

# AZ Group



AZ Industrial Technology 2011

For reliably transporting a multitude of mediums from A to B, our group of companies is your ideal contact:

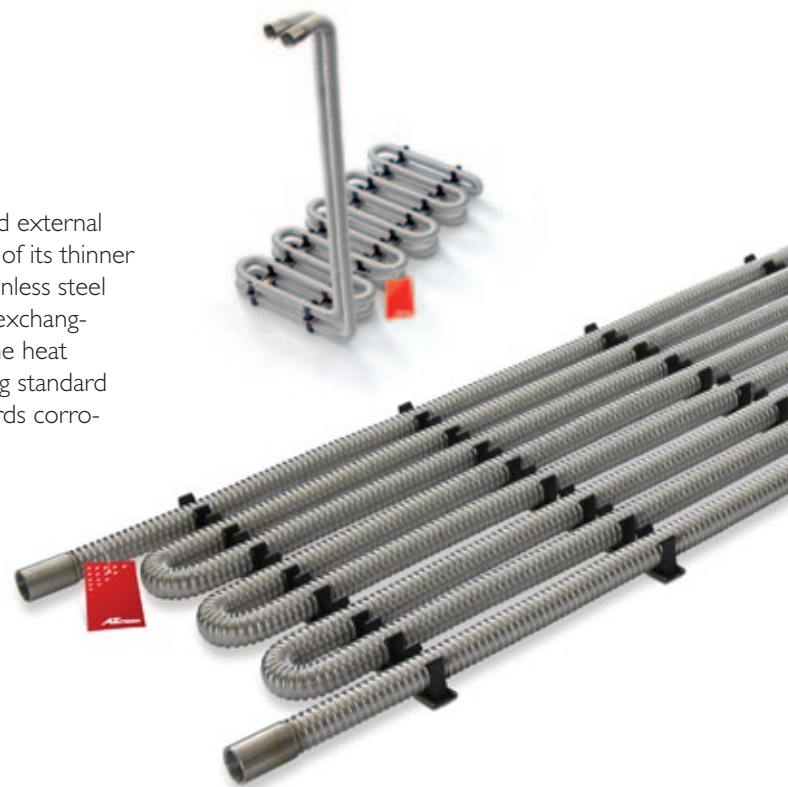
We offer suitable products for conducting, blocking and using gaseous, partly solid as well as fluid substances. In cooperation with our business partners from the pertinent industrial sector, we provide solutions for a large variety of challenges in piping technology.

Immediately after the company was founded in 1979, our customers indicated an enormous demand for individual, customized technical solutions. To be in a position to meet any corresponding request, we installed our own R & D department for the piping technology division. From the very beginning, this business unit has developed into the absolute core area of our activities..

► Our key target is a long-term and permanent cooperation.

## AZ cats® Flexible Tube System

Our cats® flexible tube system is suitable for internal and external installations for gaseous and fluid mediums. On account of its thinner walls and thus larger exchange surface, cats® flexible stainless steel tubing is optimally suitable for the manufacture of heat exchangers. Bending the cats® flexible tubes into the shape of the heat exchanger is easier and faster than compared to bending standard pipes: Our material meets highest requirements as regards corrosion-resistance and durability.



## AZ Flexible Hose

In addition to flexible tubing, we also provide flexible stainless steel hoses. The difference between our AZ flexible tubing and the AZ flexible hose is a tighter and steeper wave geometry of the hose, its thinner resp. thicker wall thickness (type WS 110 resp. WS310) and high reverberating properties. Upon request, we will optimize the flexible hose used for its individual application. At this point in time, we offer two standard types for heat exchanger applications: WS 110 and WS 310.

Flexible hose,  
no braiding



WS 110

Flexible hose with  
a larger wall thickness



WS 310



LEADING SOLUTIONS TO  
FINAL RESOLUTION

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The logo for AZ GRUPPE, featuring the letters 'AZ' in a large, bold, white, italicized font, followed by the word 'GRUPPE' in a smaller, white, sans-serif font.

**AZ** GRUPPE

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FINAL RESOLUTION

A close-up photograph of several heat exchanger tubes made of corrugated stainless steel tubing, arranged in a grid pattern. The tubes are supported by a metal frame. The background is dark, and the lighting highlights the metallic texture of the corrugations.

# Heat Exchangers

made of corrugated stainless steel tubing

# Exchanging Heat – Making the Most of Energy

Heat Exchangers made of flexible stainless steel tubing

▼ AZ heat exchangers are used in industrial and applications in the building utilities management (HVACR), e.g. stratified storages, refrigeration or water-bearing woodstoves.

They meet any requirements for applications in drinking and tap water cycles.

## Advantages

Corrugated tubing and hoses from our own production are used for the heat exchangers. Based on its corrugated structure, the tubing achieves a turbulent flow even from smallest flow speeds, thus transferring a maximum of energy.

By combining the turbulent flow with the elasticity of the corrugated pipe, calcination of the storage system is prevented resp. minimized.

Our corrugated tubes and hoses provide a thermal efficiency rate exceeding that of traditional plain tubes by up to 50%.

The multitude of applications for our corrugated stainless steel tubing ensures that your heat exchanger is optimally integrated into your system requirements.

