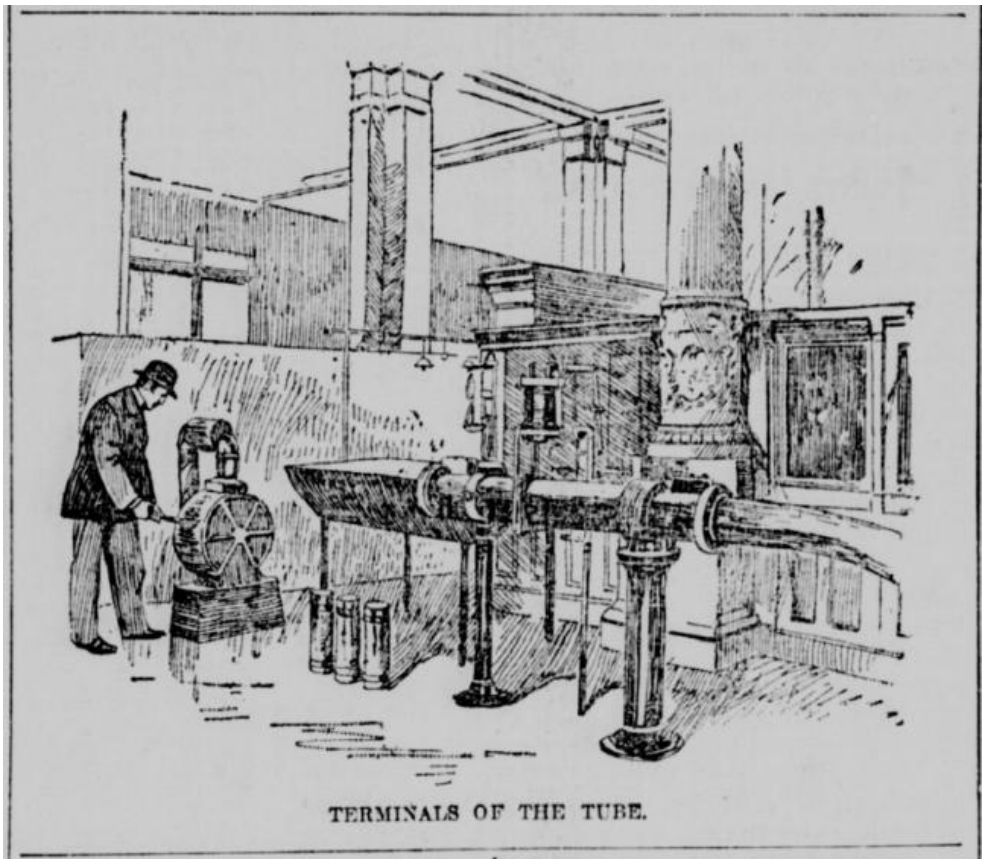
aerocom (UK) Ltd
pneumatic tube systems

PNEUMATIC TUBE SYSTEMS FOR INDUSTRY & MANUFACTURING


TERMINALS OF THE TUBE.

In the 19th century during the industrial revolution the first designs for conveyance systems were developed to cover the great distances which small or precious components required repetitive manual transportation from a secure storage area to the delivery point. This concept was especially relevant for the post offices and many distribution depots across the world had extensive underground pneumatic tube delivery services crossing entire cites such as London, Paris, New York, and Berlin.

It soon became apparent that rails and tracks congested the factory floor and if raised the climbing and decent could throw the package off the rails, Pneumatic Tube Systems with contained capsules, solved these issues, with tubes routed at high level the air propelled systems soon gained worldwide popularity. Many early pneumatic tube systems are still used in industry to this day.

In today's modern production lines robotic automation may well have covered much of the ground formerly tread in the manufacturing process, but there are still many hours wasted by humans simply walking back and forward over any distance to deliver or collect small articles or paperwork.

PNEUMATIC TUBE SYSTEMS FOR INDUSTRY & MANUFACTURING

Industrial Applications

aerocom pneumatic systems are enhancing the operational efficiency for everything from steel mills to automotive manufacturing. Aerocom UK can move almost anything from parts to paperwork. If your operation has redundant tasks involving routine foot traffic, odds are Aerocom has a system that will save you time and provide quick return on investment. More importantly, it will also improve your overall operational and manufacturing processes.

