



AIR CONNECT

Compressed Air Piping System

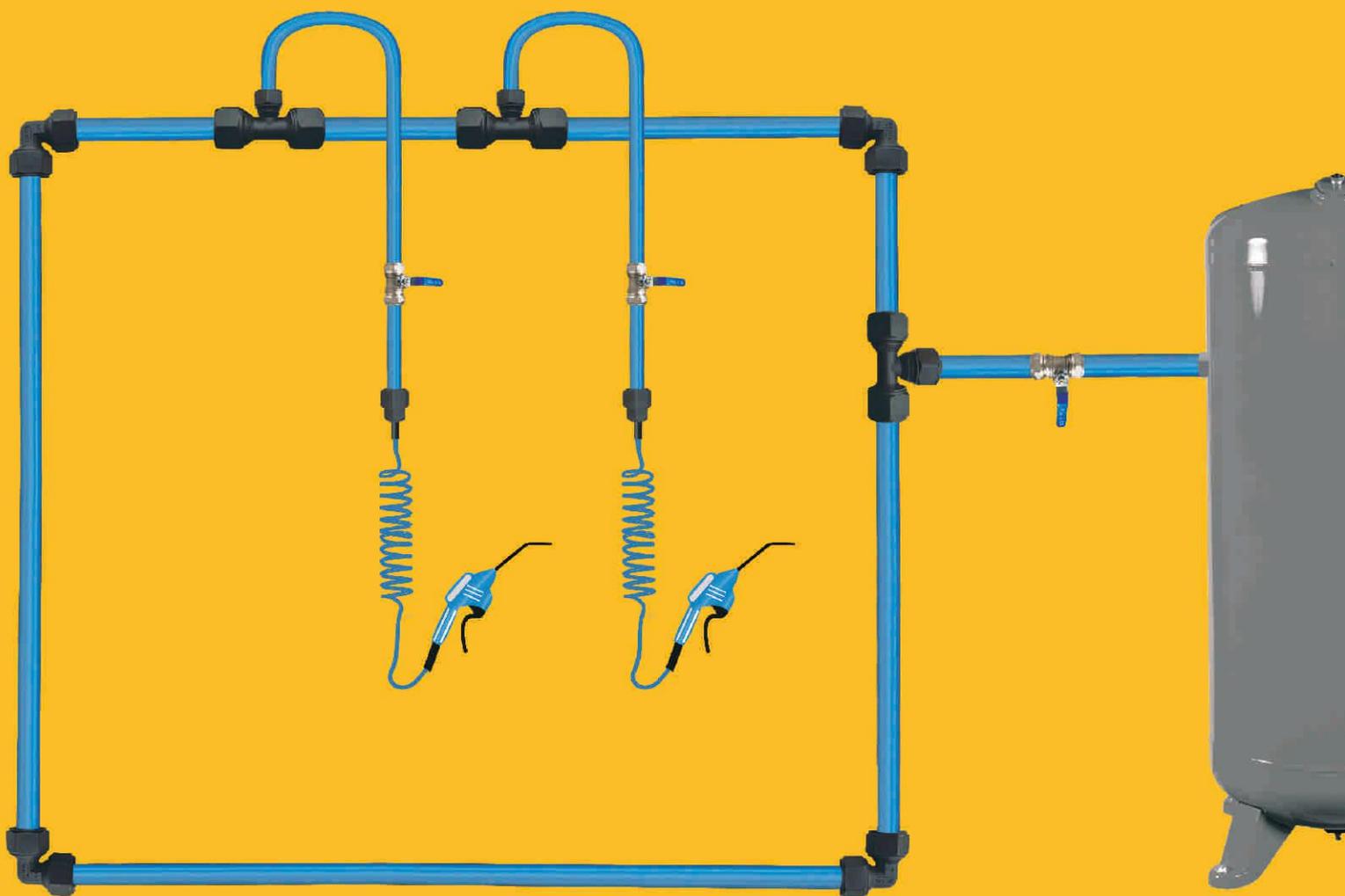


**For Compressed Air, Vacuum and
Inert Gas Distribution Systems**



Air Connect by Jindal: Advanced Pipe systems for Industrial Fluids

Compressed Air | Vacuum | Inert Gas



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Introduction

Jindal group is the largest manufacturer of ERW Pipes, well diversified in various piping systems such as PE-AL-PE Pipes (also known as Multi Layered Composite Pipes or Jindal MLC Pipes), PVC Pipes, UPVC Pipes, HDPE Pipes and CPVC Pipes. These pipes are used for various applications such as Hot & Cold Water supply, Drainage, Irrigation water supply, Borewell water supply and Gas Distribution system.

Air Connect Piping system are composed of Multi layered composite pipes and a range of different types of fittings. The fittings are available in Brass and Plastic materials and are joint using either compression technique or crimp technique. This provides the customer various options to choose from depending on their budget, requirement and application.

Compressed Air is required in manufacturing and industrial activities for a multitude of applications. It is used to control and regulate appliances and is the driving force for pneumatic drills, conveyors, spray guns, machine tools etc. For these appliances to function

correctly it is very important to ensure that the quality of air employed is excellent. In Air Connect pipes the inner surface of the pipe which comes in direct contact with air is made of polyethylene which unlike metal pipes guarantees absence of rust and impurities formed by condensation that could become detached from the pipe walls. Cleaner Air also means that the filters require less maintenance. Also Air Connect pipes are suitable for use at high operating pressures of upto 232 psi. Air Connect Pipes are bendable without springing back and come in coils of upto 200 meters which significantly reduces the number of joints in the piping system.

Air Connect piping system can be easily and quickly installed, modified or expanded without the need for specialized equipment, providing clean, reliable and long-term performance. The strength of Jindal lies in its quality products and prompt service. For over 50 years Jindal has been a trusted name in the piping industry satisfying customers through its extensive distribution network all over India and worldwide.



RESISTANT TO

- Thermal variations
- Corrosion
- Mineral and Synthetic Compressor Oils
- Acidic condensation
- Fire (retardant)

