

DSD 500 Inert Gas Metering Device.

Eco-Friendly Polymer Foaming

Introduction

The use of industrial gases – mainly carbon dioxide (CO₂) and nitrogen (N₂) – as physical blowing agents in the production of foamed plastics is increasing everyday around the world. The properties of these gases guarantee maximum compatibility with foamed plastics and the environment. They are an excellent alternative to conventional foaming agents because of their low consumption and high economic efficiency.

The DSD 500 from Linde meters flow rates extremely accurately and independent of pressure, temperature, and type of gas. A highly dynamic control valve adjusts the gas volume automatically to the pressure conditions in the extruder.



Advantages of the DSD 500

- The DSD 500 was specially designed to meter liquid CO₂; therefore, there is no need to pre-cool the liquid CO₂ before it enters the device
- Extremely accurate inert gas flow control
- Control valve reacts promptly to process fluctuations
- Automatic adjustment to the extruder pressure saves time during start-up
- Easy installation
- Suitable for liquid as well as for gaseous blowing agents
- Easy operation via operator panel and PLC
- Compact design

Advantages of Inert Gases as Blowing Agents

- Environmentally friendly
- Inexpensive
- Low gas consumption
- High foaming capacity
- Non-flammable
- Non-toxic

Functional Principle

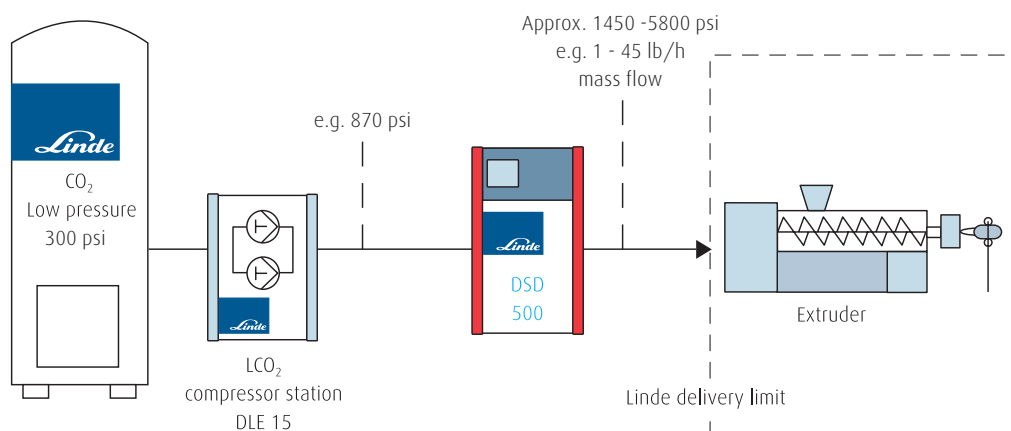
The DSD 500 inert gas metering device consists of a suitable mass-flow meter, a special 3/3-way proportional control valve and can consist of one or two high-performance compressors (contingent upon required flow rates) specially adapted for the use of CO₂. The booster is operated with compressed air and automatically pressurizes the blowing agent to the required level without user input. A special flow regulation (patented by Linde) ensures a constant flow rate, even when there are strong pressure fluctuations in the plastic processing machine. These fluctuations are compensated immediately by the special control valve. The flow rate can be pre-selected manually or adjusted externally to the output capacity of the plastic processing machine via interface.

Application Examples

The DSD 500 ensures exact metering of inert gases to an extruder (extrusion foaming) or other plastic processing machines (e.g. polyurethane foaming) for continuous as well as discontinuous operation.

Know-how and services

- Linde offers a complete supply system at our customer's designated outdoor site; complete with gas storage, pressure building and regulation at the pad as well as our DSD 500
- Consulting



Technical data

Maximum compressor pressure		7250 psi
Maximum injection pressure		6090 psi
Flow rate	Type 1 (with one compressor)	1 - 45 lb/h liquid CO ₂
	Type 2 (with two compressors)	2-90 lb/h liquid CO ₂
Power supply		230 V, 50 Hz, 2 A
Compressed air supply		90 psi
Floor space		2 ft x 2.3 ft
Height		6.6 ft

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