



WITZENMANN
managing flexibility

TECHNICAL BUILDING EQUIPMENT

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THE GROUP

With 23 Companies in 18 countries
Witzenmann is the worldwide Number 1 in our industry.



World Leader

Witzenmann is a global group specialising in the design and manufacture of flexible metal elements. Guided by our vision of “managing flexibility”, our company has become renowned as a reliable manufacturer and as the innovative development partner of choice within the industry. Today Witzenmann offers the widest range of products available, enabling us provide optimised solutions time and time again.

Assuming Responsibility

As a signatory to the Declaration of Accession, the Witzenmann Group is committed to the 10 principles of the United Nations Global Compact. This initiative by former UN Secretary General Kofi Annan is based on internationally agreed conventions and treaties on human rights, labour standards, environmental protection and anticorruption. The Global Compact aims to make the 10 principles an integral part of business strategy and operation.



OUR FLEXIBLE NETWORK

The group's renowned international technology network across Europe, Asia and the Americas generates advantage in terms of operational excellence and innovative strength.

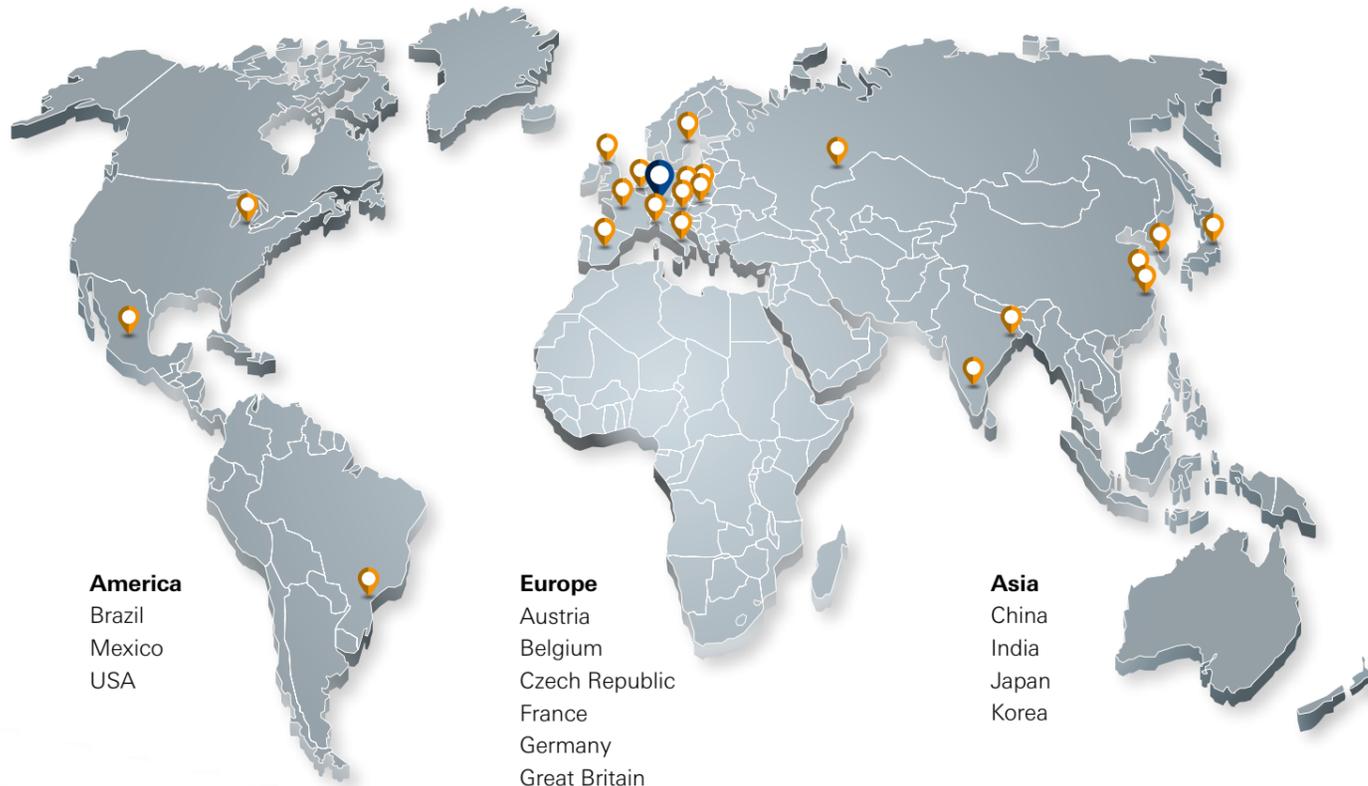
Always Close to the Customer

One of our corporate principles is to manufacture our products close to our markets. In practice, this entails establishing extensive local knowledge both in production and in engineering. To ensure this, our Competence Centre in Pforzheim provides the respective subsidiaries with the appropriate Witzenmann technology. This strong technology network within the group enables us to address global trends and to develop corresponding optimised solutions. This has made us the innovation leader in our industry.

Fast Service, Efficient Production

To be "always close to the customer" is to provide fast, local, efficient service. Through our network of worldwide subsidiaries we are able to provide:

- Sales support and customer relationship management
- Engineering expertise including design calculations, whether for new components or complete piping systems
- Production and assembly services to meet required delivery times for replacement parts or new variants



America

Brazil
Mexico
USA

Europe

Austria
Belgium
Czech Republic
France
Germany
Great Britain
Italy
Poland
Russia
Slovakia
Spain
Sweden