## Types of Storage Inserts

- 1 Storage insert with plastic support system**
  - light
  - sturdy
  - hydrolysis-resistant (long-term stability/high durability)
- 2 Storage insert with stainless steel clip support system**
  - for universal use
  - in small quantities
- 3 Storage insert with stainless steel wire reinforcement**
  - optimized for cost-efficiency
  - light
  - sturdy
- 4 Storage system with stainless steel frame**
  - sturdy
  - for large quantities
- 5 Heat exchangers without support system**
  - self-supporting
  - economic



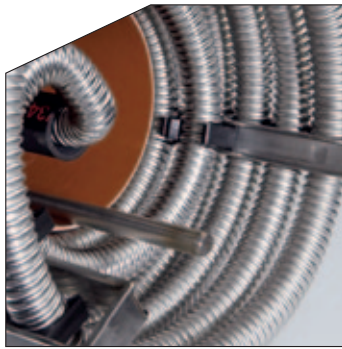
1



2



3



## Development

► We do not want to be considered a supplier of metal hoses and corrugated stainless steel tubing. We would rather be your business partner providing an all-in-one-solution for your requirements. For that reason, we design the heat exchangers tailored to your special requirements, customized to the shape of the piping design and with a support system suitable for any structural conditions and requirements you may have.

## Connection

► When linking tubing to the respective connections, state-of-the-art welding and soldering processes are used. We will optimize the connections to suit your individual requirements – to be inserted into plastic, steel or stainless steel containers.

## Welding processes

- manual and semi-manual TIG welding, such as orbital welding etc.

## Soldering procedures

- autogenous and induction soldering processes, mainly brazing

## Performance

► When using our corrugated tubing, a small additional storage may be designed when still running at the same capacity. Or, if storage capacity remains the same, a higher heat rate is generated. When AZ corrugated tubes are used, the efficiency rate will exceed that of traditional smooth tubes by up to 50% (depending on the respective conditions of application).



Compact Heat Exchanger with especially space-saving and efficient design (cross section model).

## Technical Data

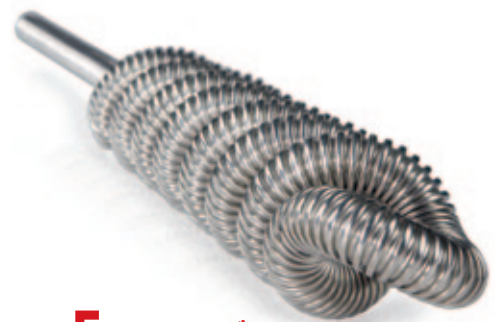
Nominal widths	DN 08	DN 10	DN 12	DN 16	DN 18	DN 20	DN 23	DN 25	DN 32	DN 40	DN 50
Nominal lengths	Standard up to 100 m (longer tubing available upon request)										
Operating pressure*											
WSI 10	20	10	10	6	–	4	–	2,5	2,5	2,5	1,5
WRO	16	16	16	16	16	16	16	16	5	5	5
Compressive strength/ crush resistance	100,000 cycles min., acc. to the respective design pressure										
Corrosion-resistance	acc. to materials 1.4404 / 1.4301										

\* Please refer to the technical data in our „Corrugated Tubes and Hoses“ brochure.

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## Connectors



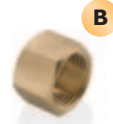
Union nut



Socket union



Double nipple  
(G male thread/  
R male thread)



Compression  
ring nut



Double nipple



Transition piece  
(Cu tube)



T-fitting



Double nipple  
(G male thread/  
G male thread)



Transition piece  
(G/Rp)



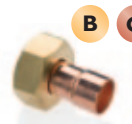
Transition piece  
(male thread)



Transition piece  
(female thread)



Transition piece  
(tube socket)



Solder connection/  
Push-on connector



Reducer  
(G/G)



Reducer female/  
male thread (G/Rp)

## Standard Versions



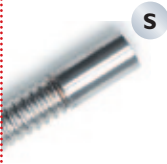
Permanently mounted  
male thread R, G, NPT



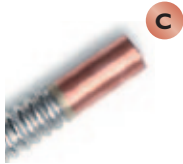
Nipple with union nut,  
flat seal, or conical nipple

## Permanent Connections

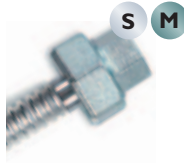
Non-detachable



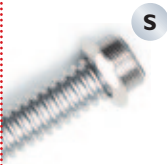
Welded-on tube  
socket



Soldered-on tube  
socket



3-part tube fitting

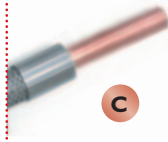


Male thread  
DIN EN 10226-1



Federation nipple  
with union nut

## Special Connectors



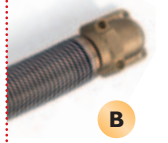
Soldered-on  
Cu-tube socket



Welded-on  
stainless steel  
tube socket



3-piece, VA (High-alloy steel)/  
Malleable cast iron threaded  
connector (gas connector hose)



Soldered-on  
brass flange  
alternatively:  
torsion-free



Welded-on  
special thread

## cats® Flat Seals

Flat seal, removable



Flat seals

## cats® C-Clip

Soft seal, removable, no tools required



Shaped rings



3/3-Retainer ring

## cats® Compression Ring

Metallic seal, no tools required



Compression ring