THE LINDE GROUP

PRESUS® C Series Pumps. Efficient and effective pressure boosters for Liquid Carbon Dioxide.

Liquid CO_2 bulk tank (background) with PRESUS C Pump (foreground)

Many industrial applications require high-mass-flow liquid carbon dioxide (LCO2) at a constant high pressure. Customers who have operations of two or more shifts demand extremely reliable systems. Inadequate supply systems may cause bubbles in LCO2, leading to poor product quality or failures in subsequent processes. The PRESUS C systems supply bubble-free liquid carbon dioxide at constant controlled conditions.

Efficient operation

The PRESUS C pump compressors are pneumatically driven which means they are controlled by the downstream process. The pistons move upon decreasing pressure, and stand still if no liquid is consumed. This minimizes energy requirements and extends the service life of the equipment. The pneumatic drive provides a high level of efficiency, especially for users with intermittent operations.

Standardized units

Linde's PRESUS C units are characterized by a high degree of reliability due to their parallel or dual pump design and pneumatic drive. During service or maintenance, LCO2 is supplied by a parallel unit. Switching between the units is done either manually or automatically by a PLC. This helps to provide a continuous supply and avoid an interruption of the production process. Three equipment sizes (C-8, C-10, C-50) allow for greater supply flexibility.

Operation benefits

- Provides a reliable and continuous supply of sub-cooled Liquid Carbon Dioxide at high pressures
- Automatic stop, reduces energy consumption during pauses in production
- Pneumatically driven, therefore decreasing or eliminating energy costs
- Mass flow automatically adapts to process requirements
- Flexibility due to parallel pump design

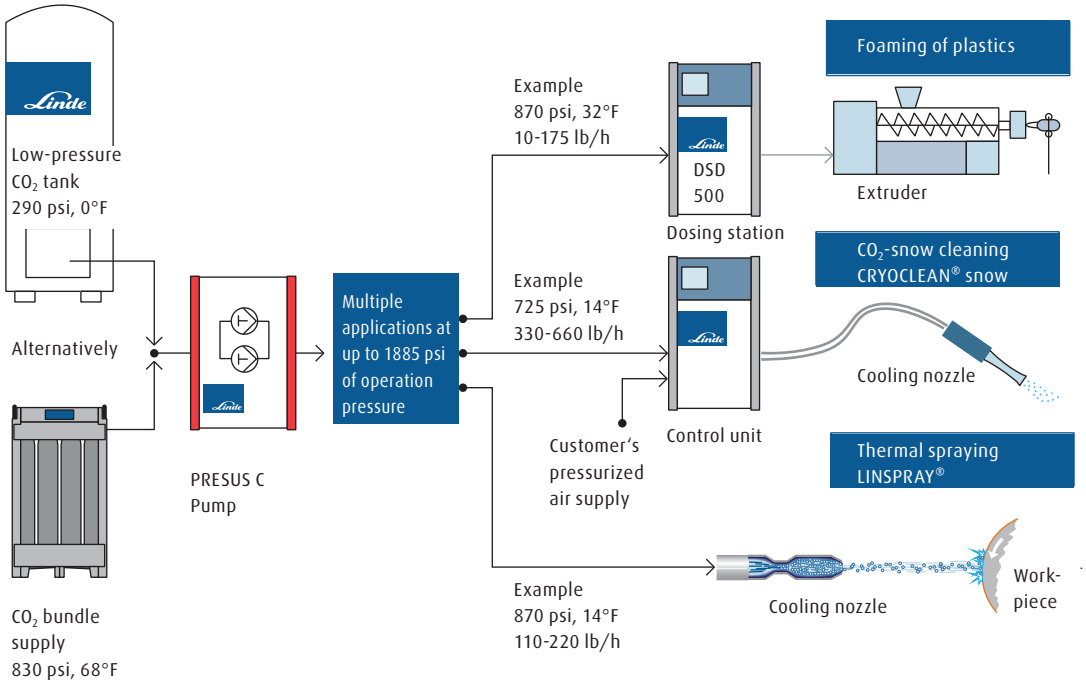
Installation benefits

- CO_2 typically sourced from a standard vacuum or foam-insulated tank
- Low noise level
- Options available for automatic switching and temperature conditioning

Available units

	Presus C-8	Presus C-10	Presus C-50
CO_2 operation pressure	Up to 1160 psi	Up to 1450 psi	Up to 1015 psi
CO_2 inlet pressure	≥ 230 psi, 290 preferred	≥ 230 psi, 290 preferred	≥ 230 psi, 290 preferred
CO_2 mass flow *	10 to 220 lb/h	10 to 220 lb/h	65 to 1100 lb/h
Average need of pressurized air *	Approx. 1.7 to 3.4 SCF per lb CO_2, 90 psi	Approx. 1.7 to 3.4 SCF per lb CO_2, 90 psi	Approx. 0.85 to 1.7 SCF per lb CO_2, 90 psi
Weight	355 lbs	455 lbs.	420 lbs.
Dimensions (W x H x D)	55" x 50" x 18"	55" x 50" x 18"	55" x 50" x 18"

(*) Guide value depending on point of operation. Quality of pressurized air according to ISO 8573.



Typical applications

- Physical foaming of plastics – bubble-free supply of LCO2 to dosing pumps, e.g. DSD 500
- Cleaning of surfaces with dry ice particles, e.g. CRYOCLEAN®snow – high LCO2 flows at very consistent pressures in intermittent operations
- Coating processes by thermal spraying process, e.g. LINSPRAY® – high reliability for optimized cooling
- Temperature control of plastic injection molds – bubble-free LCO2 supply for high-performance cooling of hot spots

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