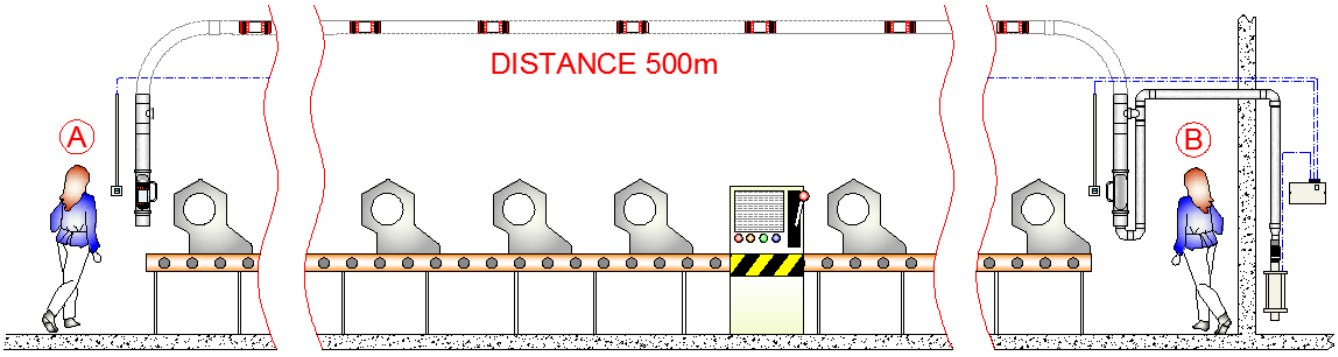
Versatility is the key! A single system can be used to quickly carry work orders from the production office to the plant floor. Once production begins, the system can expedite product samples to Quality Assurance labs for testing. Small parts and raw materials can be moved to and from various assembly areas. And finally, the completed work orders can be on their way to the administrative offices for processing. It's all so simple and it all runs on fresh air.....

A single aerocom tube system can streamline an entire process; from order entry to invoicing.

The profitability of a pneumatic tube system can be pre-calculated as follows:

$$\frac{(R \times T)}{60}$$

Where;
R = Route (how often)
T = Time spent on-route in minutes
60 = Conversion factor from minutes to hours



Example: If a person must walk 500m from A to B 50 times a day, at a walking speed of 5km/h, we can calculate the cost if the wage to employ somebody to make this repetitive journey is £25 p/h.

R=50 **T=12m** (there & back)

$$\frac{(50 \times 12)}{60} = 10$$

10 hours per day =	**£250**
5 working days per week =	**£1,250**
250 working days per year =	**£62,500**

The installation cost of a pneumatic tube point to point system would justify the investment within a few short weeks. Running costs are minimal in comparison

PNEUMATIC TUBE SYSTEMS FOR INDUSTRY & MANUFACTURING

Pneumatic Tube System Types

With the most flexible product line in the industry, ***aerocom*** engineers can customise a system to meet nearly any requirement.

- Choose the economical SK2 or AC2U point-to-point systems when the need is to connect only two or three stations.
- The AC50 is the economical choice for connecting 3 stations up to 10 stations. It allows any station on the system to send and receive to any other station on the system.
- The AC24M is the perfect choice when the need is to transport items from multiple sub-stations to a central location such as a Quality Control Lab.
- The AC3000 system offers enhanced operating features when the need is for a greater number than 10 stations or when automatic dispatching and receiving of carriers is a factor.

Whatever the need, Aerocom has the answer.

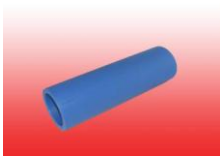
Tube & Diameters

Size and weight are rarely a problem. ***aerocom*** systems come in a range of diameters with the most common being 63mm ~ 110mm ~ 160mm with 200mm and even 315mm available if required.

aerocom have a vast range of pneumatic tube system solutions, from simple two station point to point systems, to computer controlled systems capable of running multiple zone groups of stations simultaneously allowing interchange between zones.

All pneumatic systems are available is a choice of tube diameters ranging from Ø50mm to Ø315mm. The first consideration for any system is what size, amount and weight of content needs to be transported. This will then establish the type of carrier required which then dictates the tube diameter and bend radius requirement, and also the assists in calculating the blower power capacity and required transportation velocity.

Standard pneumatic transport tube is supplied in grey UPVC with long radius bends jointed with solvent welded butted sleeves.



