

# Powder and lacquer weld seam protection systems



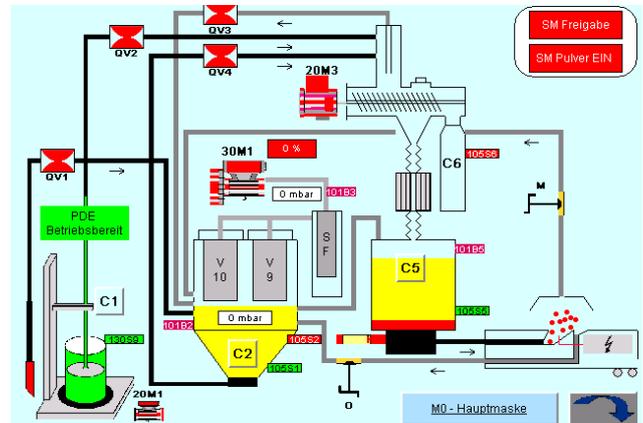
Powder has to be used to obtain an optimized and pore-free seam that withstands the flanging, necking and beading processes as well as the aggressiveness of the filled products.

Today, not only mechanical properties count; also the environmental aspects play an increasingly important role. Powder virtually eliminates solvent emissions because there is no need to exhaust volatile organic compounds (VOCs).

Key elements of our quality concept are handling and reliability. A high-performance



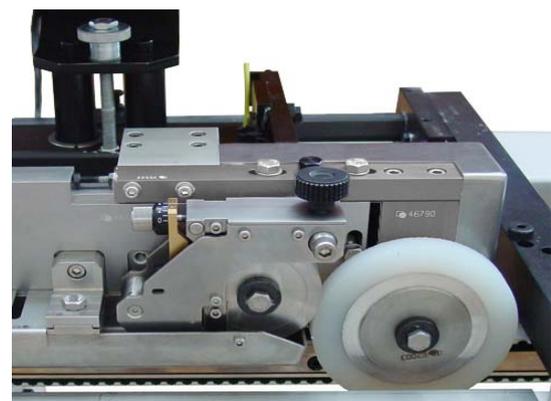
injector system for precise feed rating makes it possible for the operator to determine the required quantity of powder fast and simple.



The Frei powder systems come with a hopper on casters and a vibrator platform or a drum evacuator which provides automatic powder extraction from commercial drums. Fresh powder is conveyed dust-free into the cycle of Frei systems. The material remains clean and dry. Optionally available is a powder monitor with a laser sensor that measures the high-density coating of the powder stripe before the particles are fused in the curing system.



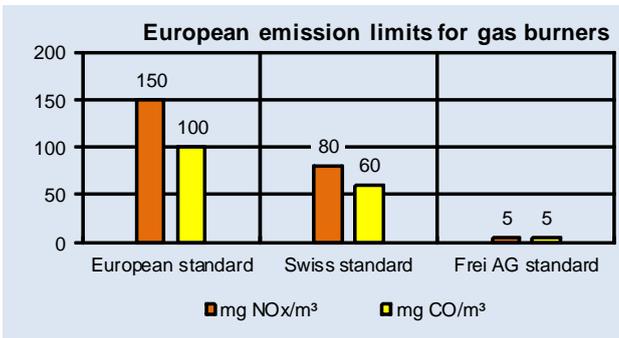
Welded outside seams are protected by wet lacquer. The Frei roller coater systems can be equipped with synthetic, rubber or steel rollers. Special steel rollers are available to apply coloured lacquer for aerosol cans.



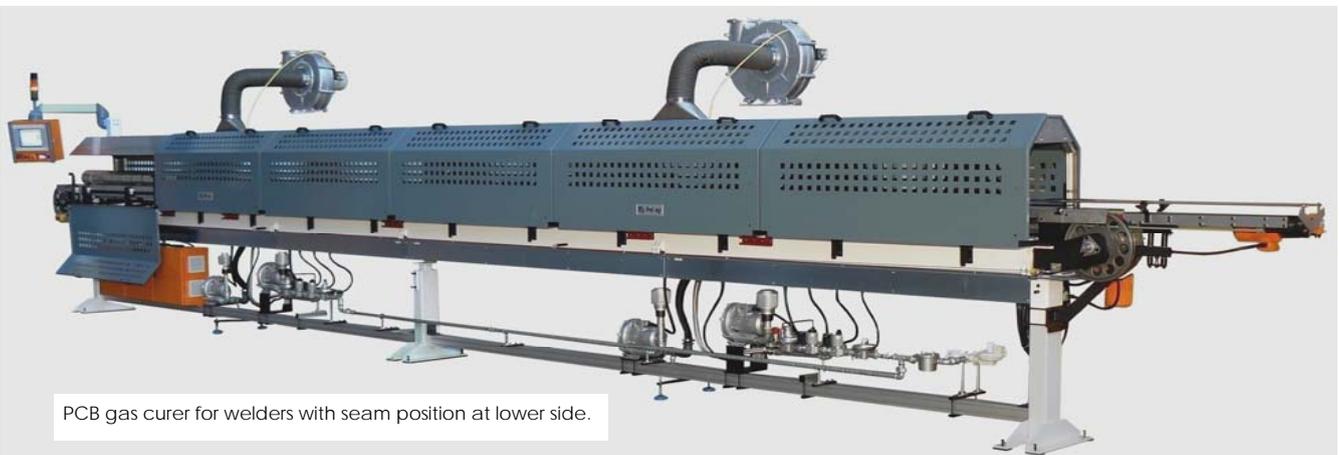
# Curing systems for powders and lacquers

