



PIPING SYSTEM

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

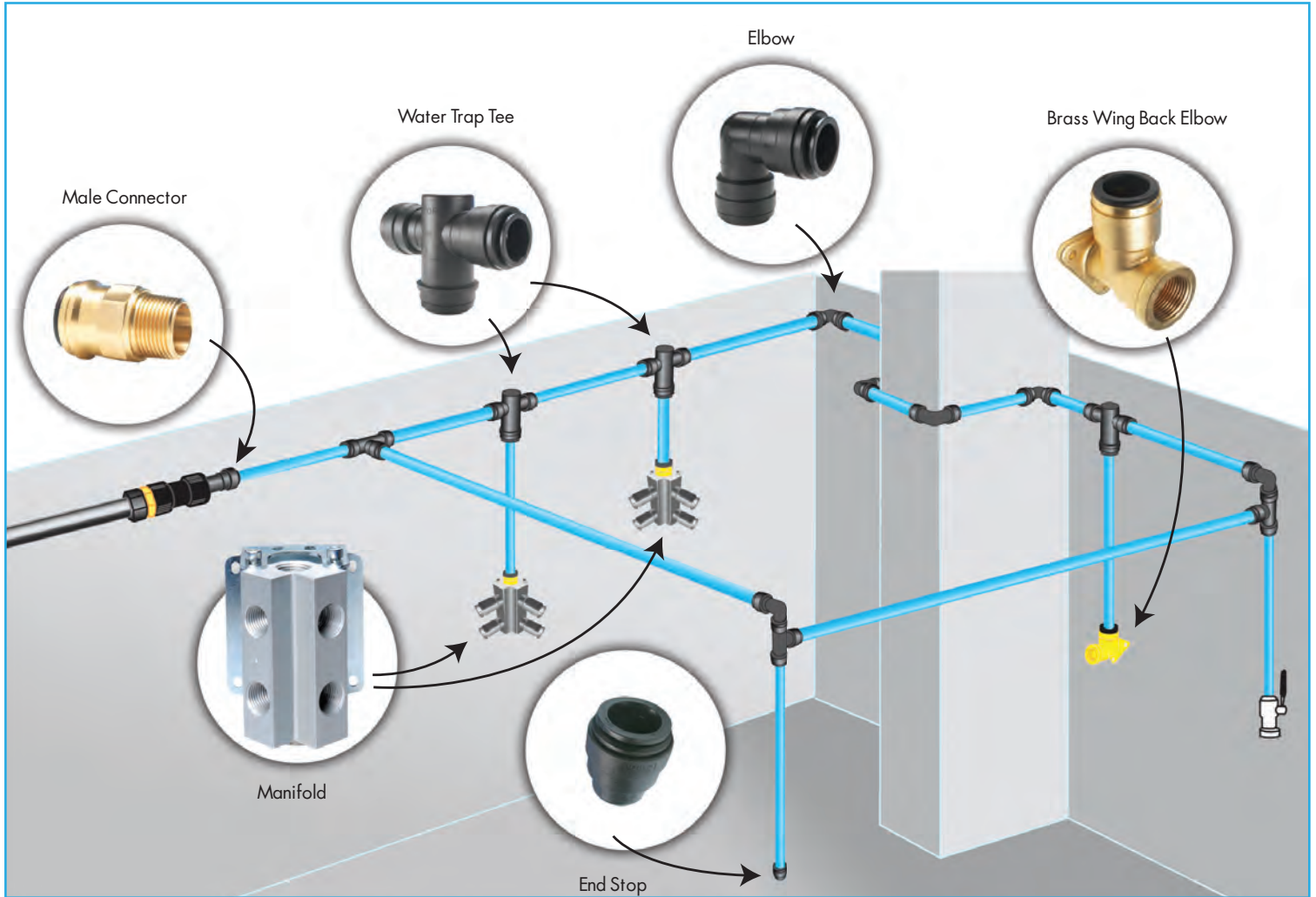
The heart of the Eco-Line product is a high quality aluminum alloy tubing which provides a super efficient, lightweight, flexible and easy to install system. With the use of a standard tubing cutter any type of system can be installed. Whether it's a simple straight run along a wall to the most complex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



System Layout



- 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

THREADED STEEL TUBE

- Time consuming installation
- Difficult process
- Needs high level of skill
- Requires special tooling and equipment
- Corrodes and leaks