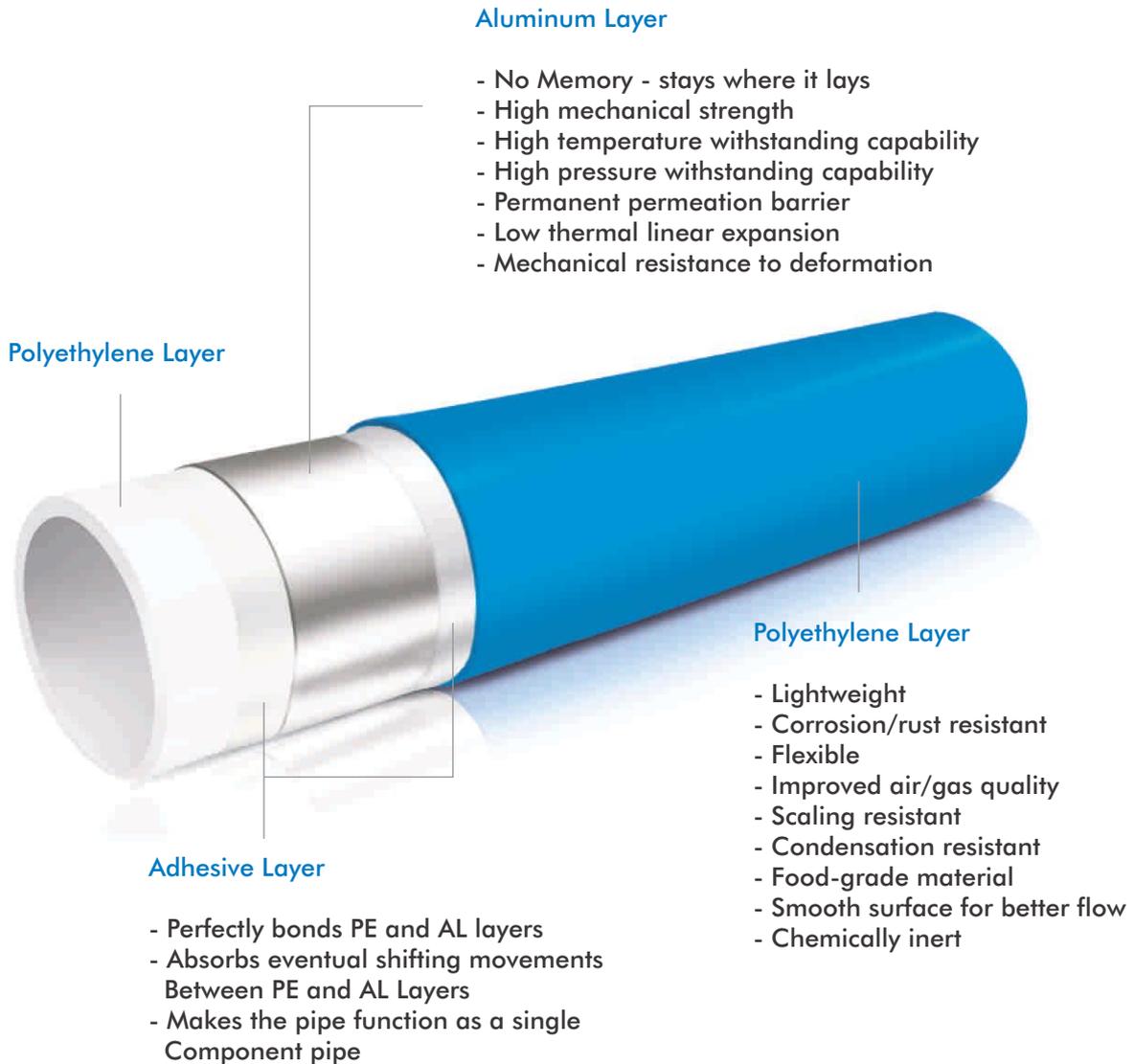
EASE OF INSTALLATION

- Pipes and fittings are supplied ready for installation
- No in-depth training required
- No need to weld, glue, fuse or thread
- Time Saving
- Easy to install, handle and Transport
- Light Weight
- Pipes do not require painting
- Can be modified or expanded without the need for Specialized Equipment

ADVANTAGES

- Long Working Life
- Low Thermal Conductivity
- Low Thermal linear expansion
- Cleaner Air due to corrosion free surface
- Better flow rate
- Compact Piping system
- Bendable without springing back
- Lower labour cost
- Minimum Fittings

Air Connect Technology



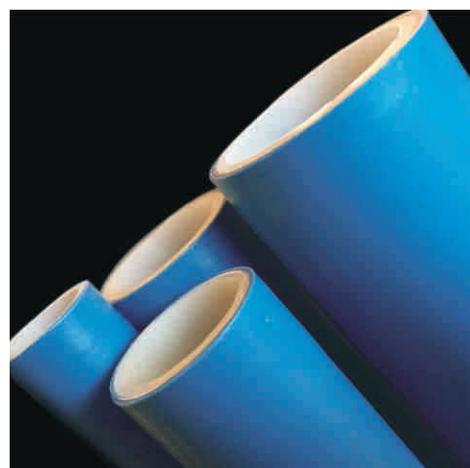
Air Connect is an innovative piping system for compressed air and inert gas distribution that uniquely combines all the benefits of plastic and metal in one pipe. Pipes and fittings are joined together using either compression technique or Crimp technique which have various benefits such as Fast and easy installation, no need to weld, glue, fuse or thread. Air Connect not only extends the life of the system, but significantly reduces leakage that leads to saving of time, labour and operating costs.

PIPES

Air Connect Pipes are constructed of an inner and outer layer of Polyethylene sandwiched over an aluminum core. All the layers are permanently bonded together by an intermediate layer of polyethylene based adhesive. The aluminum core is sealed by Over-lap welding technology which enables the pipes to withstand high working pressures.

The Polyethylene layer contributes approximately 30% to the overall strength of the pipe, the remaining 70% coming from Aluminum layer. It is a bendable pipe and comes in coils of upto 200 meters which significantly reduces the number of joints in the piping system such as couplers and elbows.

**10 years Warranty
on Pipes & Fittings***

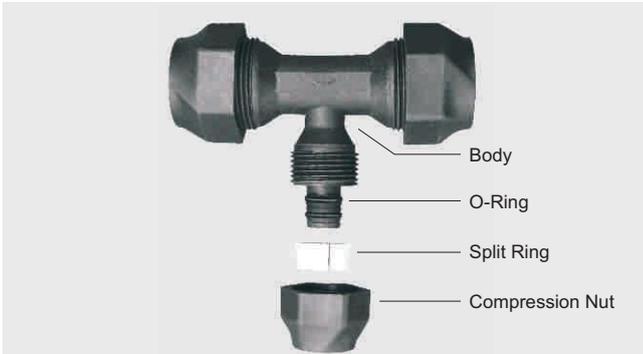


Manufacturing Facility

Air Connect Pipes and fittings are manufactured in an ISO 9001:2008 certified state-of-the-art manufacturing facility situated in Dehradun, Uttarakhand, India. The facility has an annual production capacity of over 60 lacs meters/annum. The Pipes are manufactured by Over-lap welding method using Extrusion machines whereas Plastic fittings (Com-fit, Eco-fit and Crimp-fit) are manufactured using Injection moulding machines.

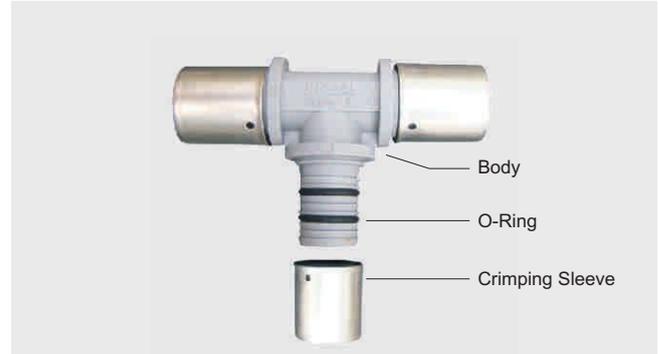
FITTINGS

Air Connect comes in a range of different types of fittings. These fittings are available in Brass and Plastic materials and are joint using either compression technique or crimp technique:

