Innovations in Metering and Mixing Technology for LSR

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SilcoStar

The 2KM product line SilcoStar is a series of machines for the processing of LSR.
Production of mass items such as gaskets, baby dummies, shower heads, safety mats or other auxiliaries for the automotive and electrical industry.

New applications also result from the processing of new highly transparent silicones for the production of LED’s.

Medical and pharmaceutical products such as implants and molded parts containing special substances that are passed onto the human body while wearing the items.
Basic requirement to process LSR

- Liquid injection moulding machine (LIM)
- LSR metering and mixing system
- 0.5 – 3% colour
- 1:1
- Mould (140 - 200 C)
- Coldrunner

200l
20l

201
A
B

2001
A
B
Hydraulic system

- Hydraulically actuated pumps
- Hydraulically coupled
- Fixed mixing ratio 1:1
Servo- electric system

- Servo- electro actuated pumps
- Independent driven
- Variable mixing ratio
- Automatic adjustment of mixed material pressure
Automatic pressure adjustment

- Stable reproduceable metering time
- Homogenous density in the screw
- Waste reduction
- Easier operating the setting programe

Pump exit with pressure sensor

Mixer block with mixed material pressure sensor
Hybrid system

- Hydraulically actuated pumps
- Hydraulically coupled
- Fixed mixing ratio 1:1
- 2KM technology with relief valves for equal emptying
- Servo-electro drive for the hydraulic pump
- Automatic adjustment of mixed material pressure
Automatic pressure adjustment

- Stable reproduceable metering time
- Homogenous density in the screw
- Waste reduction
- Easier operating the setting program

Pump exit with pressure sensor

Mixer block with mixed material pressure sensor
Pneumatic system

- Pneumatic actuated pumps
- Independent driven
- Variable mixing ratio controlled with \( v_c \)
- Parallel metering on more than 1 Injection Moulding Machine (IMM)

Control

Shut-off valves

Volume counters

Direct Measuring
Pneumatic system

- 1 x SilcoStar PCM
- 1 x IMM
Pneumatic system

- 1 x SilcoStar PCM
- 1 x redundant supply (non-stopping)
- 1 x IMM
Pneumatic system

- 1 x SilcoStar PCM
- 1 x redundant supply (non-stopping)
- 2 x IMM parallel
SilcoStar PFM

- Servo-electric driven
- Dosing without pulsation
- Extremely precised and repeatable metering
- Modular system: useable for different feeding systems, i.e. 1l cartridge material supply instead of pails or barrels
Principle of ProcessFlowMix (PFM)
Central supply station for multiple PFM‘s
SilcoStar Mini

Pneumatic driven metering system with fixed mixing ratio

For processing the LSR out of 1 L cartridges

- Pneumatic actuated cartridge (1L) with empty signal
- Pneumatic driven plunger (metering unit)
- Accurate and pulsation free metering, also of small shot weights
- Max. shot volume of 20 cm³
- Fixed mixing ratio of 1:1
- Easy to operate with buttons / switches
SilcoStar Mini with small IMM

- Smart metering unit
- Incl. 2 x 1L cartridge (A+B)
- Incl. 1 x colour supply (0,5L)
- Incl. 1 x metering valve (small volume)
- Smart machine connection for small shot weights
Industry 4.0

ERP = Enterprise Resource Planning
MES = Manufacturing Execution System
CPP.technology

CPP.interface + CPP.reader + CPP.cloud = CPP.technology

connect + produce + provide = ready for Industry 4.0
CPP.interface

- Communication with injection moulding machine via **OPC-UA** interface
- Essential component of the industrial digitalization that can be found in the actually submitted EUROMAP 83 of the VDMA (Verband deutscher Maschinen- und Anlagenbau, i.e. the German Engineering Association)
- Provide all the production relevant data programmed into the machine
- Secure the traceability of all the steps of production
- Available from June onwards for SilcoStar 904 / 924 and SilcoStar e-Flow’s

**OPC-UA** = Open Platform Communication - Unified Architecture
CPP.reader
CPP.reader
Prevents swapping of the both components
CPP.reader

- Material type ...
- Batch No.
- Date of manufacture
- Shelf life
- ........TRACEABILITY of your products.........
CPP.cloud

- Production orders
- Inventory
- Material and capacity planing
- Production datas

2KM cloud
Smart LSR production
SilcoStar PFM  COMPETENCE IN SILICONE

When precision is key ...
SilcoStar PFM COMPETENCE IN SILICONE

Solutions for the pharmaceutical industry
For each application and requirement 2KM offers the appropriate metering units. Please discuss your “metering” tasks with us.

We have also got the right solution for you!
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- PCM Laminat
- PGM GelCoat
- PGM Laminat
- PGM Silicone
- PolyMix
- PolyTool
- ResinMix
- SilcoStar