Underground tube can be supplied in PEHD and fusion welded.

Stainless steel tube is also available for specialised applications.
Other tube colours (black, white, clear Perspex) are available on request

Carriers

There are a vast range of carriers availble to suit the package requirments of the many applications of pneumatic tube capsulated transportaion.

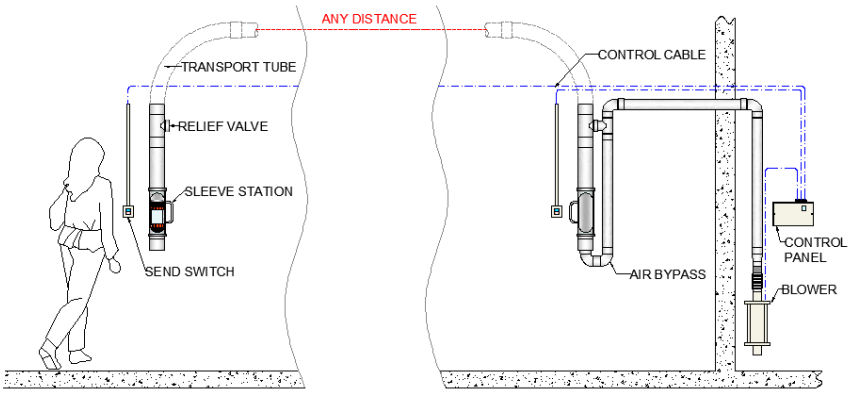
Most system are PVC as are the carriers but metal is available if required for hot substace transportation.

We also have completley leak resisitant models available in Ø110 /160mm

The carriers come in a variety of standard colours, with combinations of two colours availble on request.

Point to Point Systems

SK2 The Basic Slide Sleeve Point to Point System



Specifically designed for the customers who need a competitively priced, simple and reliable 2 way pneumatic tube system.
The SK2 is the logical way to eliminate the need for staff to make repetitive errands or deliveries of samples, components, small items, cash or documents.

Once installed the system will quickly repay the investment in saved time and motion. We guarantee the SK2 to be reliable and low maintenance.

The SK2 is a bidirectional system which can send and receive carriers from both sleeve type stations. The carrier moves at approximately 5 to 6m/s and can cover a distance of up to 200 meters using only a single phase (220/240vac) domestic power supply. Blowers can be double for longer distances.

ac2u With More Station Options

Another choice available for connecting two or three stations, a wider variety of station models is available due to the programmable controller supplied with this system. **ac2u** is the ideal solution for point-to-point applications using optical sensor switches and arrival signals.

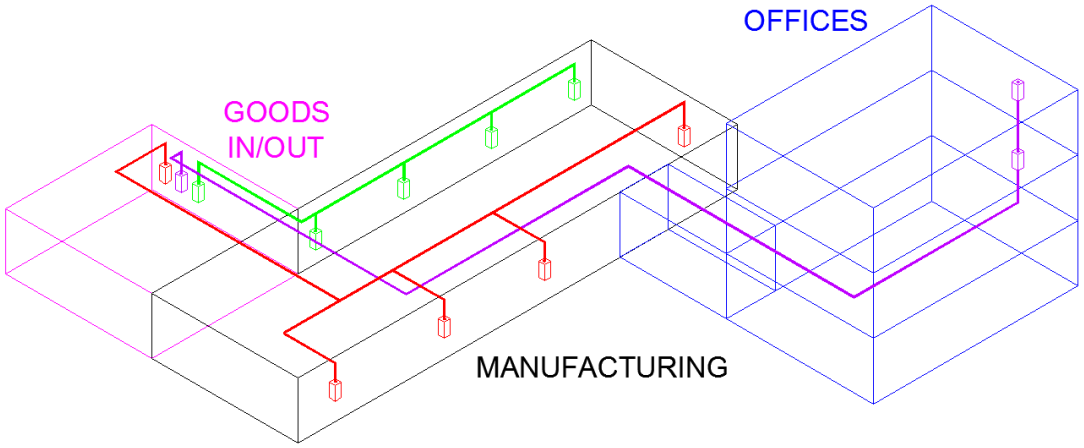
This slightly more flexible system can be expanded to **3 stations** with the addition of a diverter unit.