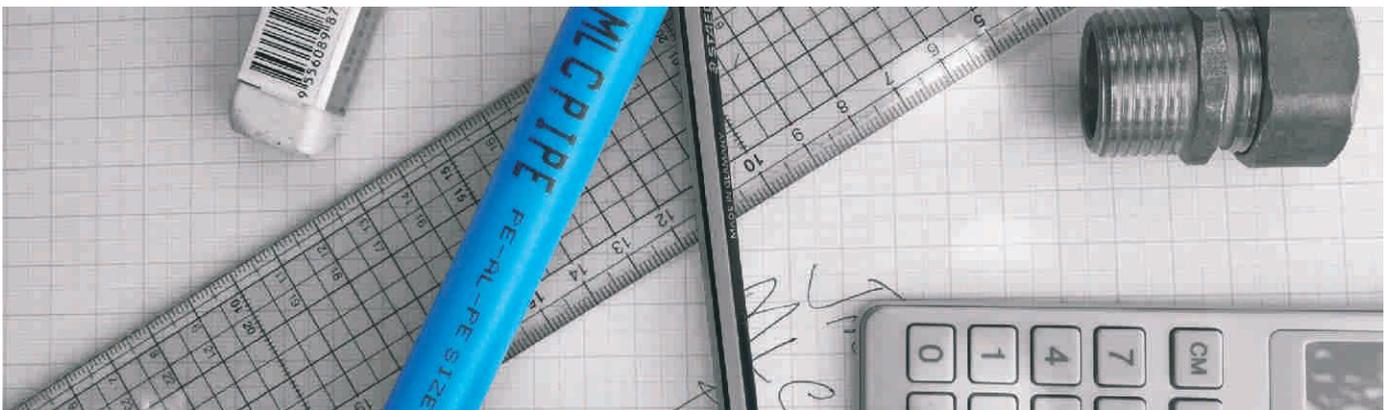


Compression Technique: Compression fittings are highly reliable and have a simple installation technique. The fittings do not require any special tools. The compression fittings are joint to Air Connect pipes by compression i.e. by tightening the nut against the tapered split ring. The profiles of these two pieces are designed to cause shrinkage of the split ring and to distribute the compression forces across the contact surface. O-ring seals are mounted on the insert of the fitting and come in direct contact with the pipe. These fittings have double O-ring seals which ensures a leak proof piping system. Complete range of fittings such as male/female threaded adapters, tees, couplers, elbows, valves etc. are available. It can be easily assembled and de-assembled. Compression fittings are available in three variants:

1. Brass-fit
2. Com-fit
3. Eco-fit



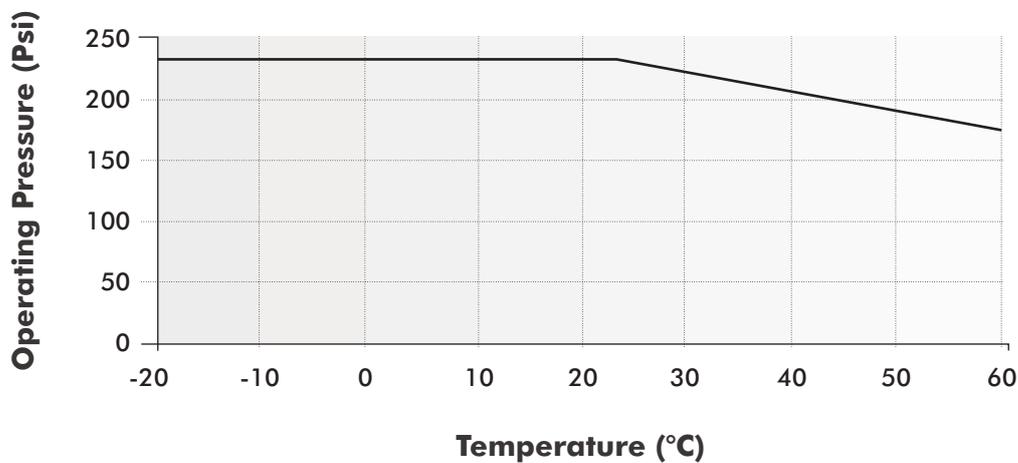
Crimping Technique: The crimp fittings are joint with Air Connect pipes by crimping a sleeve over the pipe. A crimping tool is required to make such joints. These are designed for quick and easy installation. O-ring seals are mounted on the insert of the fitting and come in direct contact with the pipe. These fittings have double O-ring seals which ensures a leak proof piping system. Complete range of fittings such as male/female threaded adapters, tees, couplers, elbows, valves etc. are available. The sleeve once crimped holds the pipe until forcibly removed. These fittings are available as Crimp-fit.



Technical Specifications

Fluids	Compressed Air Vacuum Inert Gases (argon, nitrogen)
Maximum Working Pressure	232 Psi at 23°C 175 Psi at 60°C

Pressure - Temperature Rating (1216mm to 4050mm)



Working Temperature Range	-20°C to 60°C
Thermal Conductivity	0.45 W/m.k.
Co-efficient of Thermal Linear Expansion	25×10^{-6} m/m.k.
Minimum Burst Pressure	870 psi - 507.5 psi (depending on Pipe size)
Long Term Hydrostatic Strength	391.5 psi - 290 psi (depending on Pipe size)
Resistant to	thermal variations corrosion mineral and synthetic compressor oils fire retardant



DIMENSIONS & THICKNESS

Pipe Size	Outside Diameter (mm)		Wall Thicknes (mm)		Aluminum Layer Thickness (mm)	Inner PE Layer Thickness (mm)	Outer PE Layer Thickness (mm)
	Nominal	Tolerance	Nominal	Tolerance			
1216	16	+0.30	1.65	+0.40	0.20	0.90	0.40
1620	20	+0.30	1.90	+0.40	0.25	1.00	0.40
2025	25	+0.30	2.25	+0.50	0.25	1.10	0.40
2532	32	+0.30	2.90	+0.60	0.30	1.20	0.40
3240	40	+0.30	3.85	+0.60	0.30	1.70	0.40
4050	50	+0.30	4.35	+0.60	0.30	3.00	0.40

WEIGHT & MEASUREMENTS

Pipe Size	Standard Packing (Mts)	Net Weight (Kgs)
1216	200	22.0 +/-2
1620	200	29.2 +/-2
2025	100	21.5 +/-2
2532	100	32.8 +/-2
3240	50	27.5 +/-2
4050	50	41.3 +/-2



Salient Features

Anyone who grew up with the old fashioned piping system will appreciate the advantages of Air Connect Pipes. Its flow rate is superior to other systems, its virtually maintenance free as it does not rust or corrode. Similarly it has various features which make it the suitable choice in Compressed Air piping system.

BENDABILITY

The unique feature of Air Connect pipes is its flexibility, these pipes can be bent in any shape without it springing back to its original shape, i.e. It retains the given shape.

CORROSION RESISTANCE

Air Connect's Polyethylene layer resists corrosion and hence provides a longer service life compared to traditional metallic pipes that are susceptible to corrosion.

PERMEATION BARRIER

The unique composite construction of Air Connect Pipes eliminates permeation of air through the pipe wall ensuring the delivery of pure gases. The central layer of Aluminum acts as a barrier to such permeation.

CHEMICAL RESISTANCE

Air Connect Pipes along with its associated fittings have an outstanding resistance to a wide range of compressor oil and lubricants.

