

Combining safety with responsibility:

A practical example

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solutions

**Straub pipe couplings on the external
pneumatic post system at Lonza in Visp**

**Quick, safe and reliable
installation**

At the Lonza chemical and biotechnology plant in Visp, the existing external pneumatic post system is central to the production and quality assurance processes. Weather-related ageing made it necessary to renew the original pipe couplings. The replacements are specially modified STRAUB-REP 1L pipe couplings, ensuring reliable connection and continuous availability of the pneumatic post system.



An external pneumatic post system links the production plant and central laboratories of Lonza AG in Visp.

The challenge:

■ The more than 4-kilometre-long pneumatic post network of Lonza AG in Visp could certainly be described as the main artery in the company's production and quality assurance process. It is used primarily to send chemical samples to the various laboratories distributed around the huge complex. Production is allowed to go ahead in the relevant plant only when the particular production batch has been passed fit by the laboratory. Every month, around 10,000 samples are moved around by the pneumatic post system. Failure of the system would therefore have a huge impact on production, bringing with it a high cost burden.

The pneumatic post system runs in the open on the production site and as such is exposed to all weather conditions. The temperature-related expansion and contraction of the pipes subjected the originally installed

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pipe couplings to enormous stresses, impairing the reliability of the overall system at an ever increasing rate. Prior to the refurbishment work, the pipes were essentially joined by duct tape wrapped around the joints and secured with a pipe clip. Whenever temperature changes caused the pipes to expand or contract, the gaps at the joints widened or narrowed. These constant movements led to overstretching of the adhesive tape which, over time, crept inside through the gap, reducing the effective bore of the tubes. At these points, the capsules were slowed down or even completely stopped.

After only a few years, the first signs of corrosion were visible, and leaks impaired the reliability of the installation. Operation could therefore not be secured in the long term. What was needed was a solution offering a high degree of reliability over many years.

Solution:

Free passage throughout the system

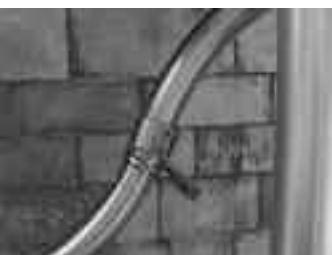
By using specially modified STRAUB-REP 1L 104 mm VZ-HD-PE-80/hard polyethylene pipe couplings, the required availability of the system has now been reinstated. One of the normal benefits of STRAUB pipe couplings is that they permit inaccuracies in alignment of the pipes, thereby simplifying installation. However, accurate axial alignment of the pipes is the key criterion of fault-free operation of the pneumatic post system. For this reason, the couplings were fitted with special HD-PE (high-density polyethylene) inserts. These ensure the required seal tightness, while the hardness of the insert material prevents any axial misalignment of the pipes. Integral earthing conductors ensure that all

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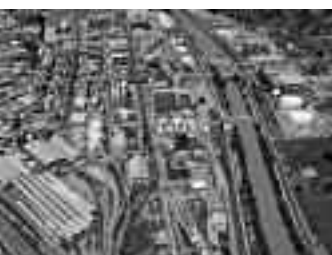
The couplings can be opened wide enough to allow them to be pushed radially over the joint ends of the pipes being connected.



Precise axial alignment of the pipes is important for smooth operation. A special HD-PE insert in the pipe couplings ensures a tight seal of the connection, while simultaneously preventing any axial misalignment.



Align pipe, push pipe coupling over the joint, tighten clamping screws: The joint is immediately operational.



The Lonza production complex in Visp.

zones of the pneumatic post system are earthed, so that there is no need for specific discharge gaps.

Installation without disruption of operations

Around 1,000 new pipe couplings were required to refurbish the installation. The simple installation of the couplings allowed one fitter,

working alone, to replace the pipe couplings – even in exposed places – easily and without interrupting operations. Since the pipe ends did not need to be machined, no fire or explosion protection measures were required. When air escaped as the old pipe coupling was removed, the fitter simply had to wait until an approaching capsule passed the location of the joint, when he was able to continue with his installation. Replacement of each coupling took only a few minutes. Following removal of the old pipe clip, all that was needed was to ensure precise pipe alignment, swing open the new coupling, push it radially over the joint and tighten it.

The PC-controlled pneumatic post capsules are moved by pressure differentials of just a few millibars. The system comprises two lines with separate air compressors and a “pneumatic post station” connecting the two lines. 27 stations are reached via 22 switches.

Lonza – a multinational corporation

The multinational chemical and biotechnology corporation, Lonza Group AG, supplies – and is in some cases the exclusive producer of – active agents, organic chemicals and intermediate products to the chemicals,

pharmaceuticals, agro and food industries. Amongst its many products, Lonza produces Vitamin B3 (niacin), an ingredient of Ovaltine. Other Lonza products can be found in medicines and agro-products. Employing around 2,700 people, Lonza AG Visp is the largest employer in the region and is of enormous economic importance.

«Using our modified STRAUB-REP 1L, we were able to refurbish the pneumatic post system without interrupting operations, and to secure operation of the system for many years to come.»

Remo De Toffol, Project Manager,
Straub Werke AG



Expertise to meet unusual challenges

The simple, quick installation of the STRAUB pipe couplings allowed the refurbishment work to be completed within an extremely short time. The couplings now form a tightly sealed, durable connection. Temperature-related movement is absorbed within the coupling without altering the axial alignment of the pipes. Straub was involved in the evaluation process from the outset, and so was able to contribute its experience and expertise in product engineering to the modification of the pipe coupling.

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Project: Refurbishment of pipe couplings in the pneumatic post system of the chemical and biotechnology company, Lonza, in Visp.

Task: Refurbishment of pipe couplings in the pneumatic post system without disruption of operations, maintaining continuous availability of the pneumatic post system.

Solution: In a pneumatic post system, axial alignment of the pipes is essential. For this reason, Straub produced a specially modified STRAUB-REP 1L 104 mm VZ-HD-PE-80/hard polyethylene pipe coupling, which offers a reliable seal, while being hard enough to prevent axial misalignment.

Advantages: Fast, uninterrupted installation by a single fitter on site. Continuous availability of the pneumatic post system while work was being carried out. No protective measures required against fire or explosion risks.

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