Multiple Stations and Zones

For larger coverage the ***ac3000*** system has the capacity to control multiple zones allowing each separate zone to work independently, with the added capability of interchanging between up to 64 zones with 254 stations.

ac3000 is fully automatic with user preferences controlled by a Microsoft Windows operating system. Standard features are developed solutions for the strict controls required by hospital users worldwide, the software package has dedicated control panels, diagnostics, animated graphics, tracking software and a whole host of other functions. This system allows full carrier traceability using transponders embedded in the carries and antennae on both the send and receive position of the stations. Although developed for hospitals, this system is fully adaptable to any environment.

If you necessitate traceability and performance indication then ***ac3000*** is the perfect choice.



Consider the example above; it shows a manufacturing unit, a goods area and an office block. What needs to be established when designing a multi zone layout? It wants to be well thought-out;

- **What are the major demand destinations?** i.e. the factory floor will need to connect to the stores in the goods area to demand materials, the store needs to connect to the office block;
- **What is the estimated KPI of each factory process?** Distance is time for a pneumatic tube system so careful consideration must be given to how many times per hour each factory floor station will be demanding materials from the stores, what also needs considered is every demand will instigate a return on the same tube route. Are more zones required?
- **Does every station need to interconnect?** Let us assume in this example that manufacturing will only send and return to Goods, Goods will need to forward stock request slips and delivery notes to procurement on one floor of the office block and sales on another. Two separate zones will allow traffic in the factory to flow unaffected by demand whilst the longer distance documentation to the office block uses the third zone, all of which run simultaneously.
- **If the entire system needs to be interconnected** a transfer interchange zone can be added in a central location. This would allow interchange in and out of all three zones which can store carriers in the transfer tubes whilst the zone is working then pick the carrier up when it has a slot, in the example above a transfer would allow 9 carriers to be in the system at any time.

Our Expert Design Team Can Help & Advise on System Requirements

Stations

aerocom offer a full range of pneumatic tube stations to suit every clients requirments, from simple a sleeve station for the factory floor, to ergenomocally designed enclosed stations for the Office.

Sleeve Station

Multi Load Station

OES Compact Station

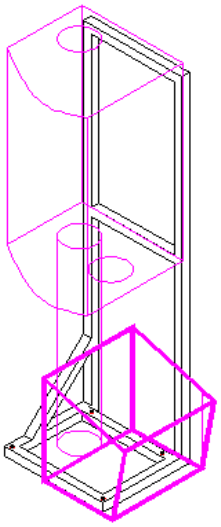
Titan Station

EWS Station

aerocom can supply our stations with a whole range of accessories from receiving baskets to designer cabinets.

Cabinets are supplied with a choice of security accessories including, key locks, digital locks or swipe card access.

Free standing units are supplied with supporting frames. other accessories include arrival alarms and carrier racks



Blowers

Any type pneumatic tube system is complexly dependant on air supply, Blowers come in two basic categories; the basic point to point system uses a Bi-Directional **WSVR Cylinder Blower** and a domestic 220VAC power supply, a 110VAC version is also available. For longer distances and multiple stations a **SD Side Channel Reversing Blower** is used. The SD models come in a range of sizes and output volumes, the larger versions are only available only in 3phase power supply, the SD4 can be used for longer point to point system and is available in 220VAC power supply, and 110VAC. The choice of blowers will be advised by our experts for each system.

aerocom "your partner for delivering solutions"

An impressive list of satisfied clients will give testimonials to the fact aerocom (UK) Ltd have helped solve their logistical challenges.

These logistical challenges have been met in Industries such as;

- Aerospace Production Lines
- Vehicle Production Lines
- Oil Production Plants
- Steel Manufacture
- Diamond Processing
- Food Processing
- Breweries
- Agricultural Institutes
- Distribution Centres
- and many more....

If your industry or application is not listed, Aerocom's team of trained consultants is available to discuss your needs and tailor a system for you.

Aerocom's experience and extensive product line afford us the ability to customise any system to meet your local requirement.

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We look forward to hearing from you!

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Work Out Your Own Amortisation Calculations:

$$\frac{(R \times T)}{60}$$

Where;
R = Route (how often)
T = Time spent on-route in minutes
60 = Conversion factor from minutes to hours

Process	R	T	Hours per day	Hours per week	Hours per year	Hourly Rate	Annual Cost
						£	£
						£	£
						£	£
						£	£
						£	£
						£	£
						£	£
						£	£

Notes: