SYNERGAIR

Compressed Air Piping Systems and Accessories

APPLIED SYSTEM TECHNOLOGIES™

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Synergair Piping Systems

The Synergair Eco-Line system is designed specifically for small automotive, residential, and light industrial compressed air, inert gas, and vacuum applications.

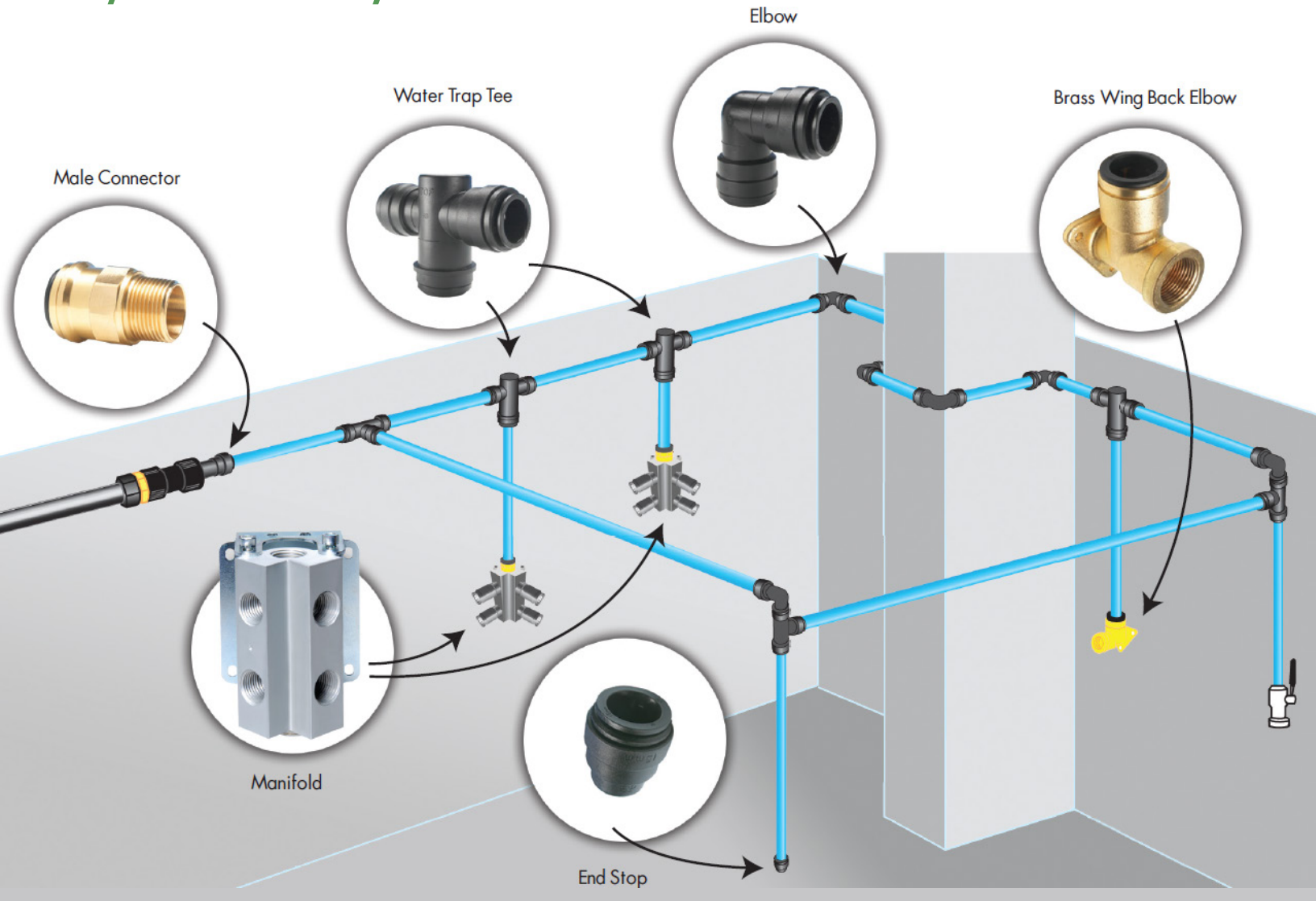
The heart of the Eco-Line product is a high-quality aluminum alloy tubing, providing a super-efficient, lightweight, flexible, and easy-to-install system. With the use of a standard tubing cutter, any type of system can be installed. Whether it's a simple straight run along a wall or the most complex of installations, Synergair will prove to be the easiest system in the market to use.

