

TUBULAR STEAM HEATER

DETAILED OVERVIEW FOR TYPE 'TSHXA'
HIGH PRESSURE - 60 BAR



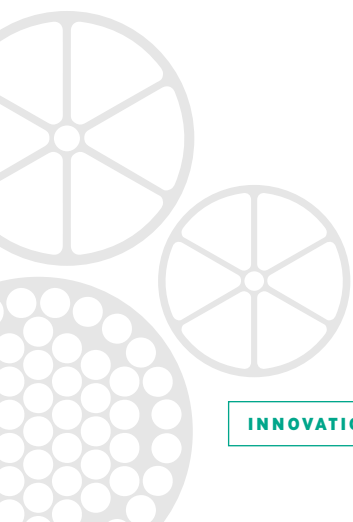
Dimensions overview for type Ø133 - 60bar[g]

Tubular steam heaters are highly used in the food and beverage industry and in connection with many applications such as CIP units. In the food and beverage industry tubular heat exchangers are often used in systems to reduce or eliminate microbials to make products safe for consumption and to extend their shelf life. A tubular heat exchanger may also be used to heat or cool products prior to filling, drying, concentration or other processes.



Contents

Introduction	3
Regulations and Directives	3
Documentation	3
Group specifications.....	4
Connections	5
Service side limits.....	5
TSHXA-01-133-60	6
TSHXA-01-133-60-F	7
TSHXA-02-133-60	8
TSHXA-02-133-60-F	9
TSHXA-03-133-60	10
TSHXA-03-133-60-F	11



Introduction

This overview is for Tubular Steam Heaters manufactured by Wila A/S under the category "TSHXA" hereinafter referred to as "Heat Exchanger". A Tubular Heat Exchanger is by design, two Pressure chambers in a combined housing.

The inner chamber consists of both ends and the insides of all tubes in the tube bundle, hereinafter referred to as "Tube side" or "Product side".

The outer pressure chamber consists of the outside of the tube bundle, and the inside of the exchangers outer shell, hereinafter referred to as "Shell side" or "Service side".

The Heat Exchanger is intended for a steam to fluid heat transfer and is made from EN.1.4404 (AISI 316L) stainless steel with a sanitary surface finish. The tube side is suitable for food stuff fluids, such as dairy products and juices. The entire insdie surface roughness is $\leq 0,8\mu\text{m}$ and the outside surface roughness is $\leq 1,6\mu\text{m}$. **All fluid media in use with the Heat exchanger, must be compatible with EN.1.4404 (AISI 316L) Stainless Steel.**

The 60 BAR (870 PSI), maximum product side pressure, heat exchanger design is based on either a Ø133x4 shell. Other sizes and pressure ratings are also available.

Regulations and Directives

The heat exchanger is designed and manufactured in accordance with

- the European Commission regulation No. 2023/2006 (Good Manufacturing Practices)
- the European Parliament directive No. EN 1935/2004 (Food Contact Materials).
- the European Parliament directive No. EN 1907/2006 (Chemical Restrictions (REACH).
- PED - Article 4.3 (SEP) in the European Parliament directive No. 2014/68/EU (Pressure Equipment Directive). The Heat Exchanger is only designed for fluid group 2 (non-dangerous fluids). For (dangerous fluids) group I restrictions may apply.
- 3-A Sanitary Standards 00-01 / 12-08

Documentation

1. Customer drawing with description and design data table
2. Declaration of conformity
3. Pressure test certificate
4. User Manual

As Supplement the following can be provided:

5. 3.1 material certificates according to EN 10204
6. Weld-logs with associated welding certificates according to DS/EN ISO 9601-1.

Group specifications

Group ordering codes and specifications are as listed below. A more detailed group tables with unit codes and main dimensions can be found on the following pages.

TSHXA-xx-133-60

TSHXA **T**ubular **S**team **H**eater with eccentric product side reducer with **3A** certificate.
 xx 01, 02, 03 Indicates the heat transfer surface area in m².
 xxx Either 133 Indicates the heat exchanger shell diameter in mm.
 60 The heat exchanger is designed for pressure up to 60 bar.

* Other versions are available.

TSHXA-xx-xxx-yyy-zz

xx See above
 xxx See above
 yyy See below Indicates tube side clamp ferrule connection.
 zz See below Indicates shell side clamp ferrule connection.

Tube side (P1 and P2) connections are:

Shell size's	Tube side connection size's	
Ø129mm	DN100 – DN80 – DN65	in accordance with DIN 32676-A
Ø129mm	Ø101.6 – Ø76.1 – Ø63.5	In accordance with ISO 2852-2

Shell side (S1 and S2) connections, both Ø129 and Ø209 are:

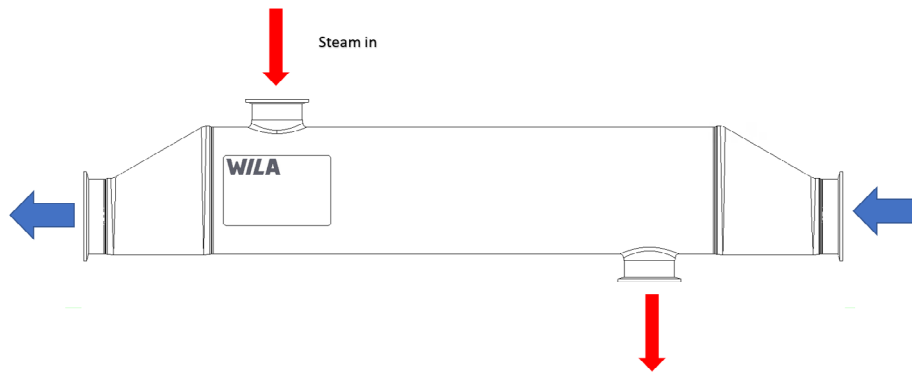
DN80 – DN65 – DN50 – DN40 – DN25	in accordance with DIN 32676-A
Ø76.1 – Ø63.5 – Ø51 – Ø38 – Ø25	in accordance with ISO 2852-2
DN80 (82) – DN65 (70) – DN50 (54) – DN40 (43) – DN25 (28) *	in accordance with DIN 2633 / EN 1092 Type 11

* Numbers in parentheses are numbers used in the unit codes on following pages.

For both tube and shell sides other connections types and sizes are available.

Connections

Always follow your fitting supplier guidelines and local legislations. Depending on the connection size either SH or SSH clamping rings (or similar) are recommended. For steam connections the outlet should always be at the lowest point.



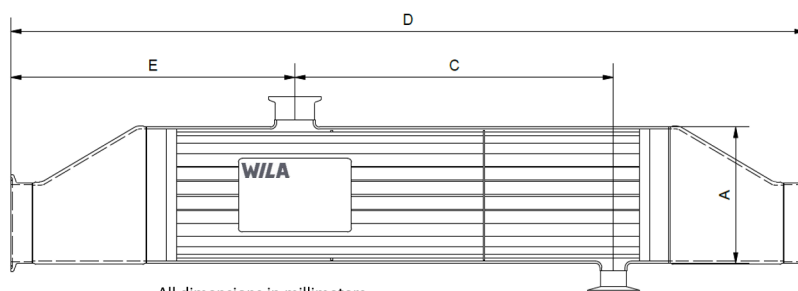
Service side limits

The heat exchanger's shell side maximum pressure and temperature limits are based on the maximum allowed steam pressure, which varies with the size of the heat exchanger:

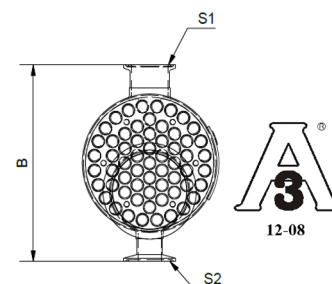
1. For heat exchanger size 1 m² these limits are respectively 10 bar[g] and 185°C
2. For heat exchanger size 2 m² these limits are respectively 8 bar[g] and 176°C
3. For heat exchanger size 3 m² these limits are respectively 6 bar[g] and 165°C

