

# VARIETY OF STATION FORMS

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There are different types of stations. Some can only transmit or receive, some can do both. But this is not the only essential difference of different stations. Another big difference is the input of the transport container into the station. Some stations are loaded from the front, some from the bottom, and some from the top. All three station types have different advantages and disadvantages, which are presented below.

- XXX
- XXX
- XXX

## Evaluation categories

**Ergonomics:** How easy is it to load the pneumatic tube station.

**Operating errors:** How high is the risk that the user of the pneumatic tube station loads the pneumatic tube station incorrectly or does not use a pneumatic tube container, but puts the item into the station as it is. How high is the risk that the pneumatic tube station and, in the worst case, even the entire pneumatic tube system will fail and have to be repaired at great expense.

**Safety:** To what extent is there a risk that a person will injure himself while using the pneumatic tube station.

**Air exchange:** This refers to the air exchange that takes place when a transport container departs or arrives. The area of use of the pneumatic tube station is important here. The air is taken from the room and distributed in the building when the container leaves. When a container arrives, the air is blown out of the system into the room. The air can be warm, cold, dry, humid, contaminated or similar. Therefore, in the medical field, especially in intensive care units or in the operating room, pneumatic tube stations are recommended, in which there is no exchange of conveying and room air.

## Front-Loading-Stations

Ergonomics	Operating Errors	Safety	Air exchange
<p>Ergonomic loading, as the user of the station does not have to bend or stretch.</p>	<p>When loading the front-loading station, there is only a small risk of operating errors. The base plate of the station is provided with a hole. However, pneumatic tube containers do not fall through a rim. Smaller items cannot be inserted into the station this way, as they would fall through to the bottom. Items that are too large cannot be inserted either, as the opening of the station limits the size of the items.</p> <p>The pneumatic tube station can only be loaded with a pneumatic tube container at one time. Due to the opening and construction of the station, the user can always see if the station is already occupied.</p>	<p>A possible hazard is the rotating drum of the station. This is rotated by means of a motor. During the rotation process, the user's hand may be inside the drum. However, injuries such as crushing cannot occur, as the motor has an electronic control to limit the force. In the event of a corresponding resistance, the motor reverses the direction of rotation, so the drum opens again.</p>	<p>There is no air exchange during the departure or arrival of a pneumatic tube container. This is particularly useful for the medical environment and hygienic environments.</p>

## Bottom-Loading-Stations

Ergonomics	Operating Errors	Safety	Air exchange
<p>When filling a bottom-loading station, the user must bend down minimally.</p>	<p>The bottom-loading station can only be filled with pneumatic tube containers. Other objects cannot leave the station.</p> <p>The bottom-loading station cannot be loaded with containers that are too heavy.</p> <p>In the case of bottom-loading stations, the user can also see whether the station is already loaded.</p>	<p>With the Bottom-Loading Station 422, the transmitter memory/transmitter ear moves. The user may be injured in the process.</p>	<p>In all bottom-loading stations, there is always an exchange of air. When a container departs, air is extracted from the room. When a container arrives, the air is blown into the room or into the suspended ceiling</p>

## Top-Loading-Stations

Ergonomics	Operating Errors	Safety	Air exchange
<p>The user of the top loading station must stretch to load the heavy container. Users with a small body height run the risk of not being able to send the shipments on their own, as they have to ask a colleague for help. If there is no colleague nearby, the user must help themselves in some other way, such as with a ladder. Loading a 110mm diameter system is somewhat easier, as the container can be held with one hand. On the other hand, loading a 160mm station is more difficult, since the container usually has to be held with two hands and the user can stretch less far.</p>	<p>A top-loading station can be loaded with several containers at the same time. This blocks the station and causes complications. In addition, a top-loading station can be loaded not only with pneumatic tube containers, but also with any other objects. Due to the construction of the station, the user cannot see what is in the station. Therefore, foreign objects remain undetected. This leads to complications and system failures, and in the worst case even to damage to the station and the entire pneumatic tube system.</p>	<p>Loading from above means that the user can injure himself during loading. However, it is almost impossible for a hand to be inserted into the station and thus cause bruising or similar injuries, as no mechanical parts are accessible.</p>	<p>With the Top-Loading Station, there is almost no exchange of air when a container leaves and arrives.</p>