THERMAL EXPANSION

Air Connect Pipes have a low coefficient of thermal linear expansion, similar to Aluminum pipes. It is significantly less than the expansion rates of most plastic pipes. This eliminates the need to install "offsets" and the concern of pipe abrasion from movement due to temperature changes. The coefficient of thermal expansion is 25×10^{-6} m/m.k. Low expansion coefficient is due to the adhesive layer which eliminates the differential expansion of plastic and metal.



Raw Material - Polyethylene

Polyethylene or PE is a polymer consisting of long chains of the monomer ethylene. It is created through the polymerization of ethene and is classified into different types based on Density. High Density Polyethylene or HDPE is used to manufacture Air Connect Pipes. It has a low degree of branching and thus stronger inter-molecular forces and tensile strength. The HDPE used in Air Connect Pipes is food grade and hence hygienic.

MINIMUM FITTINGS

Due to the flexibility of pipe, fittings such as elbows and couplers are not required. This in turn leads to optimized flow rates and possible leakage points are also reduced.

STRENGTH REMAINS SAME AFTER BENDING

The minimum bending radius of Air Connect pipes is 2-5 times the Outside diameter of the pipe. The tensile and compressive stresses developed on the outermost and innermost layer of the pipe cross section respectively are well within the allowable limits. Hence the pipes bent within this limit can be safely used without any reduction in basic strength of the pipe.

LIGHT WEIGHT AND STRONG

Air Connect pipes are upto 90% lighter compared to other piping systems such as GI, Aluminum, PPR pipes and yet can withstand high pressures of upto 232 psi making them easy to install, handle and use.

HIGHER FLOW RATES

Air Connect pipes have a smooth inner layer which leads to superior flow rates. It has a high Hazen Williams flow coefficient of $c=150$. Since the pipes are rust and corrosion resistant, the inside diameter is maintained throughout its life-cycle leading to constant flow rates over time.

TOXICITY

Air Connect Pipes are excellent choice for the delivery of gaseous carbon dioxide in food and beverage applications. The Polyethylene used in Air Connect Pipes is of food grade quality.



Raw Material - Aluminum

Aluminum is a soft, lightweight, non-toxic and malleable metal with appearance ranging from silvery to dull gray depending on surface roughness. Aluminum alloys have yield strengths ranging from 200 mpa to 600 mpa.

For Air Connect pipes, a specialized grade of Aluminum is used which is manufactured specifically for these pipes and have the right balance of strength and flexibility as required for compressed air application.

Raw Materials

Item Name	Raw Material
Air Connect Pipe	Polyethylene-Aluminum-Polyethylene
Brass-fit (Size: 1216 to 4050)	
Body	Brass
Insert	Brass
Nut	Brass
Split Ring	Brass
O-Ring	Nitrile
Com-fit (Size: 1216 to 2532)	
Body	Nylon with Glass filled (NGF)
Insert	Brass with nickel plating
Nut	Nylon with Glass filled (NGF)
Split Ring	Delrin
O-Ring	Nitrile
Com-fit (Size: 3240 to 4050)	
Body	Nylon with Glass filled (NGF)
Insert	Nylon with Glass filled (NGF)
Nut	Nylon with Glass filled (NGF)
Split Ring	Delrin
O-Ring	Nitrile
Crimp-fit (Size: 1620 to 2532)	
Body	Nylon with Glass filled (NGF)
Insert	Nylon with Glass filled (NGF)
Sleeve	Stainless Steel
O-Ring	Nitrile
Eco-fit (Size: 1216 to 2532)	
Body	Nylon with Glass filled (NGF)
Insert	Nylon with Glass filled (NGF)
Nut	Nylon with Glass filled (NGF)
Split Ring	Delrin
O-Ring	Nitrile

Piping System Design

GENERAL CONSIDERATIONS FOR THE PIPING SYSTEM DESIGN

A compressed air system must be controlled, regulated, and sized to ensure that an adequate volume of air, at a specific pressure and purity, will satisfy user requirements during the period of heaviest use.

OVERVIEW OF DESIGN

1. Locate each process, work station, or piece of equipment that uses compressed air. They should be located on a plan, and a complete list should be made to simplify record keeping. This initial process will act as a beginning for your piping layout.

2. Determine the volume of air and pressure range required at each location. Information regarding pressure and flow rates of the equipment such as tools can be obtained from the manufacturer. If the pressure and flow rates are not known, assign some preliminary rates until the specific values can be obtained.

3. Determine the system conditioning requirements for each piece of equipment. This includes the allowable moisture content, particulate size, and oil content. The system may require conditioning equipment including dryers, filters, lubricators and pressure regulators.

4. Establish how much time the individual tool or process will be in actual use for a one-minute period of time. This is referred to as the 'duty cycle'. In most industrial applications, tools or operations of a similar nature are usually grouped together.

5. Establish the maximum number of locations that may be used simultaneously on each main, and for the project as a whole. This is known as the 'use factor'.

6. Establish the extent of allowable leakage. Leakage is a result of the number and type of connections, the use of disconnects, the age of the system and the quality of the initial assembly process. Many small tools and operations will result in more leakage than fewer larger applications. A well maintained compressed air system will have an allowable leakage rate of 2-5%.

Note: This allowable leakage rate applies only to compressed air made on site. All other inert gas systems must be designed with the strictest health and safety considerations in mind including preventing leakage of any pipe contents.

7. Establish any allowance for future expansion. Thought should be given to over sizing some components (i.e., main supply lines) to avoid the cost of replacement at a later date.

8. Select the air compressor layout and assign a preliminary pressure drop for the system.

9. Select the air compressor type, conditioning equipment, equipment location, and air inlet, making sure that scfm (L/min) is used consistently for both the system and compressor capacity rating.

TO START, THE FOLLOWING INFORMATION MUST BE AVAILABLE:

- Total connected flow rate cfm (L/min) of all air-using devices, including flow to the air dryer system, if Applicable.

- Maximum pressure (psi) of all air-using devices.

- Duty cycle and use factors for these devices giving maximum expected use of air.

- Leakage and future expansion allowance, cfm (L/min).

- Allowable pressure drops for the entire system, including piping and conditioning equipment.

- Altitude, temperature, and contaminant removal corrections.

- Location where adequate space is available for air compressor and all ancillary equipment.

- Produce a final piping layout and size the piping Network.