To support Synergair's high-quality tubing, a comprehensive range of simple-to-use push-connect fittings completes the lineup. As long as the tubing is deburred, simply push the tubing into the fitting, and your connection is made and ready to use. "What could be easier?"
The Synergair system is so simple to use, extend, or modify that it can easily be installed 75% faster than conventional piping methods, such as steel and copper.

Key Benefits of Synergair

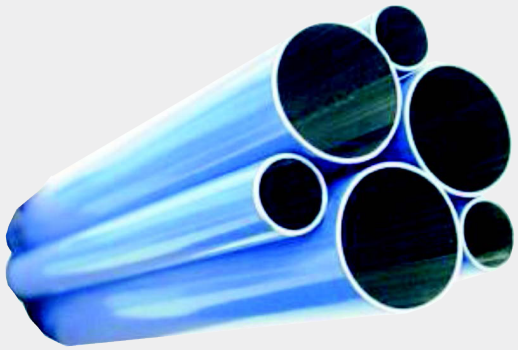
- Installation time reduced by at least 75%
- Safe, secure, leak-proof
- Easy to alter or extend a system
- Lightweight and easy to handle
- No corrosion, reduced maintenance
- System ready for immediate use after carrying out test procedure

System Layout



Synergair Aluminum Tubing

The standard tubing length is 16 feet, but we can also supply it in 8-foot increments, available in quantities of 2. Synergair tubing is made from marine-grade aluminum (6063 T4) to ensure exceptional quality and outstanding performance when paired with our engineered fittings.



Bore Size	Length	Part Number	Weight	CFM @ 103 PSI
15mm	16ft	8000-15-16-Blue	1.65 lbs	36
22mm	16ft	8000-22-16-Blue	2.51 lbs	75
28mm	16ft	8000-28-16-Blue	3.24 lbs	126

Synergair Engineered Fittings

Brass Straight Connector

Part No.	Pipe OD mm	Thread
800015-10-10MA	15	1/2" NPT

Tee

Part No.	Pipe OD mm
8000-15-23T	15
8000-22-23T	22
8000-28-23T	28

Reducer

Part No.	Stem OD mm	Pipe OD mm
8000-22-15R	22	15
8000-28-15R	28	15
8000-28-22R	28	22

Brass Male Stem Adapter

Part No.	Pipe OD mm	Thread
8000-15-12SA	15	1/2" NPT
8000-22-17SA	22	3/4" NPT
8000-22-18SA	22	1" NPT
8000-28-19SA	28	1" NPT

Reducing Tee

Part No.	Pipe OD mm	Branch OD mm
8000-15-22RT	22	15

U Bend

Part No.	Pipe OD mm
8000-15-32UB	15

Synergair Engineered Fittings

Union Connector

Part No.	Pipe OD mm
8000-15-40U	15
8000-22-40U	22
8000-28-40U	28

Water Trap Tee

Part No.	Pipe OD Ends mm
8000-22-25WT (see details on pg 6)	22

Stem Elbow

Part No.	Pipe OD mm	Stem OD BSP
8000-15-15SE	15	15
8000-22-22SE	22	22

Elbow

Part No.	Pipe OD mm
8000-15-13E	15
8000-22-13E	22
8000-28-13E	28

Water Trap Tee Converter

Part No.	Size mm
8000-28-25WTC (see details on pg 6)	28

End Stop

Part No.	Pipe OD mm
8000-15-81-ES	15
8000-22-81-ES	22

Plug

Part No.	Pipe OD mm	Colors
8000-15-51P	15	Black
8000-22-51P	22	Black
8000-28-51P	28	Black

Wire Hanging System

Part No.	Length
TP-831-06-PK10S	15 ft.