SOLVENT WELDED PVC

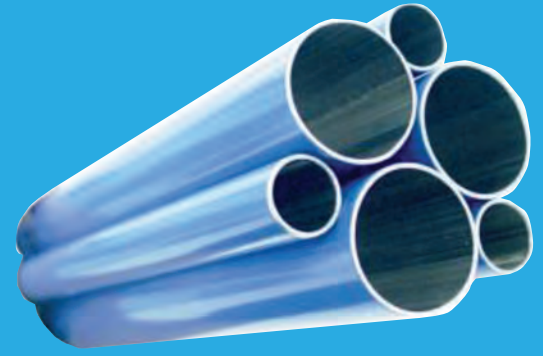
- Long installation time
- Lengthy curing time for solvent to dry
- Failures common at high pressure/temperatures
- Not an industrial strength system

SYNERGAI SYSTEM

- One simple movement provides a secure leak free system
- Zero corrosion
- System ready for immediate use after carrying out test procedure

SynergAir Aluminum Tubing

Standard tubing length is 16 feet, but we can supply in 8 foot lengths, in multiple quantities of 2. SynergAir tubing is manufactured from marine grade aluminum (6063 T4) to ensure the highest quality levels and outstanding performance when accompanied by our engineered range of 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
15mm	8ft	8000-15-08-Blue		
22mm	8ft	8000-22-08-Blue		
28mm	8ft	8000-28-08-Blue		

SynergAir Engineered Fittings

BRASS STRAIGHT CONNECTOR



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

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

UNION CONNECTOR



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

ELBOW



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

TEE



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

REDUCING TEE



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

WATER TRAP TEE



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

WATER TRAP TEE CONVERTER



Part No.	Size mm
8000-28-25WTC (See details on page 6)	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

U-BEND



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

STEM ELBOW



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

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

BRASS WING BACK ELBOW



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

METRIC TO INCH ADAPTER



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

PIPE CLIPS AND SPACERS



Part No.	Pipe OD mm	Colors
8000-15-09C	15	BLACK
8000-22-09C	22	BLACK
8000-28-09C	28	BLACK



Part No.	Colors
8000-00-00CS	BLACK

HANGING BRACKETS



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

WIRE HANGING SYSTEM



Part No.	Length
90832-15	15 ft.

TOOLS



Part No.	Size	Description
90870	20-63	Tube Cutter
90880	20-40	Deburring Tool

MANIFOLD



Part No.	Size BSP
90601- MFD	1/2" inlet & 4 x 1/2" outlets
90602- MFD	3/4" inlet & 4 x 1/2" outlets
90610-08-NPT	1/2" Plug

TWO WAY OUTLET Y ADAPTER



Part No.	Size
82600-08-08	1/2" M X 1/2" F

BALL VALVES NPT



Part No.	Size
86300-08-08	1/2" F X 1/2" F
86310-06-06	3/8" M X 3/8" F
86310-08-08	1/2" M X 1/2" F

QUICK COUPLER, UNIVERSAL



Part No.	Thread npt
80191-04	1/4" Male
80191-06	3/8" Male
80191-08	1/2" Male
80192-04	1/4" Female
80192-06	3/8" Female
80192-08	1/2" Female

QUICK COUPLER, UNIVERSAL



Part No.	Size
80193-04	1/4" Hose Barb
80193-06	3/8" Hose Barb
80193-08	1/2" Hose Barb

PLUG



Part No.	Thread npt
80221-04	1/4" Male
80221-06	3/8" Male
80221-08	1/2" Male

PLUG



Part No.	Thread npt
80222-04	1/4" Female
80222-06	3/8" Female
80222-08	1/2" Female

PLUG



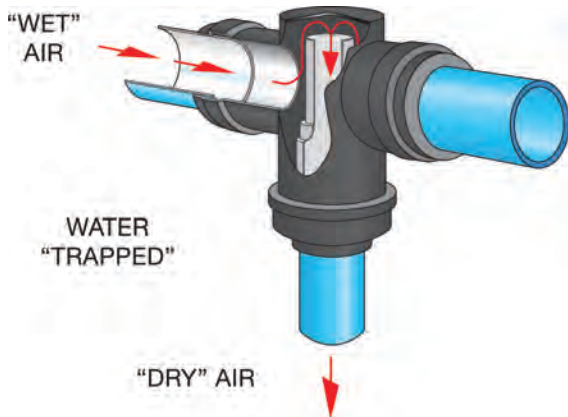
Part No.	Size
80223-04	1/4" Hose Barb
80223-06	3/8" Hose Barb
80223-08	1/2" Hose Barb