DETERMINING PRESSURE LOSS IN JINDAL MLC PIPE USING PRESSURE DROP CHART

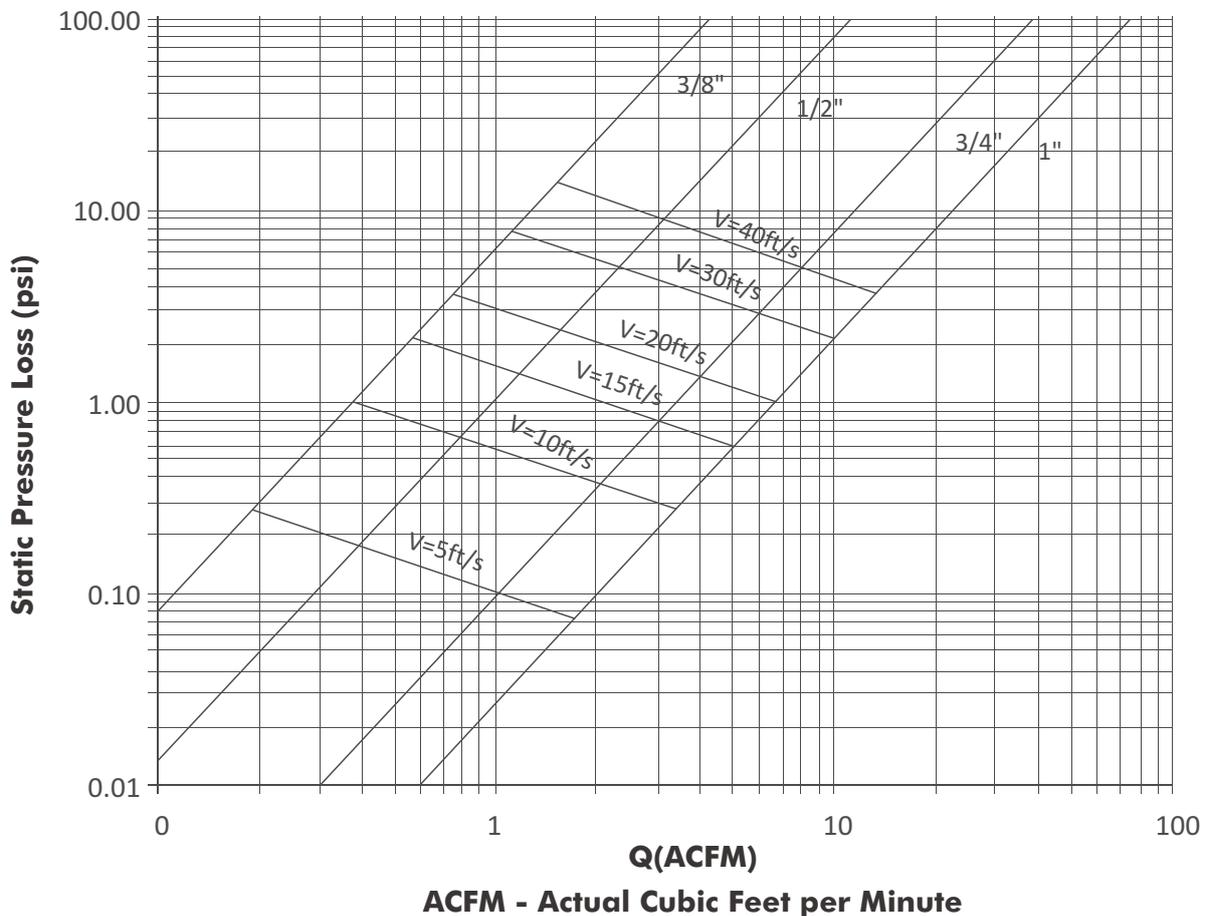
1. In order to use pressure drop charts, it is necessary to find the equivalent length of run from the compressor to the farthest point in the step. In addition to the actual measured pipe length, the effect of fittings must be considered. This is because fittings create an obstruction to the flow of air. This degree of obstruction has been converted to an equivalent length of pipe in order to make calculations easy.

2. Determine the actual pressure drop that will occur only in the piping system. Since the air compressor has not been selected yet, this figure is variable. A smaller pipe size may lead to higher compressor horsepower. It is considered good practice to oversize distribution

mains to allow for future growth and the addition of condition equipment that may add a pressure drop not anticipated at the time of original design. It should be noted that this practice may result in a higher initial cost for the piping system.

3. Size the piping using the appropriate charts, having first calculated the flow rate at the operating pressure and operating temperature, scfm, and the allowable friction loss in each section of the piping being sized. Since all pipe sizing charts are calculated using loss of pressure per some length of piping (100 ft {30.5m}), it is necessary to arrive at the required value for the chart you are using.

Pressure loss per 100 feet of Air Connect pipe Air at 200 psig (214.7 psia), 23°C



CONTAMINANTS

There are four general classes of contamination:

- Liquids (oil and water)
- Vapor (oil, water, and hydrocarbons)
- Gas
- Particulates

An understanding of the various pollutants in the air is helpful when an engineer has to decide what equipment is required to effectively reduce or remove them. The required level of protection from the various contaminants depends upon the purpose for the air. Prior to the selection of equipment the performance criteria for each system, along with the identity and quantity of pollutants, must be determined.

DETERMINING PRESSURE LOSS IN JINDAL MLC PIPE USING EQUATION

As air flows through the Air Connect piping system, it will experience friction resistance between the air and the pipe wall resulting in a pressure loss. This pressure loss is a result of the air:

- Density
- Dynamic viscosity
- Velocity (V)
- Temperature (T)
- Smoothness of the Pipe wall (C)
- Type of flow

The pressure drops in the Air Connect pipe can be determined using the following equation:

$$\Delta p = \frac{\rho \cdot \mu \cdot l \cdot v^2}{2d}$$

where,

- d = Internal Diameter of Pipe (in meter)
- l = Pipe length (in meter)
- v = Air Velocity (meter / second)
- p = Pressure loss (Pa)
- μ = Coefficient of Friction
- = Density of Air (kg/m^3)



Example:

For Sample installation having the following specifications:

- d = 40 mm
- l = 500 m
- v = 6 m/s
- SCFM (Normal) = 200
- Air Pressure = 7 bar

Pressure Loss in GI Pipes - 1.89 bar

Pressure Loss in Air Connect Pipes - 1.03 bar

Reduced Pressure Loss by using Air Connect - 0.86 bar

Annual Savings (8000 hrs usage) - Rs 1,84,500/-

PRESSURE LOSS THROUGH FITTINGS IN EQUIVALENT FEET

Pipe Size	Fitting Type	Velocity (fps) 200 psi @ 23°C					
		5	10	15	20	30	40
1216	Straight	1	2	2	2	3	3
	Tee Branch, Elbow	4	5	5	6	6	6
1620	Straight	2	3	4	4	4	4
	Tee Branch, Elbow	6	7	8	8	9	9
2025	Straight	4	4	5	5	5	6
	Tee Branch, Elbow	7	8	9	10	10	11

Straight = coupler, thread adapter, tee run

ADDITIONAL COST INCURRED DUE TO COMPRESSED AIR LEAKAGE (YEARLY)

Leakage Size (mm)	Energy Loss (kw)	Cost of Air Leakage (Rs/annum)
0.8	0.2	9,000
1.6	0.8	36,000
3.2	3	1,35,000
6.4	12	5,40,000