State-of-the-art gas curing systems with lowest NO<sub>x</sub> and CO concentrations guarantee that the Frei curers comply with any Clean Air Legislation. The technology permits highly efficient curing and polymerization of powder and wet lacquers with cost-effective utilization of energy.

Economical solutions for a cleaner environment.



Low NO<sub>x</sub> burners in all Frei gas operated curers !

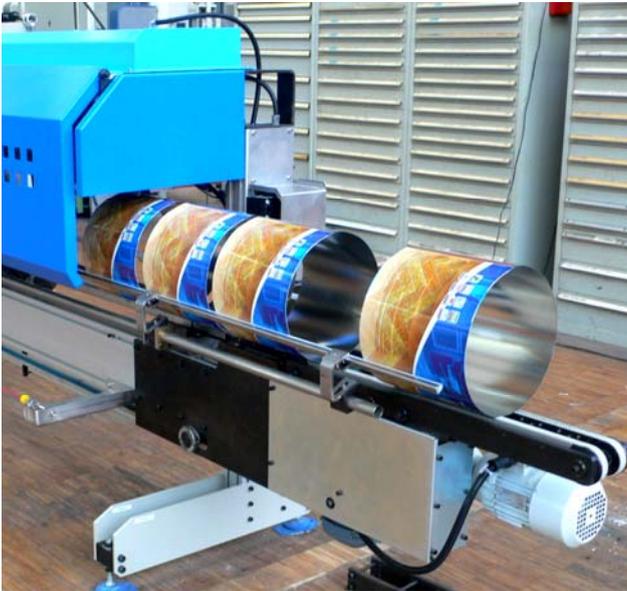


- Gas burner:
- New design for LPG and natural gas
  - Extremely powerful
  - Clean
  - Energy saving
  - Wide tin flow area

Alternatives:

- Electric-hot-air convection
- Induction





Frei AG builds premium powder coating and curing systems for a wide can size range (diameter and height). Production capacities of up to 100 m/min are no problem.



### Monobloc can debossing

Registered debossing of cans provides important product differentiation for premium brands. The process is suitable for aluminum cans and offers the possibility of debossing over almost the entire surface of the cylindrical part of the container. Debossed contours such as logos, texts or images can be regular, circular or asymmetrical.

The production capacity on two parallel horizontal debossing stations is 70 - 80 cans per minute. Proper pattern orientation is achieved by the engagement of the matching inner spreading cylinders and outer tool rolls.



### Aluminium membrane sealing

Frei AG developed an aluminium membrane sealing technique for welded cans to pack dry products such as milk powder, coffee, tea, instant soup and the like.

The technique is an alternative to the traditional composite can, the easy-open system and the conventional membrane carrier ring. The membrane with tear tab is directly sealed onto the curled flange or on a specially formed shoulder made out of the can body.



## 360° powder coating technology for cans and tubes



Rising costs for lacquers containing solvents and stricter regulations to reduce volatile organic compounds (VOCs) will cause can manufacturers to invest in new technologies.



Frei AG has developed a new system to powder coat the complete inside of aerosol monobloc cans, tubes and cartridges. The machine concept consists of a chain

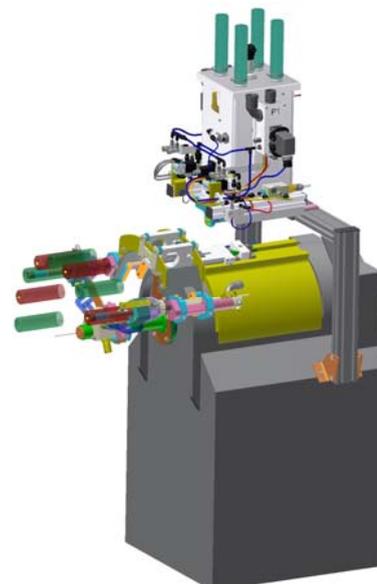


conveyor on which the rotating cans travel in horizontal position past a group of parallel powder guns. The guns move along with the cans or tubes as they reciprocate in and out

of the can bodies. In order to guarantee the industrial hygiene each coating station is provided with a dust extraction system adapted to the respective can diameter.

Frei AG is not only supplier of components of proprietary developed powder guns but offers a complete system that can be integrated in older and newer spraying machines.

A high-performance injector unit for an exact adjustment of the powder discharge allows the user to define easily the desired powder quantity and allows a very precise film weight distribution. The cans or tubes are coated in one stroke.



The system features an automatic powder drum evacuator, an air conditioned powder application unit and a filter unit. Adaptations for 2 or 4 powder guns are possible.