PRESSURE GAUGE KIT



Part No.	Size
90601-G	2-1/2"
Stainless steel filled gauge, 1/2" npt M/F	

Water Trap Tee

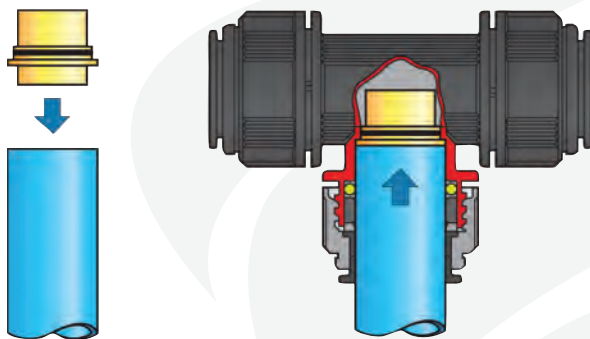


Our new Water Trap Tee solves the on-going problem of moisture in a compressed air system and provides the easy alternative to the need to install "Goose Necks". The ingenious inside arrangement of the fitting allows air to flow, with minimum head loss from the main to take-off point without allowing water to follow. The moisture is retained in the line to be drawn off at some suitable location.

Installation

It is of vital importance for the correct function of the Water Trap Tee that the air supply within which the Tee is installed is near horizontal and that the outlet port faces vertically downwards. Markings to indicate correct orientation have been molded onto the body to assist installation.

Water Trap Tee Converter



The Water Trap Tee Converter is a simple, convenient way of converting a standard 28mm Tee to a Water Trap Tee. This will stop condensing water from entering the vertical take off spur. The air supply needs to be installed with the correct fall and water drain points regularly vented.

To Assemble

Using our 28mm aluminum pipe, the pipe must be cut square and be free of burrs.

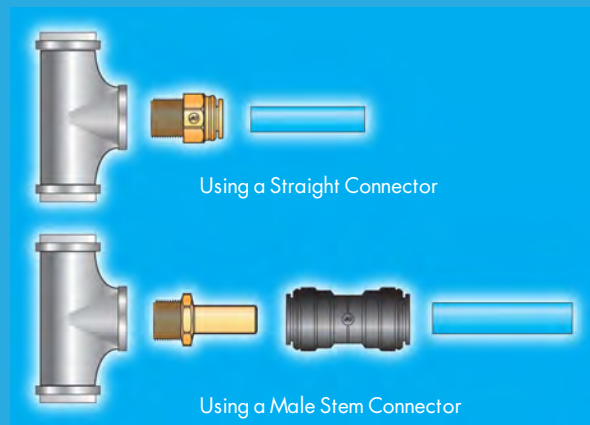
Press the shorter spigot into the pipe. The fit on aluminum pipe will be loose, this will not affect the function.

Push the pipe and converter up to the pipe stop of the center leg of the tee.