Asia

China
India
Japan
Korea



QUALITY – FROM TOP TO BOTTOM



ISO 9001
2008



ISO 14001
2004

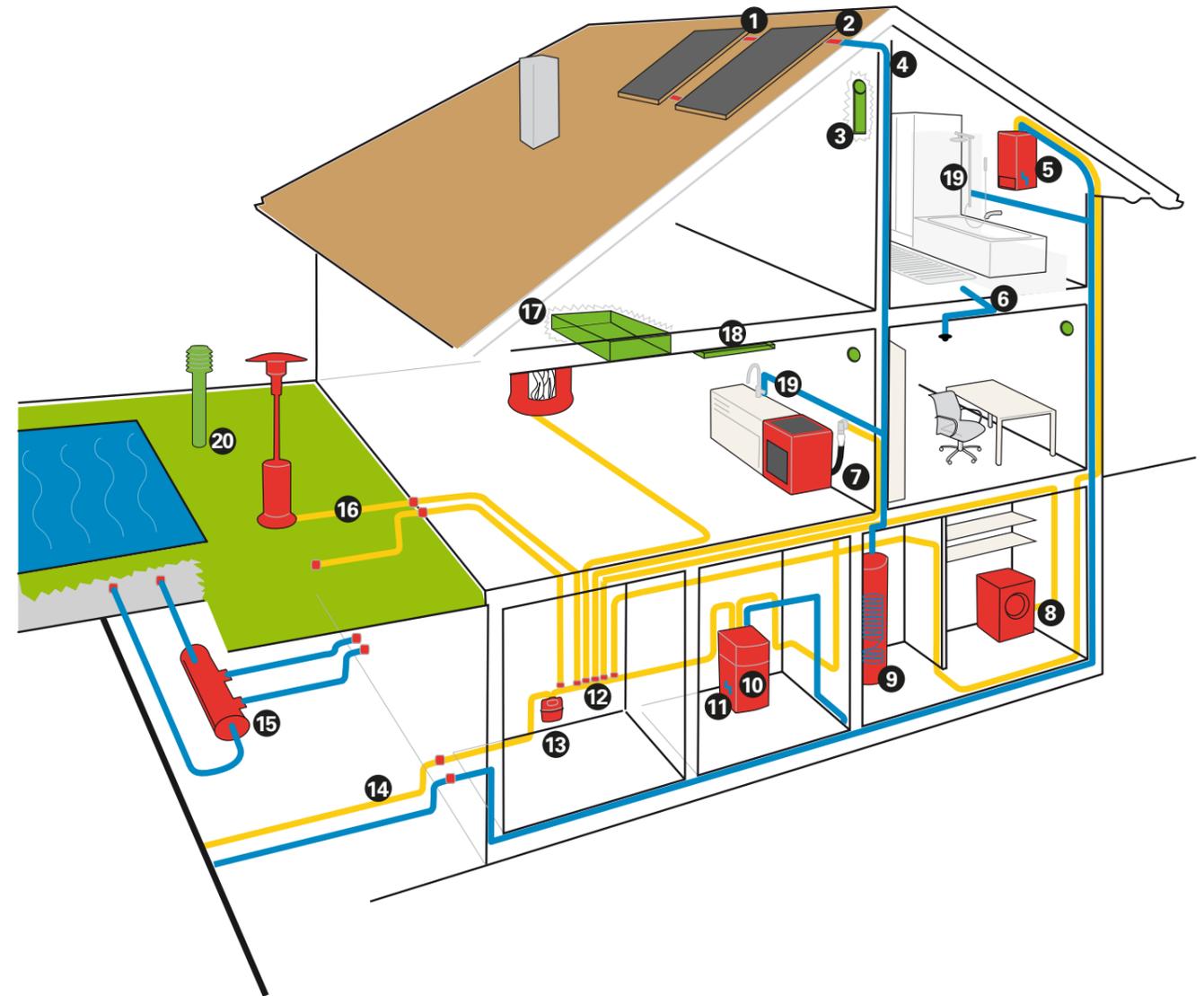


This is essential for a company that stakes a claim to quality leadership. "HYDRA – Quality by Witzenmann" is not just based on DIN ISO 9001, but also a large number of national and international registrations and certifications such as DVGW (association of German gas & water engineers), VdS (the organisation which tests fire protection systems) or ISO 14001. This explains why our customer portfolio now includes all major manufacturers. This is reason enough for us to consistently enhance the qualitative development of our product solutions.

Particularly suitable for many areas of use

Flexible elements from Witzenmann are used in a very wide range of applications. From bellows elements and connections for solar thermal collectors through to underground gas house connections, our products guarantee long-lasting, reliable operational reliability.

Uncompromisingly reliable quality in technical building equipment



Application examples

- 1 Solar expansion joints for connecting solar thermal panels
- 2 Roof outlet
- 3 Air inlet and outlet for ventilating the dwelling space
- 4 Flexible pipe elements in risers and downpipes