AIR CONNECT



ALSO AVAILABLE FOR INDUSTRIAL WATER SUPPLY IN GREEN COLOUR

Feature Comparison

FEATURE	Air Connect Pipes	Aluminum Pipes	PPR-C Pipes	GI PIPE
COST	Most cost-effective. Low initial investment, long Working life and no maintenance.	Most Expensive	Least Expensive but has a short Working Life	Expensive, has a short Working life and requires lot of maintenance
HYGIENE	Hygienic, made from 100% Food Grade Polyethylene.	Hygienic	Not hygienic, is not made from Food grade material.	Not hygienic, prone to corrosion, scaling and chemical reaction with walls
FLOW RATE	Best, has smooth inner surface and minimum use of fittings.	Good, has smooth inner surface but use of more fittings (elbows and couplers)	Good, has smooth inner surface but use of more fittings (elbows and couplers)	Poor, has rough inner surface which causes friction and use of more fittings (elbows and couplers)
CORROSION RESISTANCE	Good	Good	Good	Poor
BENDABILITY	Bendable without any spring back	Not bendable	Not bendable	Not bendable
REQUIREMENT OF FITTINGS	Minimum, use of Elbows and Couplers is eliminated	High, fittings are required at bends and joints at every 6 mts	High, fittings are required at bends and joints at every 6 mts	High, fittings are required at bends and joints at every 6 mts
JOINTING METHOD	Compression/Crimp method, Leak proof, fittings can be re-opened for maintenance work	Push-in Method	Electric fusion method, results in a permanent joint and cannot be re-opened for maintenance work.	Threading method, high chances of leakages in the future
WEIGHT	Light-weight, Upto 90% lighter than GI pipes.	Heavy, 5 times heavier than Air Connect Pipes	Heavy, compared to Air Connect Pipes	Heaviest, 10 times heavier than Air Connect Pipes.
STORAGE, HANDLING & TRANSPORTATION	Easy, are light weight and packed in coils of upto 200 mts. Come in Carton packing.	Difficult, are heavy and packed in lengths of 6 mts.	Difficult, are heavy and packed in lengths of 6 mts.	Difficult, are very heavy and packed in lengths of 6 mts. Also requires Heavy Transport vehicles.
INSTALLATION	Fast and Easy. Requires basic Tools only.	Fast and Easy. Requires basic Tools only.	Time consuming, requires electricity and Heating machine	Difficult and Time consuming
LINEAR THERMAL EXPANSION	Low	Low	High	Lowest
WASTAGES	Zero wastage	High	High	High

Raw Material - Nylon with Glass filled

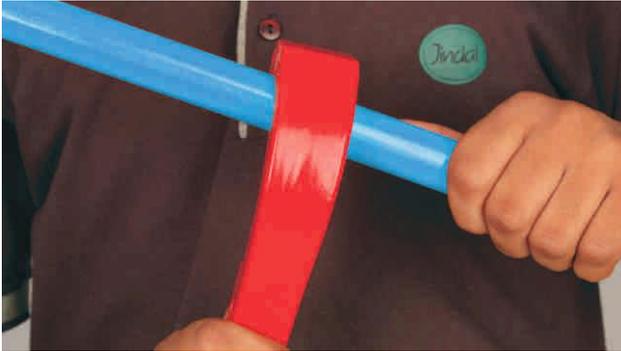
Nylon is one of the most widely used plastics because of its extreme strength, wear resistance, and self lubricating properties. Nylons are also known to have high impact resistance, high operating temperature and are light weight.

Nylon is commonly used as a replacement for bronze, brass, aluminum, steel and other metals. The glass reinforcement gives the material higher compressive strength and rigidity, as well as improved frictional characteristics.

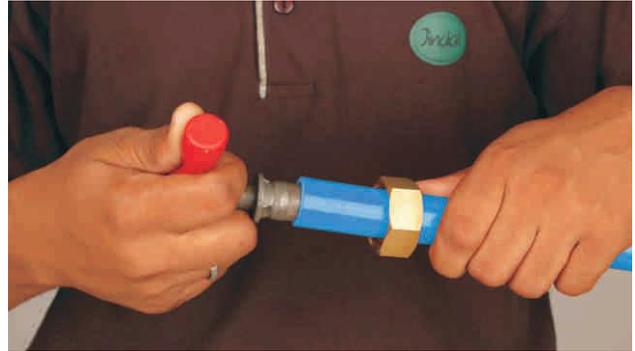


Installation Procedure

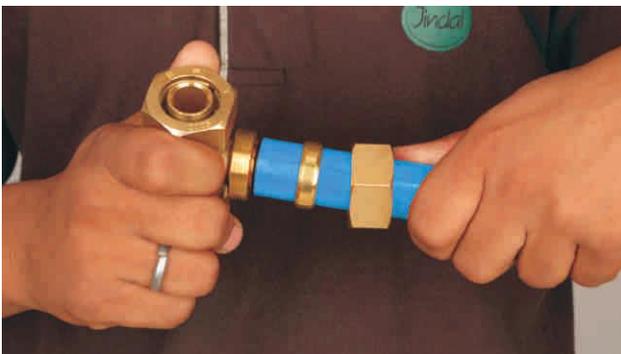
Compression Fittings



Step 1 - Cut Air Connect Pipe vertically using a Pipe Cutter.

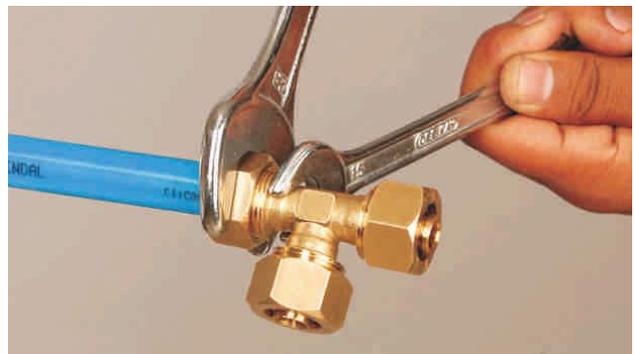


Step 2 - Round and bevel the end holes and make inclines of at least 2 mm.



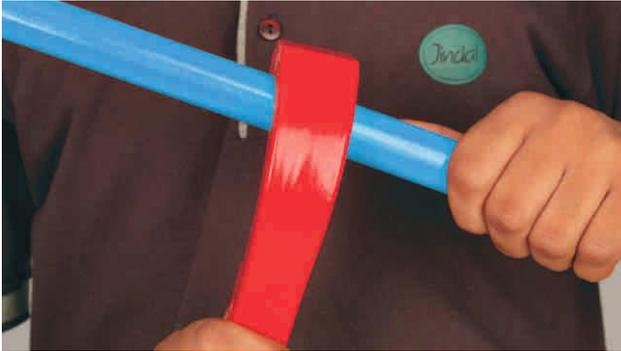
Step 3 - Choose the right size of fitting; put the nut over the pipe and slide the split ring over the pipe. Make sure that the mouth of the nut and the pipe faces the same direction.

Step 4 - Push the insert part of the fitting into the pipe up to the shoulder. Take care not to damage the O-ring.

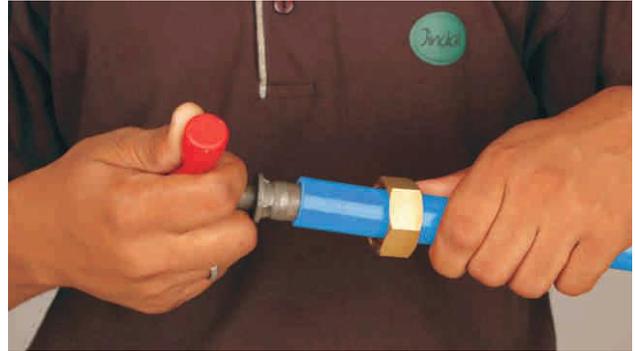


Step 5 - Use a spanner to tighten the nut.