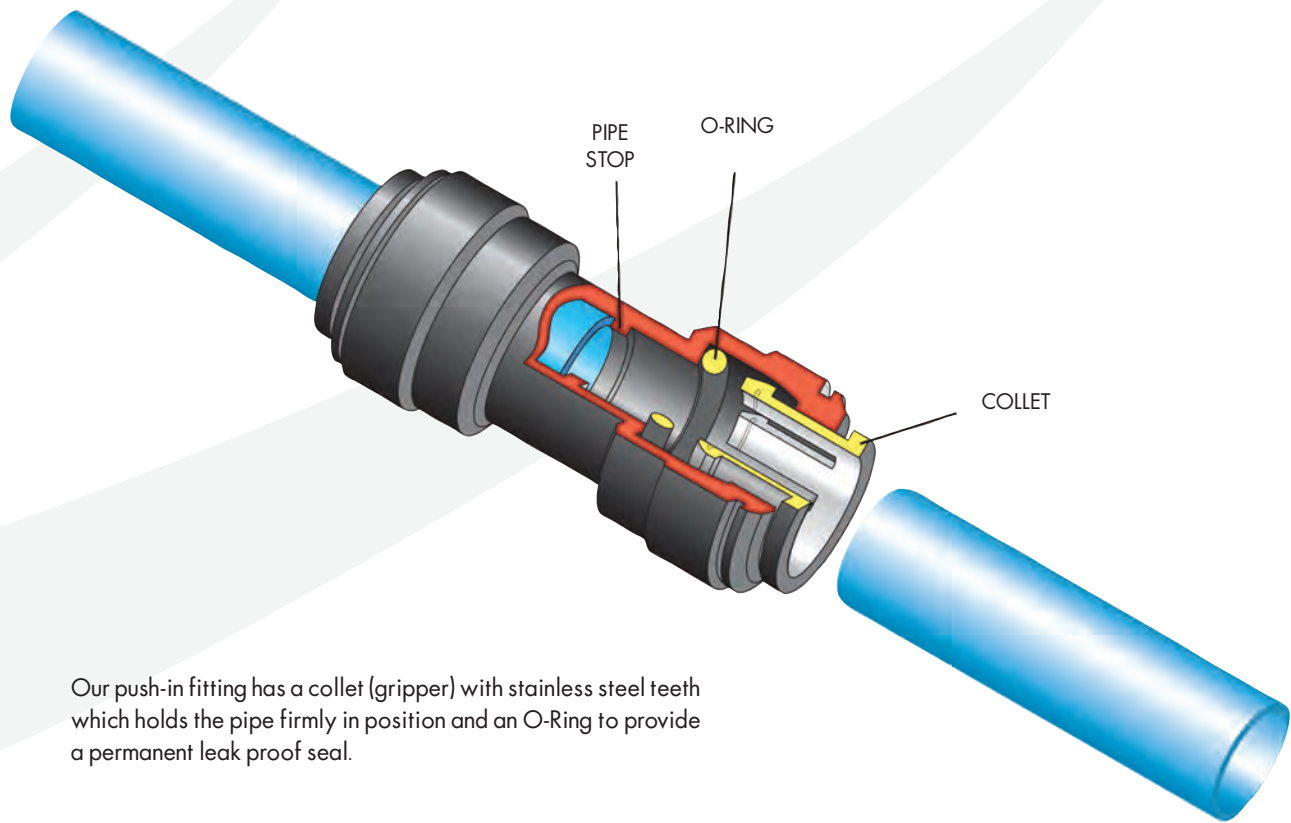
Turn the screw cap approx 1/4 turn to lock the pipe in position.

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.



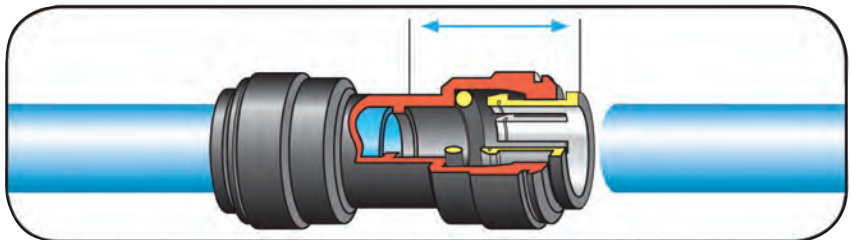
Easy to Make a Connection



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.



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



SIZE	STOP DISTANCES
15 mm	30 mm
22 mm	35 mm
28 mm	44 mm

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 to pipe stop.



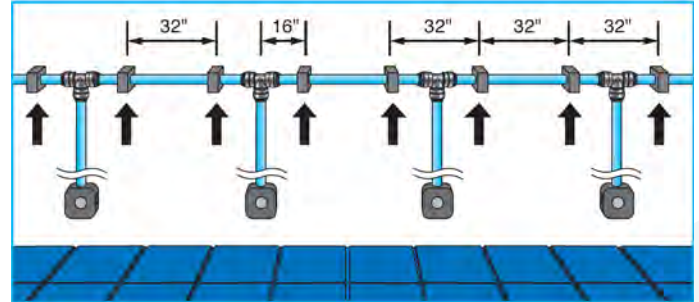
Pull to check secure. Test the system as specified in "Installation test procedure" before using the system.