- 5 Pipework in appliances carrying hot and warm water
- 6 Sprinkler system
- 7 Gas appliance connection
- 8 Gas-operated clothes dryer (connection)
- 9 Corrugated hose spirals in heat exchanger
- 10 Boiler connection
- 11 Heater piping
- 12 HYDRA GS gas installation system
- 13 Gas meter, gas connection, gas control system
- 14 Underground gas house connection
- 15 Swimming pool heat exchanger
- 16 Gas-operated patio heaters
- 17 Flat ducting for ventilating the dwelling space
- 18 Cooling ceiling components
- 19 Shower/sanitary hoses
- 20 Intake tower

GAS APPLICATIONS

Sturdy, safe and in line with requirements



HYDRA® GAS HOSES

For the gas appliance connection and as gas installation system

Three-layered design



Highly flexible gas hoses acc. to European standard

The hose meets the requirements of the harmonised European standard DIN EN 14800 for domestic gas hoses, and consistently offers the highest standards of safety even under tough operating conditions.

Three-layered design

- Highly flexible and pressure-tight HYDRA stainless steel corrugated hose ensures that gas is carried safely
- Stainless steel braiding for absorbing mechanical loads as well as permitted tensile loads
- Easy to clean PVC covering to protect against contamination and aggressive household cleaning agents