Quick Coupler, Industrial

Part No.	Stem OD mm
TP-91-04M-IND-S	1/4” Male
TP-91-06M-IND-S	3/8” Male
TP-91-08M-IND-S	1/2” Male
TP-92-04F-IND-S	1/4” Female
TP-92-06F-IND-S	3/8” Female
TP-92-08F-IND-S	1/2” Female

Brass Wing Back Elbow

Part No.	Pipe OD mm	Thread
8000-15-64WB	15	1/2” NPT

Tools

Part No.		
TP-TUBE CUTTERS	20-63	Tube Cutter
TP-MANUAL-DBS	20-40	Deburring Tool

Quick Coupler, Industrial

Part No.	Pipe OD mm
TP-92-04HB-IND-S	1/4” Hose Barb
TP93-06HB-IND-S	3/8” Hose Barb
TP-93-08HB-IND-S	1/2” Hose Barb

Synergair Engineered Fittings

Metric to Inch Adapter

Part No.	Stem OD mm	Pipe OD mm
8000-15-62ST	15 mm	3/8”

Manifold

Part No.	Size
TPMFD-4-08FS	1/2” inlet & 4x1/2” outlets
TPMFD-4-12FS	3/4” inlet & 4x1/2” outlets
TPMFD-PLUGS	1/2” plug

Plug

Part No.	Thread npt
TP-94-04M-S	1/4” Male
TP-94-06M-S	3/8” Male
TP94-08M-S	1/2” Male

Pipe Clips and Spacers

Part No.	Pipe OD mm	Colors	
8000-15-09C	15	Black	Clip
8000-22-09C	22	Black	Clip
8000-28-09C	28	Black	Clip
8000-00-00CS		Black	Spacer

Plug

Part No.	
TP-96-04HB-S	1/4” Hose Barb
TP-96-06-HB-S	3/8” Hose Barb
TP-96-08-HB-S	1/2” Hose Barb

Two Way Outlet Y Adapter

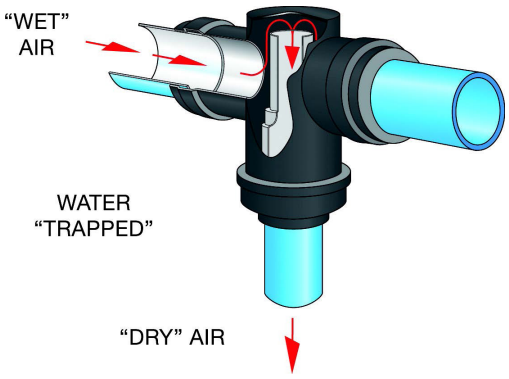
Part No.	Size
TPFF-08-08S	1/2”F x 1/2”F
TPMF-06-06S	3/8”M x 3/8”F
TPMF-08-08S	1/2”M x 1/2”F

Hanging Brackets

Part No.	Pipe OD mm
90820-20-25	15
90820-20-25	22
90820-32	28

Water Trap Tee

Our Water Trap Tee effectively addresses the ongoing issue of moisture in compressed air systems, offering an easy alternative to installing “Goose Necks.” The innovative internal design allows air to flow with minimal head loss from the main to the take-off point while preventing water from following. Moisture is retained in the line and can be drawn off at a suitable location.

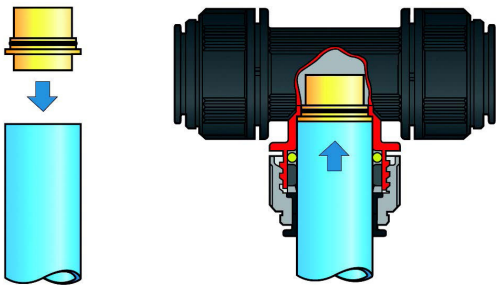


Installation

For optimal function, it is crucial that the Water Trap Tee is installed with the air supply positioned near horizontal and the outlet port facing vertically downward. Markings on the body indicate the correct orientation to assist with installation.

Water Trap Tee Converter

The Water Trap Tee Converter offers a simple and convenient solution for converting a standard 28mm Tee into a Water Trap Tee. It effectively prevents condensing water from entering the vertical take-off spur. For proper function, the air supply must be installed with the correct fall, and water drain points should be regularly vented.