Note:

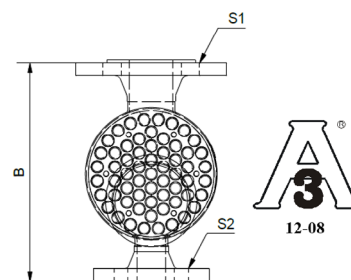
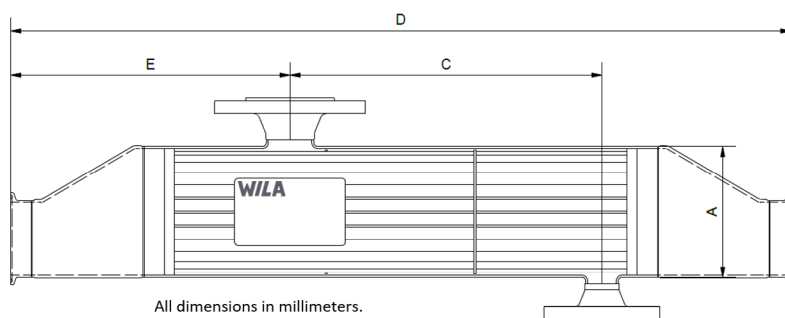
In the following group tables 'Tube bank' is data on the product tubes running parallel inside the shell.



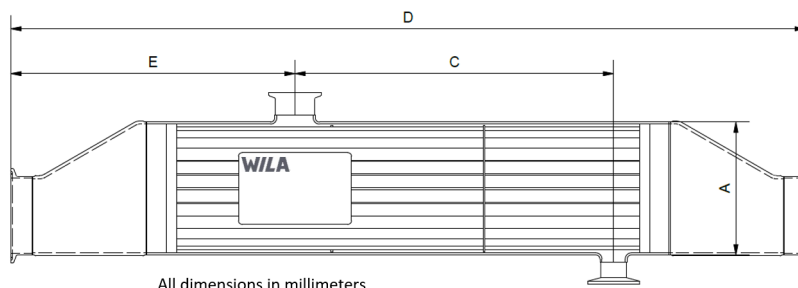
All dimensions in millimeters.



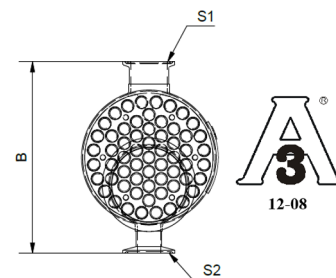
TSHXA-01-133-60		60 barg / 85°C		10 bar[g] / 185°C			Maximum pressure / temperature			
		Volume 6 liters		Volume 2.5 liters			316L Eccentric		Dry weight 19 kg	
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-80	W-041545	DN100	Ø133	DN80	DN40	195	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-80	W-041546	Ø101.6	Ø133	DN80	DN40	195	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-80	W-041547	DN80	Ø133	DN80	DN40	195	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-80	W-041548	Ø76.1	Ø133	DN80	DN40	195	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-76	W-041549	DN100	Ø133	Ø76.1	Ø38	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-76	W-041550	Ø101.6	Ø133	Ø76.1	Ø38	189	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-76	W-041551	DN80	Ø133	Ø76.1	Ø38	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-76	W-041552	Ø76.1	Ø133	Ø76.1	Ø38	189	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-65	W-041553	DN100	Ø133	DN65	DN40	195	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-65	W-041554	Ø101.6	Ø133	DN65	DN40	195	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-65	W-041555	DN80	Ø133	DN65	DN40	195	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-65	W-041556	Ø76.1	Ø133	DN65	DN40	195	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-63	W-041557	DN100	Ø133	Ø63.5	Ø38	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-63	W-041558	Ø101.6	Ø133	Ø63.5	Ø38	189	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-63	W-041559	DN80	Ø133	Ø63.5	Ø38	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-63	W-041560	Ø76.1	Ø133	Ø63.5	Ø38	189	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-50	W-041561	DN100	Ø133	DN50	DN25	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-50	W-041562	Ø101.6	Ø133	DN50	DN25	189	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-50	W-041563	DN80	Ø133	DN50	DN25	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-50	W-041564	Ø76.1	Ø133	DN50	DN25	189	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-51	W-041565	DN100	Ø133	Ø51	Ø25	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-51	W-041566	Ø101.6	Ø133	Ø51	Ø25	189	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-51	W-041567	DN80	Ø133	Ø51	Ø25	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-51	W-041568	Ø76.1	Ø133	Ø51	Ø25	189	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-40	W-041569	DN100	Ø133	DN40	DN25	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-40	W-041570	Ø101.6	Ø133	DN40	DN25	189	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-40	W-041571	DN80	Ø133	DN40	DN25	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-40	W-041572	Ø76.1	Ø133	DN40	DN25	189	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-38	W-041573	DN100	Ø133	Ø38	Ø25	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-38	W-041574	Ø101.6	Ø133	Ø38	Ø25	189	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-38	W-041575	DN80	Ø133	Ø38	Ø25	189	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-38	W-041576	Ø76.1	Ø133	Ø38	Ø25	189	310	797	285	61 pc Ø12x1mm