HYDRA GS installation system

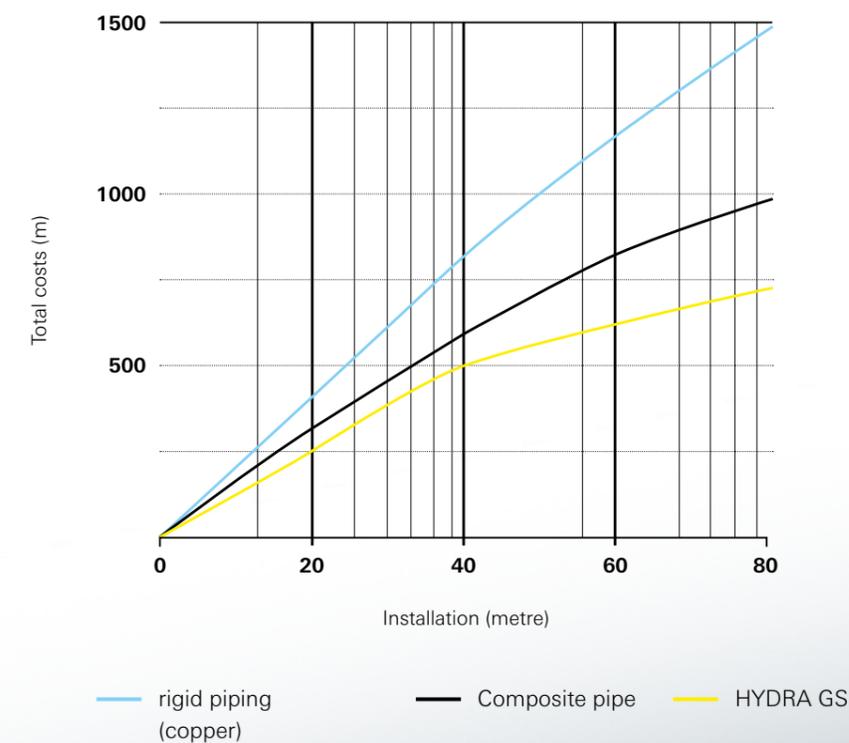


A gas installation system that sets standards

The innovative Witzemann HYDRA GS gas system acc. to DIN EN 15266 combines straightforward connection technology with quick and thus particularly economical pipe routing. The complete package ranges from flexible stainless steel corrugated hose line sold by the metre, through to light and easy-to-use hydraulic tools, as well as metallic sealing fittings.

Comparison between the costs of different systems

Example: installation of a gas pipe on the first floor, "point-to-point", new build.



HYDRA® GAS SUPPLY AND CONNECTION HOSES

Connection and piping for appliances in energy and heating technology

Flexible connections



Safety through quality

The flexible pipework elements ensure reliable fuel supply to gas-powered appliances. Pre-bent ready for installation, with finishing and configuration for individual customers, they guarantee straightforward installation in new build applications as well as for service and repair.

Technical features

- Custom-fitted prefabrication for a wide range of applications
- Flexible and semi-flexible connection pipes, available pre-bent at the factory if required
- Innovative snap-on technology
- With DIN DVGW approval

Gas meter connection



Advantages

- High development expertise for customized solutions
- Pre-finished prefabrication and packaging for original equipment manufacturers
- Stress-free and torsion-free mounting even in confined installation conditions
- Easy to install and accurately positioned assembly in original appliances
- High corrosion resistance and ageing resistance
- Low-cost alternative to copper tubing with distinct advantages in assembly handling

Gas house connection

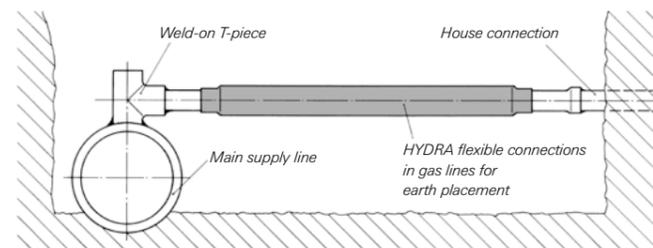


Gas control systems

HYDRA connection hoses for simple and safe connection of gas meters without involving extensive installation work in soldering or welding technology.

Gas house connection

Gas pipes made from plastic are allowed to be routed into the building for the house connection. Then, flexible corrugated hose lines are used for the house connection. Their construction means they are absolutely gas-tight, and guarantee high security of supply even in areas prone to mining subsidence and frequent earth movements.



STOCK HOSES AND EXPANSION JOINTS

Extremely sturdy and pressure-tight

Braided flexible metal hose

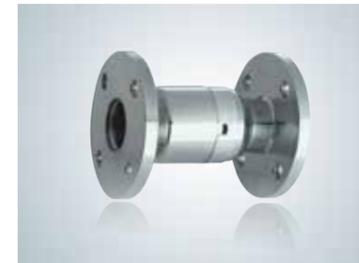


HYDRA flexible metal hoses in type series RS and LA Individually finished or off the shelf

In addition to the extensive range of standard designs which are available ex-stock, HYDRA stainless steel flexible metal hoses can be custom-assembled with various fittings in any length. The product range encompasses a broad spectrum from DN 6 to DN 150, and is approved for use up to a nominal pressure of 16 bar acc. to DIN 3384.

