubes		2.7	2.3								9.2		11.1		
MNW 100 139 0 6000	Shell / Tubes	1.3	1.1				4.5	5.4								

\* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 100 139 0 3000	2968	2700	134	DIN 11851 DN 100 M	DIN 11851 DN 100 F	220	335
MNW 100 139 0 6000	5968	5700		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise



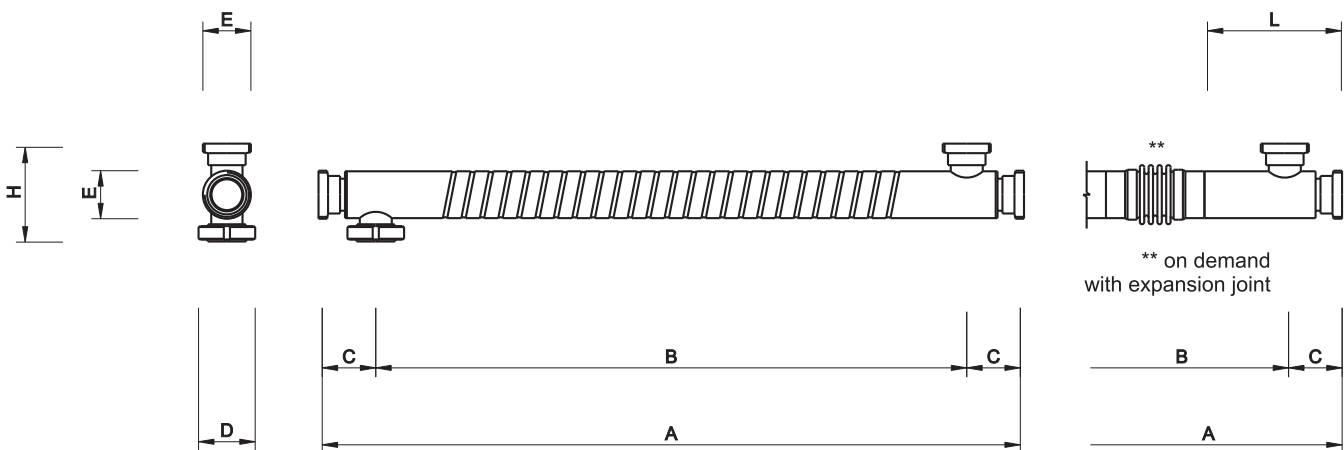
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 100 154 0 3000	27.73	21.68	0.8917	9564.1	7481.5	46.9
MNW 100 154 0 6000	56.42	44.11	1.8304	9564.1	7481.5	83.0

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3      1<sup>st</sup> Category      2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [bar] *																
		1	2	3	4	5	6	7	8	9	10	11	12					
MNW 100 154 0 3000	Shell / Tubes	1.8		2.3						7.2				9.2				
MNW 100 154 0 6000	Shell / Tubes		1.1			3.5			4.5									

\* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MNW 100 154 0 3000	2968	2700	134	DIN 11851 DN 100 M	DIN 11851 DN 100 F	220	335
MNW 100 154 0 6000	5968	5700		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

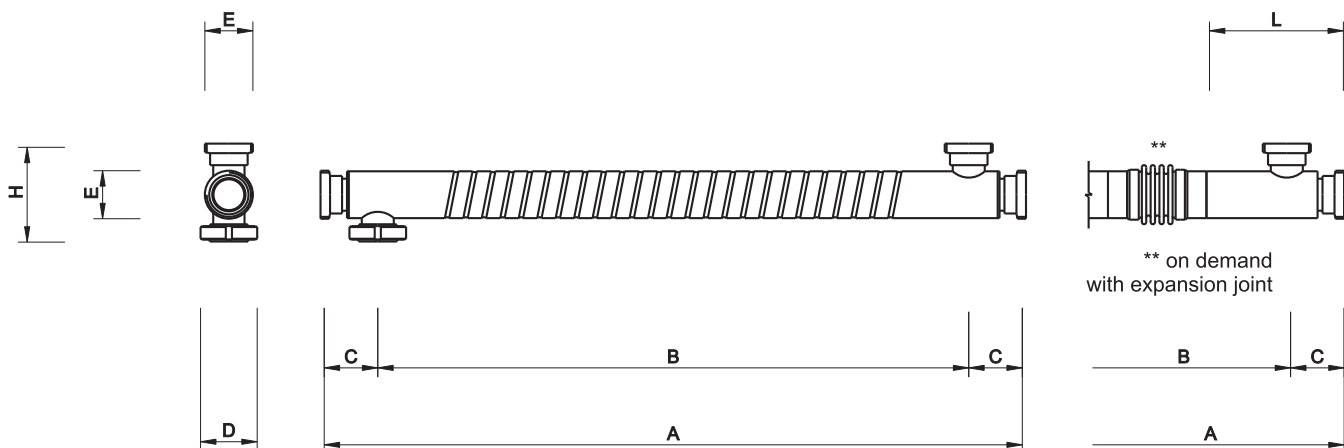
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m <sup>2</sup> ]	SHELL SECTION [mm <sup>2</sup> ]	TUBES SECTION [mm <sup>2</sup> ]	WEIGHT [kg]
MNW 100 168 0 3000	37.74	21.68	0.8917	13016.7	7481.5	48.8
MNW 100 168 0 6000	76.79	44.11	1.8304	13016.7	7481.5	86.6

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 3.3      1<sup>st</sup> Category      2<sup>nd</sup> Category

MODEL	VOLUME [litres]	PRESSURE [ bar ] *															
		1	2	3	4	5	6	7	8	9	10	11	12				
MNW 100 168 0 3000	Shell / Tubes	1.3	2.3			5.2					9.2						
MNW 100 168 0 6000	Shell / Tubes		1.1	2.6		4.5											

\* for higher pressure contact MBS



MODEL	DIMENSIONS [ mm ]						
	A	B	C	D	E	H	L
MNW 100 168 0 3000	2968	2700	134	DIN 11851 DN 100 M	DIN 11851 DN 100 F	220	335
MNW 100 168 0 6000	5968	5700		more connections on demand	more connections on demand		

Not binding technical datas; may be modified by the Manufactures without advise

# Sanitary mixflo monotube serie

## Codification

MNW	50	76	1	3000	C	C	S	A	A
								Material Product / Service A - EN 1.4301 - AISI 304 B - EN 1.4404 - AISI 316 L	
								Gaskets Material S - SILICONE V - VITON N - NBR E - EPDM T - TEFLON - GASKET'S NOT INCLUDED	
								Element connections Product / Service D - DIN 11851 - DIN 11864 - 1 C - CLAMP ISO 2852 - ASME BPE - DIN 11864 - 2 - 3 - DIN 32676 S - SMS B - BRITISH STANDARD MILK A - WELDING CONNECTION F - FLANGE EN - ANSI G - GAS UNI 338 - RJT	
								Lenght [ mm ]	
								Expansion joint 0 - Excluded 1 - Included	
								Sheet diameter [ mm ]	
								Product diameter [ mm ]	
Monotube version MNW - Total welded version MND - Disassembly version									