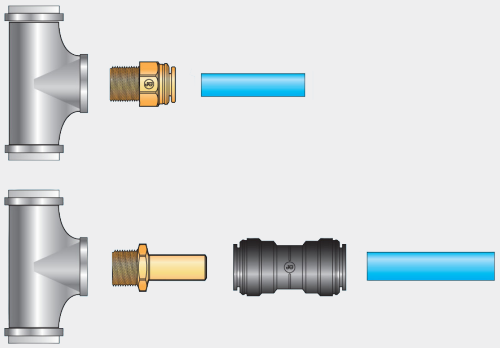


Assembly Instructions

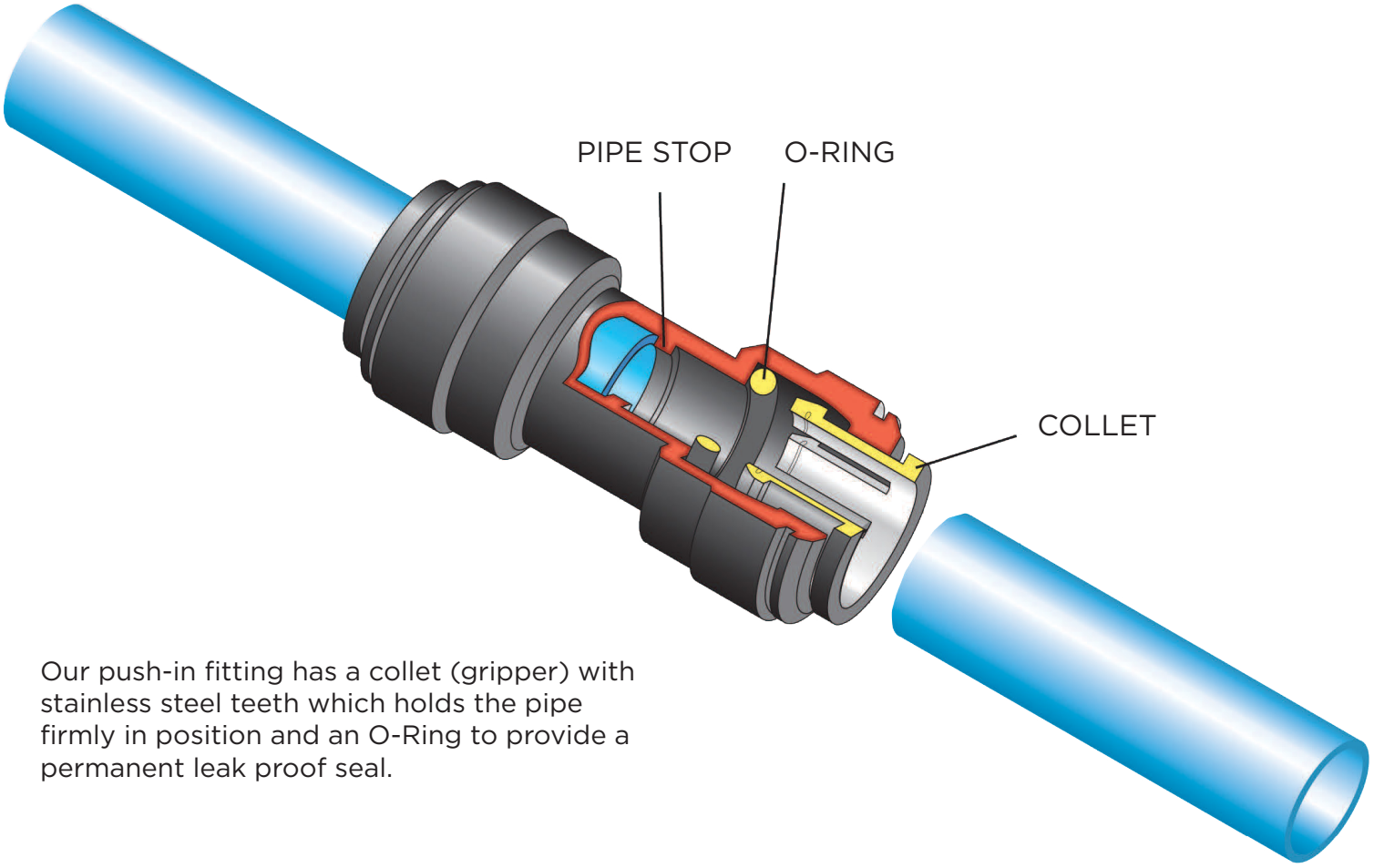
1. Using our 28mm aluminum pipe, ensure the pipe is cut square and free of burrs.
2. Press the shorter spigot into the pipe. The fit on the aluminum pipe will be loose, but this will not impact functionality.
3. Insert the pipe and converter into the center leg of the tee, pushing it up to the pipe stop.
4. Turn the screw cap approximately 1/4 turn to lock the pipe in place.