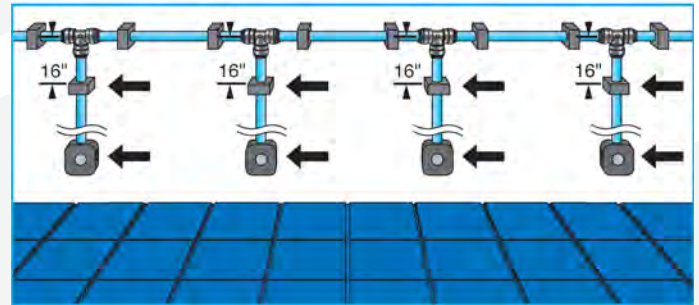
To disconnect, ensure the system is depressurized. Push the collet towards the fitting and remove the pipe. The fitting can be reused.

Recommended Install

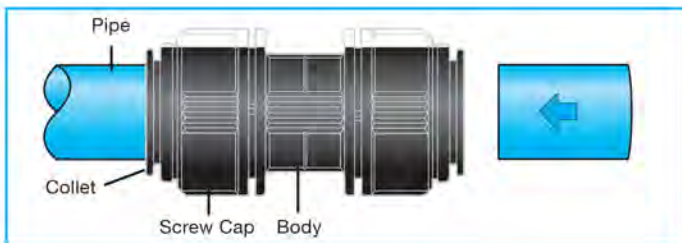
When installing a compressed air system, it is advisable to first attach only the horizontal pipe clips and only attach the clips to the vertical pipes after a small amount of pressure has been applied to the system. This will ensure that the vertical pipes have positioned themselves correctly before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



Phase 1: System without pressure



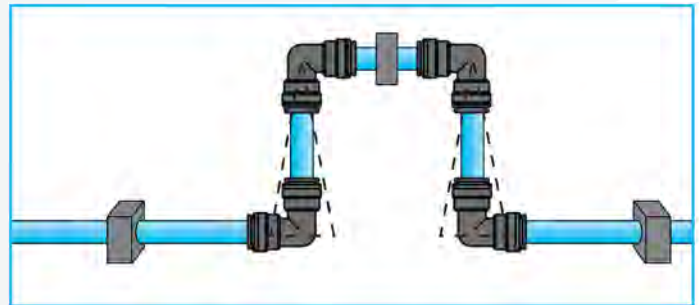
28mm fittings



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.



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

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 17.5 psi (1.2 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

1. Check that all compression and push-in connections have been properly completed and are fully engaged.
2. Insure that all wall mounting and hanging brackets are fixed securely.
3. Insure 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.
4. Insure 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 17.5psig.
5. 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.

6. Slowly open the main isolation valve while viewing the main pressure gauge in the pipework.
7. Allow the pressure in the system to increase to 1 BAR (14.5psig).
CLOSE VALVE! Hold for 15 minutes.
8. 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 (17.5 psig). When using Eco-Line with other piping systems, do not exceed the maximum working pressure of the Eco-Line system, 12 BAR (17.5 psig.)
9. When full working pressure is achieved, hold the system pressure for duration of one hour.
10. Re-inspect the system for integrity, loose or slipping joints and leakage.
11. 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



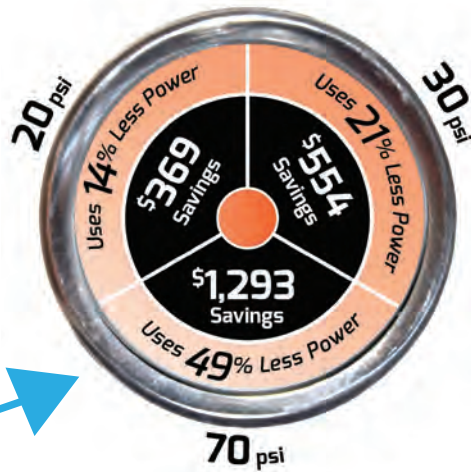
Powermizer 10/7 Equation

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.

Savings with Powermizer



Part Number	Connection Size, Female	Max Flow	Max Inlet Pressure	Control Range	Max Operating Temp	Sensitivity	Repeatability
PMZR-75	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	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	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 Valves

Outstanding value, high quality drain valves

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	90900-04
1/2 " NPT including strainer	90900-08

Zero Loss Drain Valves

Outstanding value, high quality drain valves

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	ZLD-200
500 CFM	ZLD-500



www.SynergAir.net

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