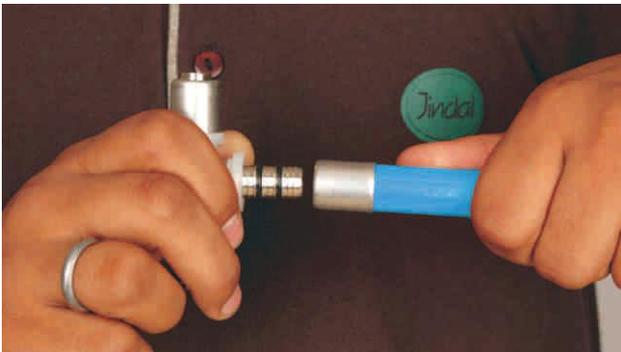
Crimp Fittings



Step 1 - Cut Air Connect Pipe vertically using a Pipe Cutter.



Step 2 - Round and bevel the end holes and make inclines of at least 2 mm.



Step 3 - Choose the right size of fitting; slide the stainless steel sleeve over the pipe.

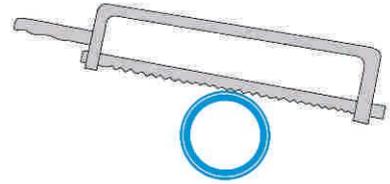
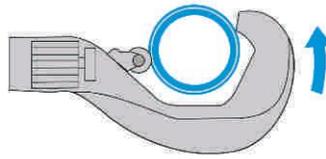
Step 4 - Push the insert part of the fitting into the pipe up to the shoulder. Take care not to damage the O-ring.



Step 5 - Install the crimping jaw in the crimping tool according to size of the fitting. Place the crimping tool over the sleeve of the fitting and press the tool until the jaws are completely closed. Now the crimping is finished.

Do's & Don'ts

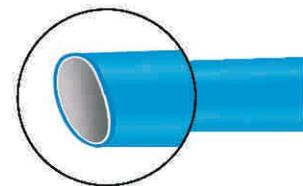
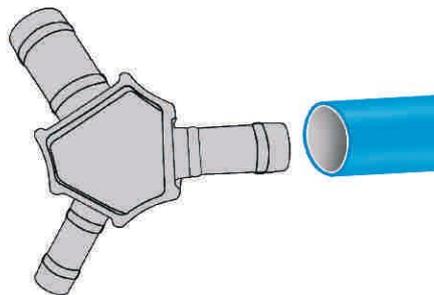
Pipe should not be cut using Hacksaw blade cutter. Only Air Connect pipe cutters should be used.



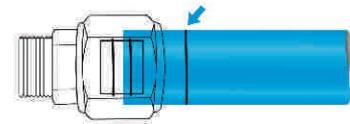
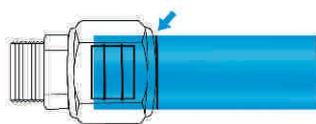
It is essential to use Bending spring for bending of the pipe as it maintains the shape of the pipe.



Pipe reamer should be used on the pipe before installing the fitting. It expands and makes the pipe round for proper installation of fitting.



While inserting the fitting into the pipe it should be ensured that the pipe reaches the end wall of the fitting and covers both the o-rings.



WARRANTY CERTIFICATE

AIR CONNECT PIPING SYSTEM for Compressed Air Supply

Jindal Pe-x Tubes Pvt. Ltd. ("Jindal"), hereby warrants to its clients that Air Connect Pipes and Fittings for Compressed Air application sold by it are free of defects in materials or manufacture under normal conditions of use for a period of 10 years from the date of installation. This Warranty only applies to the products stored, installed, tested and operated in accordance with the fitting instructions issued by Jindal and valid at the time the products were installed. Jindal further warrants that its products are compatible with each other but, at the same time, disclaims warranty for claims related to compatibility with non-Jindal products.

Where a claim is made during the Warranty period and products are proven to be defective in materials and/or manufacture at the time of delivery, Jindal will supply replacement products free of charge. This is the exclusive remedy under this Warranty.

Jindal disclaims any warranty or Warranty not expressly provided for herein, including any implied warranties of merchantability or fitness for a particular purpose. Jindal further disclaims any and all responsibility or liability for losses, damages and expenses, including special, direct, indirect, incidental and consequential damages, whether foreseeable or not, including without limitation any loss of time or use or any inconvenience arising from the ownership, installation or use of the products sold hereunder.

This Warranty does not affect the statutory rights of the consumer.

