

# Vakuumpumper og systemer

Busch Vakuumteknikk AS, Hestehagen 2 1440 Drøbak



## Information concerning the vacuum system for the food industry.

Food businesses that need pneumatic transport of by-products in connection with the slaughterhouse, Busch Norway can design and install such systems based on vacuum operation.

When it should be planned for, and projected such a vacuum system is the operating conditions for such a plant that determines the design and technical needs. The priority objective is good operating conditions in the plant, leading to minimal downtime in production and a vacuum system that is appropriate with regard to today's hygiene requirements. It is also a request to implement CIP cleaning procedures in connection with the vacuum system and that the technical design is a result that requires less maintenance requirements and lower costs.

By analyzing the relevant parameters in pipelines and cyclone as air speed and size in relation to the transport task to be done, it is possible to project the good operating conditions in the vacuum system.

Busch Norway has developed a new filtration system at the forefront of vacuum pumps that forces continuous operation of the vacuum system even at the maintenance / cleaning of the filter. The solution consists of 2 parallel filter cyclones that are located between the major cyclone and vacuum pumps. The filter cyclone has an integrated stainless filter element that captures any organic residues as described by the flow of air into the vacuum pumps. Differential pressure across the filter element is measured continuously. When the pressure value reaches a maximum, the airflow switch over to the other filter cyclone. The 'dirty' cyclone filter is regenerated by using the CIP - cleaning procedure where washing and flushing function is applied from the clean side of the filter to the "dirty".

If there should be no need for this filter solution, we recommend a washable polyester filter with stainless end caps that are installed directly ahead of the vacuum pumps.

Generally, we recommend to control the frequency of the vacuum pumps in a vacuum central because this allows for greater flexibility with regard to changing capacity needs in production.

We also recommend a common control unit for all vacuum pumps that are part of a vacuum central in which the use of vacuum pumps switch.

In order to be accurate according to the pipelines dimensions in the current vacuum centrals, we have developed calculation tools that give us important information about the air speed in pipelines and in the cyclone. We consider the conditions in the vacuum system as an interaction between air velocities in the different areas, the medium to be transported, the dimensions of the pipelines, in the cyclone and requirements for vacuum capacity. By knowing the values of these parameters we can optimize the operation in terms of reliability, energy efficiency and maintenance.

We prepare P & ID - forms and give you alternatives of control functions for the vacuum central. We have supplied complete vacuum systems including assembling pipes and commissioning of the vacuum system to various industries and can offer suggestions for service on vacuum pumps.

We will be happy to arrange for a meeting to give you further information regarding the 'vacuum central'.

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