- Available with and without braiding
- Long service life
- Simple installation

HVAC expansion joint



HYDRA expansion joints for gas applications

HYDRA expansion joints for gas applications are approved acc. to DIN 30681, and guarantee stress-free and safe pipe installation. They absorb system vibrations and movements and thereby protect the piping system against damage. Furthermore, they reduce the transmission of structure-borne noise and vibration due to operation.

- For absorbing vibration in drying ovens, gas engines and gas control systems
- For use in gas supply or burner feed lines
- Reduction of power and torque transmission in the area of the connection fittings



WATER APPLICATIONS

Simple to install, reliable and cost-effective



Our pipework elements for carrying water can be optimised for a wide variety of applications to match the particular requirements. They are divided into the following areas:

Equipment pipework

Supply elements carry process or drinking water (in exceptional circumstances, special media such as oil and gas) to the particular appliances. The prerequisite for this is that the geometry of the pipes can be easily adapted to the prevailing conditions and that the connection technology is not complicated. Furthermore, specially corrugated hoses are used for internal appliance pipework – where the installation conditions are usually very cramped.

Regenerative energies

The features here are high temperature resistance, high-volume throughputs, straightforward and compact connections, ability to accommodate movements and tensions.

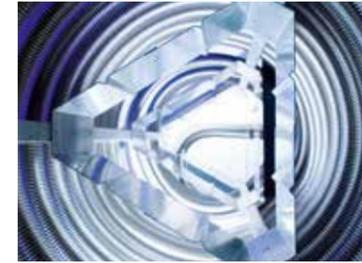
Fire protection

These HYDRA products are subject to the highest safety requirements. Not only does this demand absolute reliability and durability, but also high handling quality for quick and easy installation.

HYDRA® HEAT EXCHANGERS

High efficiency because of a larger surface area

Flexible metal hose module with frame holder



Swimming pool heat exchanger with plastic housing



Modular or as complete system

The heat exchangers consist of a compactly coiled stainless steel corrugated hose spiral in a plastic or stainless steel housing. They are available as a complete system or even as a self-supporting coil that can be integrated into the existing housings. The thin-walled and semi-flexible hoses are extremely sturdy and, with their corrugation profile, they offer significant advantages compared to smooth tubes.

More performance in less space

Compared to conventional tubular heat exchangers with a flat-surface design, HYDRA heat exchangers offer a larger surface area with markedly better performance and correspondingly higher efficiency. Such high-performance, compact and light-weight exchangers can be installed even in very cramped mounting situations.

Temperature transfer due to optimised flow characteristics

The corrugation causes a turbulent throughput inside the hose, which has an intensifying effect on the heat transfer. In contrast to laminar flow, a mixing of the temperature stratification takes place and the flow speed decreases in the middle of the hose.

Targeted turbulence prevents the formation of deposits

The corrugated profile results in deliberate turbulence which intermixes the temperature stratifications in the medium that is flowing through. As a result, calcium deposits are prevented, which enables constant performance throughout the entire service life.

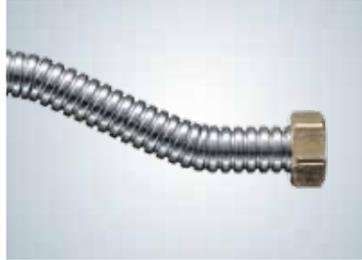
Versions

- Compact swimming pool heat exchanger
- Special models for exhaust gas, water and gas cooling
- Adaptation to individual customer requirements



WARM AND HOT WATER PIPES

Hot water



Fast, simply, universal

Connection pipes in flexible and semi-flexible designs that enable fast and straightforward pipework for heating, hot water and boiler equipment are a versatile alternative to copper piping. The standard series available ex-stock in two different designs covers all conventional applications.