Client List



Maruti Suzuki



Hero Motocorp



Michelin Tyres



Supreme Treves
Supreme Nonwoven Industries



Grey Orange Robotics



Rajsriya Automotive Industries



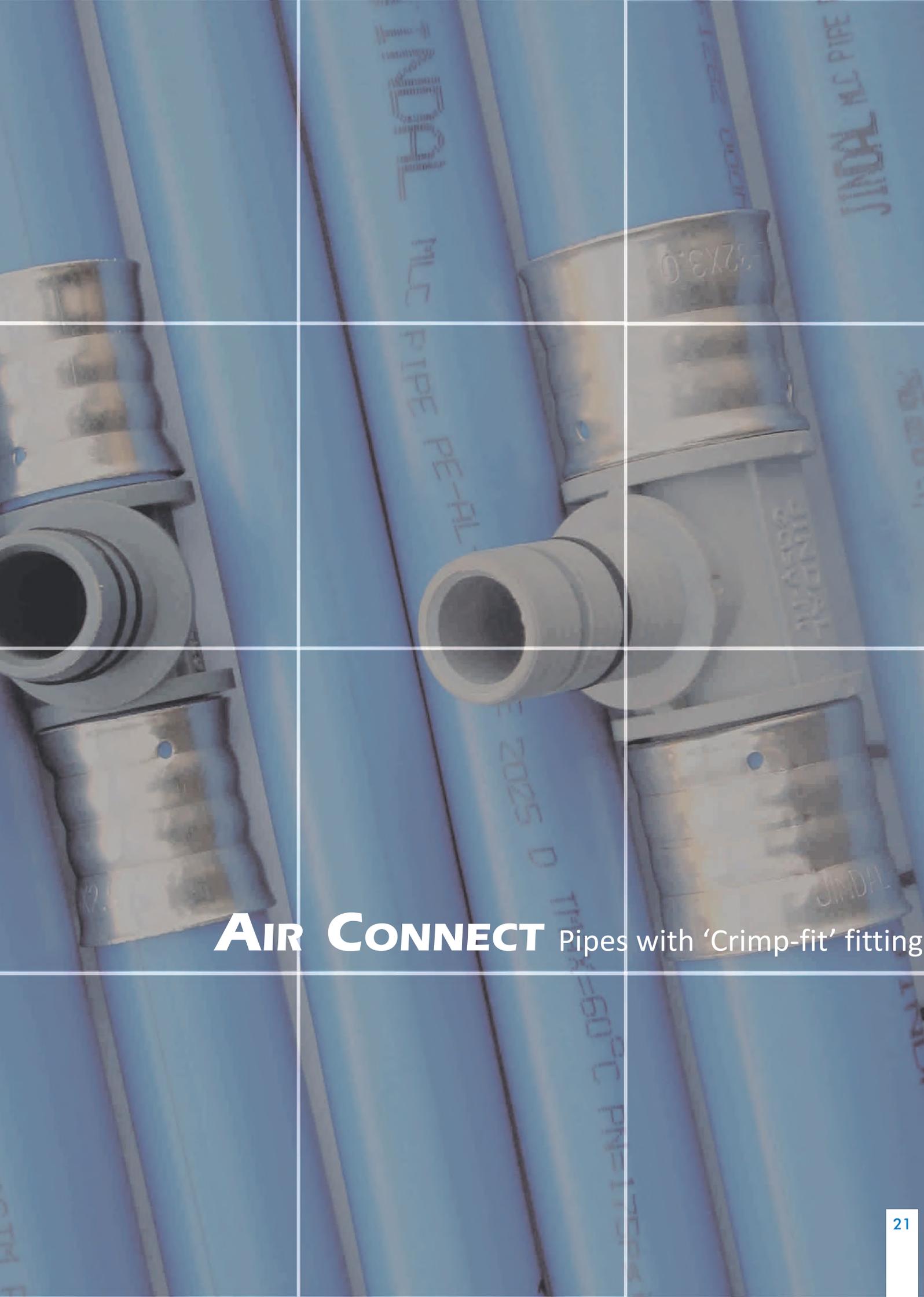
LT Foods



Corewire Surface Technology



Dixon Technology



AIR CONNECT Pipes with 'Crimp-fit' fitting

Item List

Pipe



Pipe D

Specification	Pipe ID (mm)	Pipe OD (mm)	Size (inches)
1216	12	16	1/2
1620	16	20	3/4
2025	20	25	1
2532	25	32	1 1/4
3240	32	40	1 1/2
4050	40	50	2

Fittings



Equal Union

Both ends connected to pipes of same size, e.g. S 1620 x 1620 means both ends connected to pipes 1620

Specification

1216 x 1216
1620 x 1620
2025 x 2025
2532 x 2532
3240 x 3240
4050 x 4050



Unequal Union

Both ends connected to pipes of different sizes, e.g. S 1620 x 1216 means one end connected to pipe 1620, the other to pipe 1216.

Specification

1620 x 1216
2025 x 1216
2025 x 1620
2532 x 1216
2532 x 1620
2532 x 2025
3240 x 1216
3240 x 1620

3240 x 2025
3240 x 2532
4050 x 1216
4050 x 1620
4050 x 2025
4050 x 2532
4050 x 3240



Male Union

One end connected to pipe, the other to female thread, e.g. S 1620 x 1/2 means one end connected to pipe 1620, the other to 1/2 female thread.

Specification

1216 x 1/2 M
1620 x 1/2 M
1620 x 3/4 M
1620 x 1 M
2025 x 1/2 M
2025 x 3/4 M
2025 x 1 M

2532 x 1 M
2532 x 1 1/4 M
2532 x 1 1/2 M
3240 x 1 1/4 M
3240 x 1 1/2 M
4050 x 1 1/2 M
4050 x 2 M



Female Union

One end connected to pipe, the other to male thread, e.g. S 1620 x 1/2 means one end connected to pipe 1620, the other to 1/2 male thread.

Specification

1216 x 1/2 F
1620 x 1/2 F
1620 x 3/4 F
2025 x 1/2 F
2025 x 3/4 F
2025 x 1 F

2532 x 1 F
2532 x 1 1/4 F
3240 x 1 1/4 F
4050 x 1 F
4050 x 1 1/2 F



Equal Elbow

Both ends connected to pipes of same sizes, e.g. L 1620 x 1620 means both ends connected to Pipes 1620.

Specification

1216 x 1216
1620 x 1620
2025 x 2025
2532 x 2532
3240 x 3240
4050 x 4050

Fittings



Unequal Elbow

Both ends connected to pipes of different sizes, e.g. L 1620 x 1216 means one end connected to pipe 1620, the other to pipe 1216.

Specification

1620 x 1216
2025 x 1620
2532 x 2025
4050 x 1216

4050 x 1620
4050 x 2025
4050 x 2532
4050 x 3240



Female Elbow

One end connected to pipe, the other to male thread e.g. L 1620 x 1/2 means one end connected to pipe 1620, the other to 1/2 male thread.

Specification

1216 x 1/2 F
1620 x 1/2 F
1620 x 3/4 F
2025 x 1/2 F
2025 x 3/4 F

2532 x 1 F
2532 x 1 1/4 F
3240 x 1 1/4 F
3240 x 1 1/2 F



Wall Plated Female Elbow

One end connected to pipe, the other to 1/2 male thread.

Specification

1216 x 1/2 F
1620 x 1/2 F



Equal Tee

Three ends connected to pipes of same sizes, e.g. T 1620 x 1620 x 1620 means three ends connected to Pipes 1620.

Specification

1216 x 1216 x 1216
1620 x 1620 x 1620
2025 x 2025 x 2025
2532 x 2532 x 2532
3240 x 3240 x 3240
4050 x 4050 x 4050



Unequal Tee

Three ends connected to pipes, with one or two ends different in size from the other end(s), e.g. T 2025 x 1620 x 1620

Specification

1620 x 1216 x 1620
2025 x 1216 x 2025
2025 x 1620 x 2025
2532 x 1216 x 2532
2532 x 1620 x 2532
2532 x 2025 x 2532
3240 x 1216 x 3240
3240 x 1620 x 3240

3240 x 2025 x 3240
3240 x 2532 x 3240
4050 x 1216 x 4050
4050 x 1620 x 4050
4050 x 2025 x 4050
4050 x 2532 x 4050
4050 x 3240 x 4050



Female Tee

Middle end connected to male thread, the other two to pipes, e.g. T 1620 x 1/2 F x 1620

Specification

1216 x 1/2 F x 1216
1620 x 1/2 F x 1620
1620 x 3/4 F x 1620
2025 x 1/2 F x 2025
2025 x 3/4 F x 2025

Tools & Accessories



Ball Valves

Specification

1216 x 1216
1620 x 1620
2025 x 2025
2532 x 2532



Pipe End

Specification

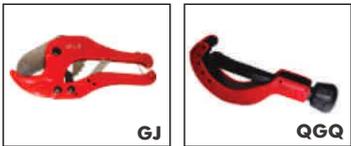
1216
1620
2025
2532
3240
4050



Manifold

Specification

$\frac{3}{4}$ x 1216 x 4 V
 $\frac{3}{4}$ x 1216 x 4
1 x 1620 x 4 V
1 x 1620 x 4



Pipe Cutter

Specification

GJ
QGQ



Plastic Reamer

Specification

ZYD 14 - 18
ZYD 20 - 32
ZYD 14 - 50



T- Reamer

Bending Tool

Specification

JD 3240 (T-Reamer)
JD 4050 (T-Reamer)
WGQ - 6 in 1 (Bending Tool)



Pressing Clamp

Specification

SYQ 14 - 32
(without moulds)

Tools & Accessories

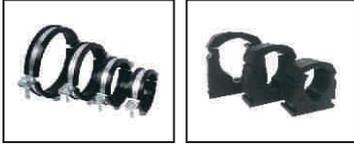


Bending Spring

Specification

BS 1216 (Internal)
BS 1620 (Internal)
BS 2025 (Internal)
BS 2532 (Internal)

BS 1216 (External)
BS 1620 (External)
BS 2025 (External)
BS 2532 (External)



Pipe Support Split Clamps

Specification

1216
1620
2025
2532
3240
4050

NOTES

All information given in this brochure are in good faith and is believed to be accurate and reliable. However, it does not represent and/or warrant in any manner the information and suggestions contained in this brochure. Data presented is the result of laboratory tests and field experience. Jindal has a policy of continual product improvement and, therefore, reserves the right to modify any products shown in this catalog without prior notice.



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Quality for Plumbing