Easy to Extend Steel System

Our fittings and pipe can form a stand alone system or be used to modify or extend an existing steel system.



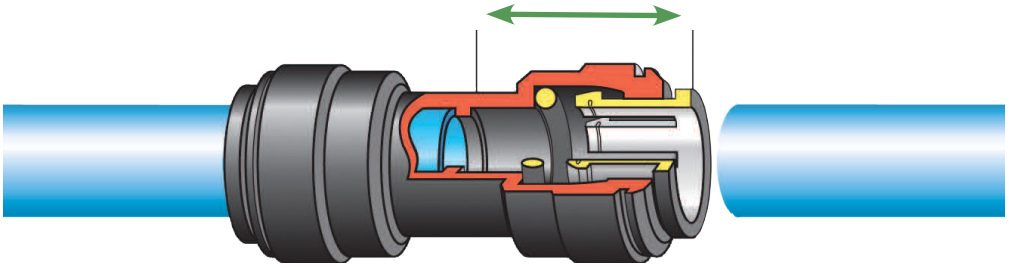
Easy to Make a Connection



Our push-in fitting has a collet (gripper) with stainless steel teeth which holds the pipe firmly in position and an O-Ring to provide a permanent leak proof seal.

Pipe Stopping Distances

Stops are located at the following distances from the end of the fitting.



Size	Stop Distances
15mm	30mm
22mm	35mm
28mm	44mm

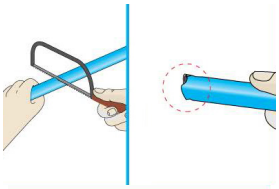
A line is molded onto the fitting to show the position of the pipe stops.

15mm & 22mm Fittings

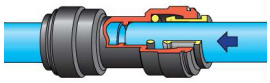
Fittings and pipe should be kept clean and undamaged before use.

Use a standard tube cutter.

Do NOT use a hacksaw. To avoid damage to the O-ring, remove burrs and sharp edges.



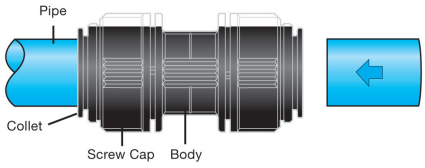
Push up pipe to stop.



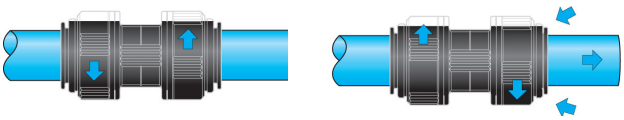
Pull to check security. Test the system as specified in 'installation test procedure' before using the system.

To disconnect, ensure the system is depressurized. Push the collet toward the fitting and remove the pipe. The fitting can be reused.

28mm Fittings

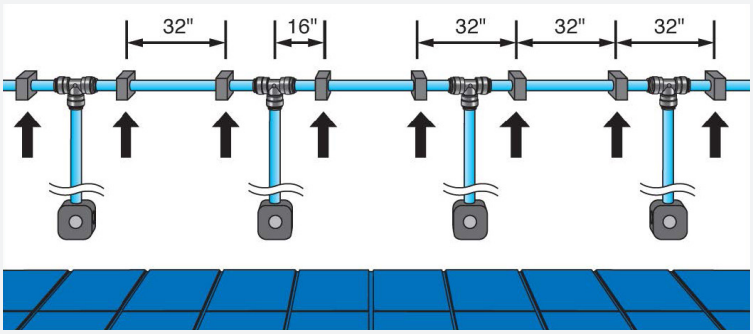


28mm fittings also have a collet with stainless steel teeth and an O-Ring. After inserting the pipe, a screw cap is turned approx 1/4 turn. This locks the collet in place and reduces lateral and sideways movement of the pipe.
To disconnect, turn the screw cap 1/4 turn, push in the collet and remove the pipe. The fitting and pipe can be reused

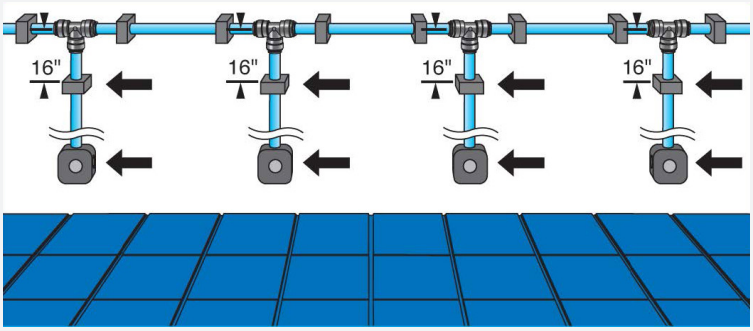


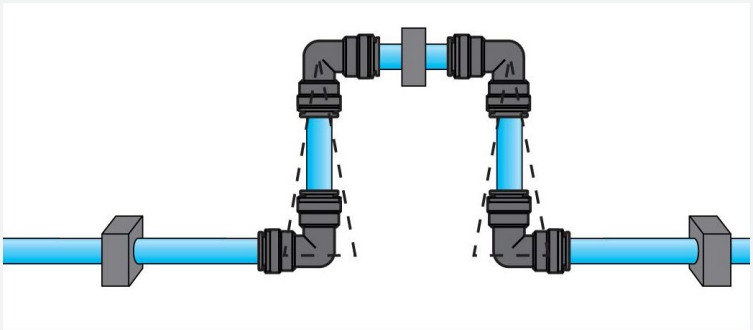
Recommended Install

When installing a compressed air system, it is advisable to first attach only the horizontal pipe clips and only attach the clips to the vertical pipes after a small amount of pressure has been applied to the system. This will ensure that the vertical pipes have positioned themselves correctly before they are clipped.



Phase 1: System without pressure





On long pipe runs, it is advisable to install an expansion bend, as shown in the diagram.

Note: All compressed air systems should be equipped with an air line water trap, we recommend our 8000-22-25WT Water Trap Tee for this purpose (as shown on page 6 of this catalog).

Compressed Air Piping Systems Technical Specs

Working Temperature Range

Minimum working temperature -20°C (- 4°F)
Maximum working temperature +60°C (+140°F)

The above working temperatures apply to compressed air applications only.

Working Pressure

Maximum working pressure 175 psi (12 BAR)

Material Specification

The fittings are made up of three components:

1. Bodies are produced in strong engineering plastic or in brass.
2. O-Rings are nitrile rubber.
3. Collets are produced in acetal copolymer with stainless steel teeth.

Standards

Tested in accordance to the requirements of AMSE 31.1 Tubing manufactured to ASTM standards for aluminum tubing.

Applications

These products are designed for use with compressed air, vacuum and inert gases. For other applications please contact SynergAir's technical department.

Installation Guide — Code of Practice

When installing a compressed air piping system it is recommended that reference be made to local "Approved Code of Practice — Safety of Pressure Systems".

Installations — Our Recommendations

The pressure rating and installation guidelines of the Eco-Line product must be employed during the design of a piping system.

Pipe should be supported at a minimum 1.5 meters (59") to prevent excessive load being applied to the fitting. Supports should be installed close to the fittings, but no more than 50mm (2") from the end of the fitting.

Eco-line tube and fittings should only be connected after the air receiver, after cooler or dryer and not direct to a compressor discharge outlet.
It is a requirement that all pipe and fitting installations are pressure-tested after installation and before handing over to the final user.

Installation Test Procedure

Check that all compression and push-in connections have been properly completed and are fully engaged.

1. Check that all wall mounting and hanging brackets are fixed securely.
2. Ensure that an isolation valve is installed and closed between the compressed air supply and the pipework. A pressure gauge must be clearly visible from the isolation valve to allow for correct monitoring of the system during the system pressure test.
3. Ensure that a safety relief valve is properly installed and is fully functional. (If a safety valve is not installed on the air receiver, one should be fitted within the piping system.) The safety valve must be set for a maximum operating pressure of 175psig.
4. Close all outlet points in the system.

Pressurizing the System

It is good/safe working practice to evacuate the entire working area before pressurizing a system.

1. Slowly open the main isolation valve while viewing the main pressure gauge in the pipework.
2. Allow the pressure in the system to increase to 1 BAR (14.5psig). CLOSE VALVE ! Hold for 15 minutes.
3. Visually inspect the entire system for integrity, loose or slipping joints and leakage. If any faults are observed, depressurize the system completely and correct the problem. Repeat steps 6 through 8. If the system is secure, repeat steps 6 through 8 in 1 BAR (14.5psig) increments until the maximum required working pressure is achieved. NOTE: Maximum allowable working pressure for Eco-Line is 12 BAR (175 psig). When using Eco-Line with other piping systems, do not exceed the maximum working pressure of the Eco-Line system, 12 BAR (175 psig.)
4. When full working pressure is achieved, hold the system pressure for duration of one hour.
5. Re-inspect the system for integrity, loose or slipping joints and leakage.
6. If any faults are observed, depressurize the system completely and correct the problem. Repeat the process beginning at step 6.

NOTICE - INSURANCE REQUIREMENTS

Insurance companies may require a pressure test of the system to 1.5 times the required maximum working pressure. If this is required, carry out the test procedure to the inspection requirement.

If any of these instructions are not 100% clearly understood, you must call SynergAir for further instructions.

SynergAir is not liable for any user/installer not following these instructions correctly. It is totally the responsibility of the users/installers to install and operate a system in a safe and secure working condition.

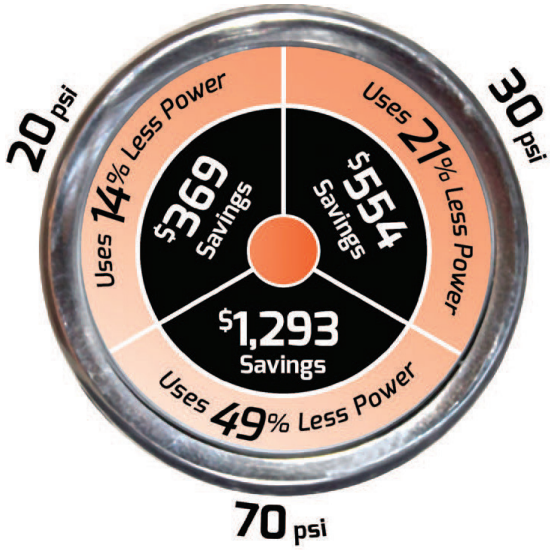
Powermizer System Flow Controllers

Designed to optimize your compressed air usage and reduce waste, Powermizer can actually increase the life of your compressor and decrease maintenance cost by saving wear and tear. All of this in addition to reducing your facilities' energy consumption, is a winning proposition from all angles.
Installed downstream of your compressed air storage tank, it will enable you to accurately control your downstream air pressure to minimize power consumption of the air compressor and provide the optimum pressure control for your production equipment. The outcome is increased profitability to your bottom line. Simple-single point control for the entire compressed air system

- Dramatically reduces power consumption and maintenance costs
- Extends equipment life expectancy
- Protects all downstream production equipment
- Ensure high quality repeatability

Powermizer 10/7 Equation

Every 10 psi in plant pressure reduction will gain you 7% energy savings. Installing a Powermizer in conjunction with suitable storage, allows compressed air to be stored at a high pressure while delivering consistent, low-pressure air to the balance of the system