For pipework on

- Loading pumps
- Fired boilers
- Gas heaters/boilers
- Pressure expansion vessels

For heat pumps



The insulated connection pipe

The flexible annular corrugated hoses allow uncomplicated connection of heat pumps to heating water connection pipes. The thermal insulation coating prevents heat losses in the transit pipe. The range covers air/heat pumps installed outdoors, solar/compact heat pumps as well as solar/water heat pumps. The hoses are also used as a connection between two or more buffer cylinders.

Technical features

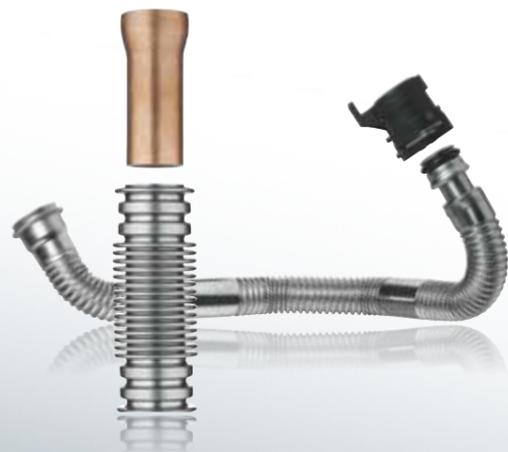
- Cold and heat insulated pipe
- Test pressure: 6 bar
- Optimised corrugation geometry
- Suitable for high flow rates
- Pipe can be shorted easily without any special tool – can therefore be used universally

Gastro hose



Long-lived and reliable

HYDRA conduits in the kitchen area are completely preassembled, sturdy and effectively indestructible. Ideal for large-scale kitchens, gastronomy and the hotel sector. The hoses for use in kitchens of the catering industry are subject to extreme requirements. The gastro hose is configured as a flexible Agraff metal hose using stainless steel 1.4301 with a silicone hose with worldwide drinking water certificates. This compact unit made from an interior and exterior hose is extremely sturdy with long-lasting practical utility for applications in the professional kitchen.



SOLAR PIPING

Joining elements for solar thermal

Application



Solar thermal

The components (delivered as a 'perfect fit' and ready for installation) are easy-to-install, low-maintenance products that ensure moderate installation costs and extremely low operating costs. This makes the reliable HYDRA solar connectors the preferred choice for OEMs and the installation trade in this market segment.

Areas of use

Flexible connections between the individual solar panels and the solar equipment piping.

Characteristics

- Temperature range -20 °C to +250 °C
- Absorption of movement in all directions (axial, lateral and angular)
- Guaranteed alternation of load (min. 10,000 stress cycles)
- Compensation of installation inaccuracies
- Suitable for any application (pressurized or depressurized systems, for major installations or individual panels)
- Connections available to suit standard copper pipes

HYDRA-Quick



The space-saving connection system

HYDRA-Quick is the simple connection system for fast installation by customer. It interconnects rigid pipework connections to flexible connecting hoses by means of threaded connections or hoses. Metallic connections designed in this sturdy technology are more durable than hard-fibre seals, plastic or elastomer solutions. Even reliably tight connections of stainless-steel hoses on copper piping are possible without any problem at all.

Characteristics

- Temperature range: -20 °C to + 200 °C system temperature
- Metal-seated and durable
- Installation without special tools
- Easy to detach and reusable



