

## Bottom Drop Tunnel

Dohmeyer's in-line cryogenic freezing Tunnels are commonly used to freeze all kinds of foods ranging from small diced products to larger whole muscle meat or packaged products.

The Dohmeyer Bottom Drop Tunnel are easily adapted for every kind of inline freezing

When the ceiling height in the production facility is limited, Dohmeyer provides a Bottom Drop Tunnel that is opened by lowering the bottom

section of the tunnel using pneumatic bellows while the top part of the freezer stays in place. This type of tunnel provides easy access for

cleaning and maintenance with an opening clearance of ca. 350 mm.

Every Dohmeyer Tunnel is equipped with either liquid nitrogen or liquid carbon dioxide (CO<sub>2</sub>) injection, depending upon the product and process requirements. The freezing action happens right inside the tunnel where the cryogenic gases are injected into an insulated cold zone as the food product passes through it.





Liquid nitrogen and CO<sub>2</sub> deliver the ultimate in cryogenic freezing power by minimizing any aroma, flavor and dehydration losses to the food product. Because these cryogenic gases are inert, they also provide a protective atmosphere inside the freezing zone which prevents any oxidation of the food. As a result, the quality attributes of cryogenically-frozen food products are far superior to those same products frozen in a mechanical system.

The power of cryogenics is also due to the extremely low operating temperatures of the freezing equipment which freezes the food products much faster than with traditional methods. Dohmeyer Tunnels are designed to operate at temperatures as low as -65°C for liquid CO<sub>2</sub> injection or -120°C for liquid nitrogen injection. At these low temperatures, the food product is preserved under the best

possible frozen conditions to ensure that microbial activity is reduced to a minimum.

Dohmeyer can recommend the best cryogen and injection set-up for various types of food products or processing constraints. There are two injection set-ups to choose from depending upon the temperature profile that is needed to freeze the food product: Isothermal or Counter-Current. Isothermal tunnels provide a uniform operating temperature throughout the cold zone while counter-current tunnels create a temperature gradient inside the tunnel by guiding the cold gases in the opposite direction to the product flow.



In addition, Dohmeyer is able to provide specially-designed fan blades, based on its ongoing research efforts, for different convection set-ups in order to increase the freezing rate of many types of food products while optimizing the operational efficiency of the cryogenic gases.

Dohmeyer builds every one of its cryogenic Tunnels in compliance with CE Directive 2006/42/CE, EN 1935/2004 and to the latest standards in food equipment hygiene design. Any components that are in direct contact with the food product are made using AISI 316 stainless steel in order to eliminate any food safety hazard. All other components and the main freezer structure are constructed with AISI 304 fully welded stainless steel materials or, as an option, AISI 316. Dohmeyer uses the best materials of construction to ensure the life-long durability of the equipment with easier, faster cleaning operations and minimal requirements for on-going maintenance.

All Dohmeyer Tunnels are equipped with a standard, operator-friendly HMI touch screen and Siemens PLC software with recipe storage capabilities to ensure a consistent freezing result every time.



**There is a Bottom Drop Tunnel model for every budget and processing need:**

Usable Belt Width		28"	38"	50"	60"
Overall Tunnel Width (mm)		1570	1822	2130	2383
Name	Freezing Length	Belt Freezing Surface (m <sup>2</sup> )			
DOH-TUN-5200	4000	2,84	3,86	5,08	6,10
DOH-TUN-6200	5000	3,56	4,83	6,35	7,62
DOH-TUN-8200	7000	4,98	6,76	8,89	10,67
DOH-TUN-9200	8000	5,68	7,72	10,16	12,19
DOH-TUN-10200	9000	6,40	8,69	11,43	13,72
DOH-TUN-11200	10000	7,11	9,65	12,70	15,24
DOH-TUN-13200	12000	8,53	11,58	15,24	18,29
DOH-TUN-14200	13000	9,25	12,55	16,51	19,81
DOH-TUN-16200	15000	10,67	14,48	19,05	22,86
DOH-TUN-17200	16000	11,38	15,44	20,32	24,38
DOH-TUN-18200	17000	12,09	16,41	21,59	25,91
DOH-TUN-21200	20000	14,22	19,30	25,40	30,48