Typical Compressor Usage

15 HP (11kw) compressor running 3000 hours per year at 8¢ per KW = $2,640 annual power cost.

Part Number	Connection Size, Female	Max Flow	Max Inlet Pressure	Control Range	Max Operating Temp.	Sensitivity	Repeatability
PMZR 75 CONTROLLER LR-S PMZR 75 CONTROLLER RL-S	1/2" NPT 1/2" NPT	75 scfm	300 psig	0-160 psig	176˚F (+80˚C) -4˚F (-20˚C)	0.2% full span	+- 0.5% of full span
PMZR 200 CONTROLLER LR-S PMZR 200 CONTROLLER RL-S	1" NPT 1" NPT	200 scfm	300 psig	0-160 psig	176˚F (+80˚C) -4˚F (-20˚C)	0.2% full span	+- 0.5% of full span
PMZR-1000 CONTROLLER LR-S PMZR 1000 CONTROLLER RL-S	2" NPT 2" NPT	1000 scfm	300 psig	0-160 psig	176˚F (+80˚C) -4˚F (-20˚C)	0.2% full span	+- 0.5% of full span

Electronic Drain Valve

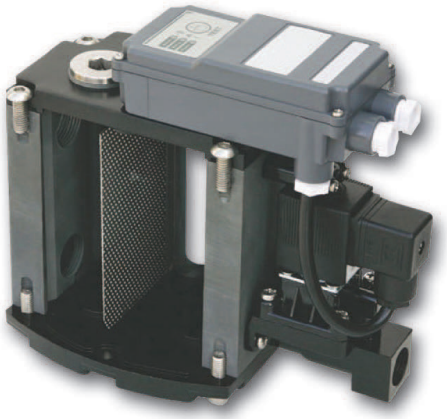
The SynergAir Drain Valve is the most economical and efficient method of draining condensate from compressed air systems. Removal of condensate from your system is a critical maintenance requirement. Failure to carryout regular draining of condensate will result in serious disruption to production, deterioration in product quality and damage to sensitive pneumatic equipment. The SDV eliminates the risk of human error and guarantees regular/ controlled un-interrupted drainage of your system.

- Simple to operate
- Minimal maintenance/easy clean strainer
- Low power consumption
- Long trouble free life
- Power indicator
- Complete with isolation ball valve and 1/2 ” NPT thread strainer
- 10 foot power cord with standard plug
- CE, CSA, CULUS approved
- All valves with 4mm orifice

Description	Part Number
1/4” NPT Including Strainer	TP-900-04S
1/2” NPT Including Strainer	TP-900-08S

Zero-Loss Drain Valve

The ZLD range of zero loss drains provides the most cost effective way of draining moisture from your compressed air system. ZLD drains are the only valve in its class that has a built in particulate strainer to prevent the discharge valve from ever getting blocked from particle contamination. High quality state of the art electronics allow for local and remote monitoring of drain functionality.



- Dependable condensate removal
- Maintenance free level sensors
- Stainless steel internal strainer
- State of the art electronics with local and remote monitoring capabilities
- Intelligent fail safe operating functionality
- Compact design for easy installation

Flow Rate	Part Number
200 CFM	TP-ZLD-200S
500 CFM	TP-ZLD-500S

APPLIED SYSTEM TECHNOLOGIES™

At Applied System Technologies (AST), we are more than just a provider of piping systems — we are your trusted partner in creating efficient, reliable, and scalable solutions for any flow. With decades of experience, we understand that every industry has unique needs, and our team is dedicated to delivering tailored piping solutions that ensure optimal performance, reduced downtime, and long-lasting durability.

Whether you're upgrading an existing system, expanding a facility, or building from the ground up, AST is committed to providing you with the expertise, support, and high-quality materials needed to keep your operations running smoothly. We focus on engineering excellence, seamless installation, and a deep understanding of your specific challenges, allowing us to be the partner you can count on for every phase of your project. From initial design to final installation and ongoing support, AST is here to help you achieve the results you need.