FIRE PROTECTION

Sprinkler mounting system

Mounted sprinkler system



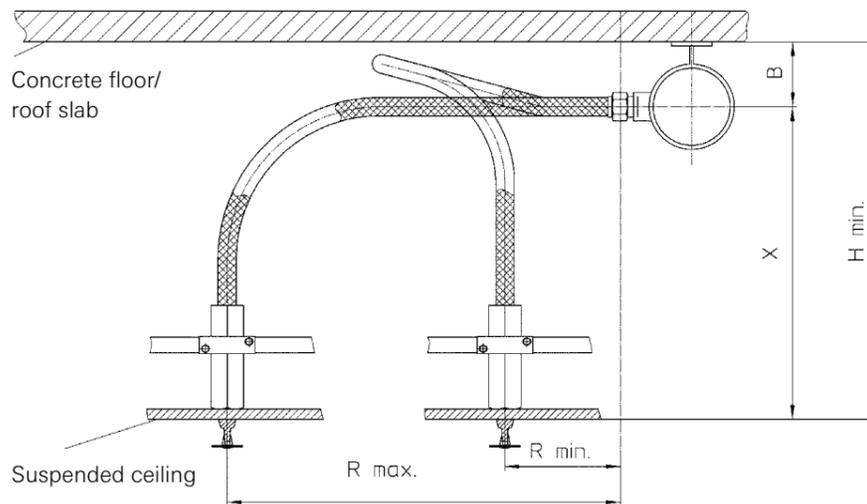
Flexibility for operating efficiency

The use of a specially prepared stainless steel hose significantly reduces the necessary installation work compared to rigid systems. The flexibility of the hose lets you freely choose the installation position of the sprinkler within a circular area defined by the hose length. For this reason, the exact positioning of sprinklers in suspended ceiling systems of a variety of designs is made possible without any difficulty. This results in significant time and cost benefits as compared to the installation technology used previously. The supplied mounting brackets allow reliable and secure attachment of the sprinkler hose to the substructure of the appropriate ceiling system.

Advantages

- Quick and easy to install
- Complete system incl. mounting and installation technology (only 7-8 minutes per sprinkler system)
- Rapid positioning of sprinklers because of a scale on the coupling
- Easily bypass other parts and building components
- Does not require completely new installation of the sprinkler system during renovations or conversions
- Variable positioning is possible in all directions

Design work



FLEXIBLE ELEMENTS FOR PIPES

Effective absorption of movements and insulation of structure-borne noise

Expansion joint in pipe



Free to move in all directions

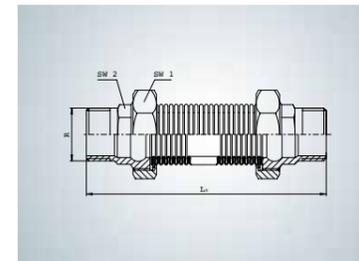
Changes in length due to heat can result in significant stress on fixed installed piping systems and attachment and connection points. Axial expansion joints reduce structure-borne noise transmission through the pipe and avoid the transmission of vibration.

HYDRA expansion joints for technical building equipment are available in a wide range of designs. Axial expansion joints are available in VdS-approved designs with guide and sheath hose for use in safety-relevant water extinguishing facilities.

Design work and technical data

The expansion joint consists of a multi-layered stainless steel bellows. Depending on the relevant case of operation, the bellows is available in the stainless steel materials 1.4571, 1.4541 or 1.4404. The expansion joints are delivered pre-finished and assembled with the necessary connectors. The product range includes axial expansion joints with the most current connection fittings up to nominal diameter of DN 100.

Design example



VENTILATION SYSTEMS

Heat energy recovery
and an improved room climate

DUCTS FOR VENTILATING DWELLING SPACES

Tidy and economical solution for new builds and renovations

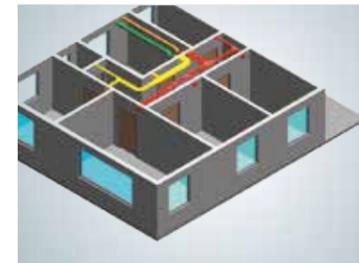
Flat ducts



Distribution box for connecting a flexible hose



Possible duct routing



Flat and round – the complete range

Modern buildings with a high standard of insulation and correspondingly high structural integrity can no longer function without controlled ventilation of the dwelling space. The ventilation systems ensure a specific exchange of air, regulate the moisture and prevent mould formation. In addition, they guarantee increased efficiency from the heating system because heat can be recovered from the waste air.

The round systems are designed as spiral ducts and are easily installed using the push-fit method without tools. The internal seal reliably seals the joint. The round cross-section ensures optimum flow conditions.

The flat ducts with a rectangular profile can be installed in the concrete of the floor, wall or ceiling, or installed behind the pre-wall structure in order to save space. This means the ventilation ducts are in a concealed installation, and do not require any extensive structural modifications. The extensive range of components allows an extremely wide range of room situations to be fitted out using both systems (round or flat, and combination of the two).

Characteristics

- Extremely smooth surfaces with very good hygienic properties
- Optimum throughflow
- Snap-on system
- Simple to connect
- Made of non-flammable materials
- No static charge buildup or evaporation