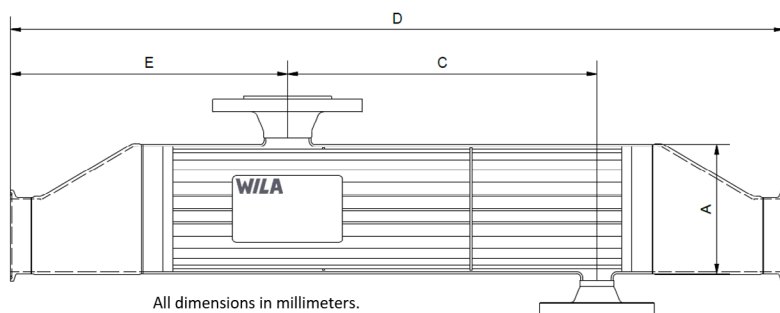
TSHXA-01-133-60-F		60 barg / 85°C		10 bar[g] / 185°C			Maximum pressure / temperature			
		Volume 6 liters		Volume 2.5 liters			316L Eccentric		Dry weight 19 kg	
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-82F	W-041665	DN100	Ø133	DN80	DN40	232	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-82F	W-041666	Ø101.6	Ø133	DN80	DN40	232	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-82F	W-041667	DN80	Ø133	DN80	DN40	232	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-82F	W-041668	Ø76.1	Ø133	DN80	DN40	232	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-70F	W-041669	DN100	Ø133	DN65	DN40	227	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-70F	W-041670	Ø101.6	Ø133	DN65	DN40	227	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-70F	W-041671	DN80	Ø133	DN65	DN40	227	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-70F	W-041672	Ø76.1	Ø133	DN65	DN40	227	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-54F	W-041673	DN100	Ø133	DN50	DN25	224	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-54F	W-041674	Ø101.6	Ø133	DN50	DN25	224	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-54F	W-041675	DN80	Ø133	DN50	DN25	224	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-54F	W-041676	Ø76.1	Ø133	DN50	DN25	224	310	797	285	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-01-133-100-43F	W-041677	DN100	Ø133	DN40	DN25	221	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-101-43F	W-041678	Ø101.6	Ø133	DN40	DN25	221	310	797	285	61 pc Ø12x1mm
TSHXA-01-133-080-43F	W-041679	DN80	Ø133	DN40	DN25	221	310	810	291	61 pc Ø12x1mm
TSHXA-01-133-076-43F	W-041680	Ø76.1	Ø133	DN40	DN25	221	310	797	285	61 pc Ø12x1mm



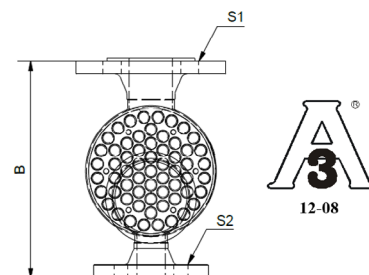
All dimensions in millimeters.



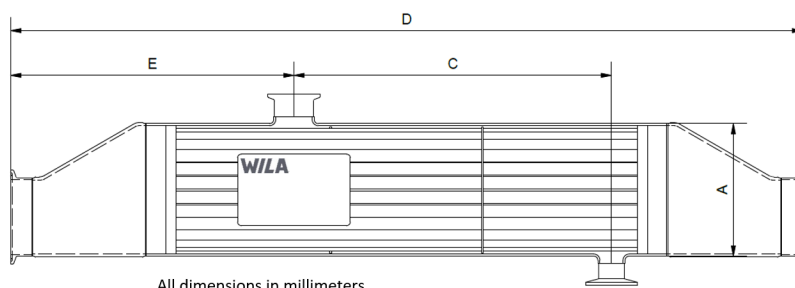
TSHXA-02-133-60		60 barg / 85°C		8 bar[g] / 176°C			Maximum pressure / temperature			
		Volume 8.5 liters		Volume 5 liters			316L Eccentric		Dry weight 34 kg	
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-80	W-041585	DN100	Ø133	DN80	DN40	195	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-80	W-041586	Ø101.6	Ø133	DN80	DN40	195	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-80	W-041587	DN80	Ø133	DN80	DN40	195	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-80	W-041588	Ø76.1	Ø133	DN80	DN40	195	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-76	W-041589	DN100	Ø133	Ø76.1	Ø38	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-76	W-041590	Ø101.6	Ø133	Ø76.1	Ø38	189	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-76	W-041591	DN80	Ø133	Ø76.1	Ø38	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-76	W-041592	Ø76.1	Ø133	Ø76.1	Ø38	189	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-65	W-041593	DN100	Ø133	DN65	DN40	195	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-65	W-041594	Ø101.6	Ø133	DN65	DN40	195	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-65	W-041595	DN80	Ø133	DN65	DN40	195	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-65	W-041596	Ø76.1	Ø133	DN65	DN40	195	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-63	W-041597	DN100	Ø133	Ø63.5	Ø38	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-63	W-041598	Ø101.6	Ø133	Ø63.5	Ø38	189	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-63	W-041599	DN80	Ø133	Ø63.5	Ø38	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-63	W-041600	Ø76.1	Ø133	Ø63.5	Ø38	189	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-50	W-041601	DN100	Ø133	DN50	DN25	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-50	W-041602	Ø101.6	Ø133	DN50	DN25	189	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-50	W-041603	DN80	Ø133	DN50	DN25	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-50	W-041604	Ø76.1	Ø133	DN50	DN25	189	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-51	W-041605	DN100	Ø133	Ø51	Ø25	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-51	W-041606	Ø101.6	Ø133	Ø51	Ø25	189	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-51	W-041607	DN80	Ø133	Ø51	Ø25	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-51	W-041608	Ø76.1	Ø133	Ø51	Ø25	189	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-40	W-041609	DN100	Ø133	DN40	DN25	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-40	W-041610	Ø101.6	Ø133	DN40	DN25	189	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-40	W-041611	DN80	Ø133	DN40	DN25	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-40	W-041612	Ø76.1	Ø133	DN40	DN25	189	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	DN25	B	C	D	E	Tube bank
TSHXA-02-133-100-38	W-041613	DN100	Ø133	Ø38	Ø25	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-38	W-041614	Ø101.6	Ø133	Ø38	Ø25	189	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-38	W-041615	DN80	Ø133	Ø38	Ø25	189	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-38	W-041616	Ø76.1	Ø133	Ø38	Ø25	189	655	1277	420	61 pc Ø12x1mm



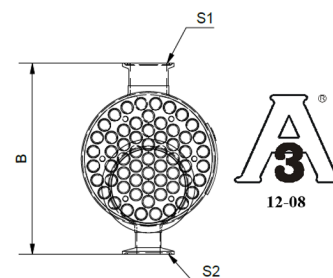
All dimensions in millimeters.



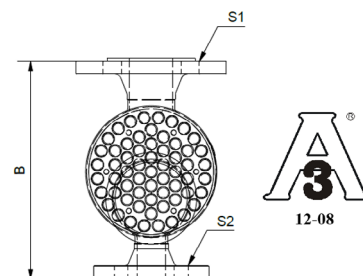
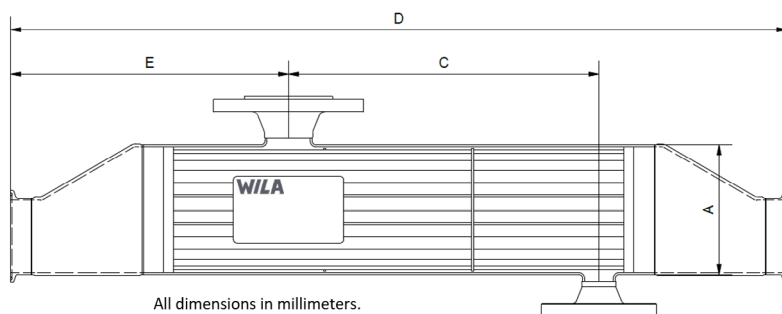
TSHXA-02-133-60-F		60 barg / 85°C		8 bar[g] / 176°C		Maximum pressure / temperature				
		Volume 8.5 liters		Volume 5 liters		316L Eccentric		Dry weight 34 kg		
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-82F	W-041681	DN100	Ø133	DN80	DN40	232	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-82F	W-041682	Ø101.6	Ø133	DN80	DN40	232	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-82F	W-041683	DN80	Ø133	DN80	DN40	232	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-82F	W-041684	Ø76.1	Ø133	DN80	DN40	232	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-70F	W-041685	DN100	Ø133	DN65	DN40	227	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-70F	W-041686	Ø101.6	Ø133	DN65	DN40	227	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-70F	W-041687	DN80	Ø133	DN65	DN40	227	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-70F	W-041688	Ø76.1	Ø133	DN65	DN40	227	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-54F	W-041689	DN100	Ø133	DN50	DN25	224	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-54F	W-041690	Ø101.6	Ø133	DN50	DN25	224	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-54F	W-041691	DN80	Ø133	DN50	DN25	224	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-54F	W-041692	Ø76.1	Ø133	DN50	DN25	224	655	1277	420	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-02-133-100-43F	W-041693	DN100	Ø133	DN40	DN25	221	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-101-43F	W-041694	Ø101.6	Ø133	DN40	DN25	221	655	1277	420	61 pc Ø12x1mm
TSHXA-02-133-080-43F	W-041695	DN80	Ø133	DN40	DN25	221	655	1290	426	61 pc Ø12x1mm
TSHXA-02-133-076-43F	W-041696	Ø76.1	Ø133	DN40	DN25	221	655	1277	420	61 pc Ø12x1mm



All dimensions in millimeters.



TSHXA-03-133-60		60 barg / 85°C		6 bar[g] / 165°C			Maximum pressure / temperature			
		Volume 10 liters		Volume 7.5 liters			316L Eccentric		Dry weight 48 kg	
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-80	W-041625	DN100	Ø133	DN80	DN40	195	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-80	W-041626	Ø101.6	Ø133	DN80	DN40	195	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-80	W-041627	DN80	Ø133	DN80	DN40	195	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-80	W-041628	Ø76.1	Ø133	DN80	DN40	195	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-76	W-041629	DN100	Ø133	Ø76.1	Ø38	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-76	W-041630	Ø101.6	Ø133	Ø76.1	Ø38	189	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-76	W-041631	DN80	Ø133	Ø76.1	Ø38	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-76	W-041632	Ø76.1	Ø133	Ø76.1	Ø38	189	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-65	W-041633	DN100	Ø133	DN65	DN40	195	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-65	W-041634	Ø101.6	Ø133	DN65	DN40	195	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-65	W-041635	DN80	Ø133	DN65	DN40	195	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-65	W-041636	Ø76.1	Ø133	DN65	DN40	195	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-63	W-041637	DN100	Ø133	Ø63.5	Ø38	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-63	W-041638	Ø101.6	Ø133	Ø63.5	Ø38	189	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-63	W-041639	DN80	Ø133	Ø63.5	Ø38	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-63	W-041640	Ø76.1	Ø133	Ø63.5	Ø38	189	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-50	W-041641	DN100	Ø133	DN50	DN25	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-50	W-041642	Ø101.6	Ø133	DN50	DN25	189	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-50	W-041643	DN80	Ø133	DN50	DN25	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-50	W-041644	Ø76.1	Ø133	DN50	DN25	189	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-51	W-041645	DN100	Ø133	Ø51	Ø25	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-51	W-041646	Ø101.6	Ø133	Ø51	Ø25	189	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-51	W-041647	DN80	Ø133	Ø51	Ø25	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-51	W-041648	Ø76.1	Ø133	Ø51	Ø25	189	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-40	W-041649	DN100	Ø133	DN40	DN25	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-40	W-041650	Ø101.6	Ø133	DN40	DN25	189	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-40	W-041651	DN80	Ø133	DN40	DN25	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-40	W-041652	Ø76.1	Ø133	DN40	DN25	189	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	SI	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-38	W-041653	DN100	Ø133	Ø38	Ø25	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-38	W-041654	Ø101.6	Ø133	Ø38	Ø25	189	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-38	W-041655	DN80	Ø133	Ø38	Ø25	189	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-38	W-041656	Ø76.1	Ø133	Ø38	Ø25	189	1020	1777	550	61 pc Ø12x1mm



TSHXA-03-133-60-F		60 barg / 85°C		6 bar[g] / 165°C			Maximum pressure / temperature			
		Volume 10 liters		Volume 7.5 liters			316L Eccentric		Dry weight 48 kg	
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-82F	W-041697	DN100	Ø133	DN80	DN40	232	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-82F	W-041698	Ø101.6	Ø133	DN80	DN40	232	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-82F	W-041699	DN80	Ø133	DN80	DN40	232	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-82F	W-041700	Ø76.1	Ø133	DN80	DN40	232	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-70F	W-041701	DN100	Ø133	DN65	DN40	227	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-70F	W-041702	Ø101.6	Ø133	DN65	DN40	227	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-70F	W-041703	DN80	Ø133	DN65	DN40	227	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-70F	W-041704	Ø76.1	Ø133	DN65	DN40	227	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-54F	W-041705	DN100	Ø133	DN50	DN25	224	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-54F	W-041706	Ø101.6	Ø133	DN50	DN25	224	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-54F	W-041707	DN80	Ø133	DN50	DN25	224	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-54F	W-041708	Ø76.1	Ø133	DN50	DN25	224	1020	1777	550	61 pc Ø12x1mm
Stock number	Drawing number	P1/P2	A	S1	S2	B	C	D	E	Tube bank
TSHXA-03-133-100-43F	W-041709	DN100	Ø133	DN40	DN25	221	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-101-43F	W-041710	Ø101.6	Ø133	DN40	DN25	221	1020	1777	550	61 pc Ø12x1mm
TSHXA-03-133-080-43F	W-041711	DN80	Ø133	DN40	DN25	221	1020	1790	556	61 pc Ø12x1mm
TSHXA-03-133-076-43F	W-041712	Ø76.1	Ø133	DN40	DN25	221	1020	1777	550	61 pc Ø12x1mm