

# Compressed Air Distribution System

SMARTPIPE™



## Compressed Air Piping

Kaeser's SmartPipe™ is a modular compressed air distribution system that offers both lower installation costs and lower long term operating costs.

Piping selection directly affects the three key elements of every compressed air system: flow, pressure and air quality. Poor choices in pipe materials, diameter and layout cause flow restrictions, often resulting in significant pressure drop. Pressure drop is a main cause of increased energy consumption and underperforming air driven tools and equipment.

Choices in piping also directly impact installation costs. Heavier materials increase fatigue and slow work, especially in overhead installations. Also consider the types of fittings to be used. Some connection types cause pressure drop, need special tools, and take more time to install.

Kaeser SmartPipe™ offers an excellent choice for compressed air and inert gas distribution for pressures up to 188 psig (13 bar) (consult factory for higher pressures) in temperatures from -4°F to +140°F (-20°C to 60°C). SmartPipe™ is also ideal for vacuum up to 98.7% (29.6" Hg).

## Pipe Material Selection

Common compressed air piping materials with their advantages and disadvantages.

Material	Advantages	Disadvantages
<b>Black Iron</b>	Moderate material costs Readily available in multiple sizes	Labor intensive installation May rust and leak Rough inside promotes contaminant build up and creates pressure drop
<b>Galvanized Iron</b>	Moderate material costs Readily available in multiple sizes Some rust protection	Often only exterior is coated Labor intensive installation Rough inside promotes contaminant build up and creates pressure drop May rust at joints and leak
<b>Copper</b>	No rust, good air quality Smooth interior-low pressure drop	Requires quality brazing to prevent leaks Susceptible to thermal cycling Installation involves open flame
<b>Stainless Steel</b>	No rust, good air quality Smooth interior-low pressure drop	Labor intensive installation Expensive materials

## What's so smart about SmartPipe™?

### Ease of Installation

Fast to install and easy to modify, Kaeser SmartPipe™ is the most versatile compressed air distribution system available. Our combination of light weight materials and push-to-fit connectors dramatically reduce labor and installation time, even in overhead installations.

### Other features include:

- Installs faster than other common piping
- No specialized trades needed
- No threading, welding, or brazing pipe
- No special tools are needed
- Simple to use mounting and connecting hardware
- Can connect to existing systems with other pipe types
- Easy to add on to or disassemble for your changing needs



This actual cutaway of black iron compressed air piping shows typical contaminant build up and flow restriction after just a few years of operation.

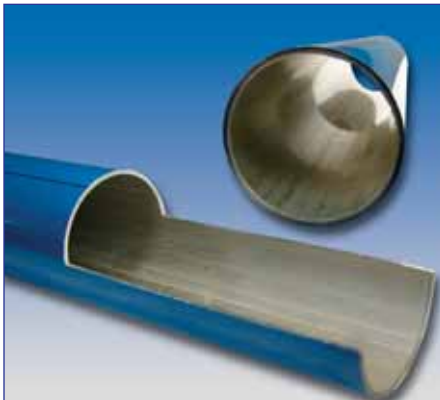
## Optimum flow and air quality

SmartPipe's smooth calibrated aluminum construction has a low friction coefficient, providing the best possible laminar flow. Full bore fittings further minimize pressure drop for optimum flow and energy efficiency. Leak free connectors prevent air loss and wasted energy.



*Integral condensate retention design for superior flow without pressure drops.*

SmartPipe™ is ideal for installations requiring the highest quality air. Aluminum material will not rust or corrode. Further, it has no rough surfaces or interior restrictions that accumulate contaminants. The smooth interior with full bore design allows them to flow to your dryers and filters for efficient removal.



*Cutaway of 5 year old SmartPipe. Inside remains smooth and clean with no contaminant build up or pressure loss.*

## Wide scope of supply

SmartPipe™ is available in six sizes from 100 mm down to 16.5 mm and is perfect for use as headers, branch lines and drops to point of use.

- ✓ 100 mm OD (4" ID)
- ✓ 76 mm OD (3" ID)
- ✓ 63 mm OD (2-1/2" ID)
- ✓ 40 mm OD (1-1/2" ID)
- ✓ 25 mm OD (7/8" ID)
- ✓ 16.5 mm OD (1/2" ID)



*Rigid aluminum calibrated pipe assures clean air and optimum flow rate performance.*

The SmartPipe™ line includes all the accessories you need for a top quality installation:

- straight unions
- elbows and tees
- cross connectors
- reducing fittings
- gooseneck drops
- ball valves
- quick assembly brackets and hangers
- snap-shut pipe clips
- expansion and flex hoses
- variety of ISO4414/EN983 compliant safety couplers

## Connectors



*Equal pipe-to-pipe connector  
Series AN6606*



*Equal elbow connector  
Series AN6602*



*Male threaded connector, NPT Thread  
Series AN6605*



*Equal tee connector  
Series AN6604*



*Quick assembly bracket  
Series AN6662*

# Compressed Air System Design

## Materials

SmartPipe™ components are non-flammable and 100% recyclable. Piping is constructed of 6063-T5 calibrated alloy aluminum and is blue powder coated outside. Pipe, fittings and valves are guaranteed silicone free.

Connectors feature durable Nitrile gasket seals. 16.5 mm, 25 mm and 40 mm fittings are made of non-flammable polyamide (nylon) (UL94-HB standard) and are resistant to UV rays and most compressor fluids. 63 mm fittings are coated aluminum. 76 and 100 mm fittings are manufactured from 304S stainless steel.



Kaeser's team of engineers are always at your service to help design or optimize your compressed air system. With decades of experience in system design, special applications and energy audits, our entire team can meet your unique requirement.

Using specialized tools such as our Air Demand Analysis and Kaeser Energy Saving System we can provide an accurate assessment of your existing installation and use predictive models to demonstrate how proposed changes will improve your system performance.

Then, using a state-of-the-art CAD software, Kaeser can lay out the

proposed system and produce traditional two-dimensional and three-dimensional drawings. This is a huge benefit in project planning. It helps you visualize not only new equipment, but also how it will fit into the building along with existing equipment, piping, walls, vents, etc. This helps ensure smooth installation, good access for service and reliable operation.

From complex installations to challenging environments to limited space, Kaeser can design and lay out a system to meet your specified requirements for performance and reliability.



# KAESER COMPRESSORS

**Built for a lifetime.™**

Corporate Headquarters:  
P.O. Box 946  
Fredericksburg, Virginia 22404  
Phone 540-898-5500  
Fax 540-898-5520  
[www.kaeser.com](http://www.kaeser.com)

Certified Management Systems



## The Air Systems Specialist

With over 85 years of experience, Kaeser is the air systems specialist. Our extensive 100,000 square foot facility allows us to provide unequalled product availability. With service centers nationwide and our 24-hour emergency parts guarantee, Kaeser customers can rely on the best after-sales support in the industry. Kaeser stands committed to providing the highest quality air system for your specific compressed air needs.

© 2008 Kaeser Compressors, Inc. All rights reserved. 04/08  
USSMARTPIPE