

## Metering Technology



**DOPAG Metering and Mixing Systems  
for processing Liquid Silicone Rubber  
silcomix**



**Hilger u. Kern / Dopag Group**

# silcomix Metering and Mixing Systems

Products made of liquid silicone rubber (LSR) are versatile in use due to their specific material properties. They are naturally translucent and pigment can easily be added as required.

These products can be used in many different application areas and industries, such as

- Automotive and automotive suppliers
- Electrical and electronic
- White goods
- Aerospace
- Medical
- Sanitary engineering
- and many more

## Two different types of silcomix Metering and Mixing systems are available:

### Piston pump metering and mixing systems

- silcomix P20
- silcomix L200
- silcomix H200

This type of system is used to process all common liquid silicone rubbers with a fixed mixing ratio of 100:100.

Piston pumps are used to accurately meter and supply the material directly from their original containers. The components are kept separate until they enter the mixing block; which is where an optional pigment injection metering process would take place, if required. The proximity of the static steel mixer to the injection moulding machine ensures homogeneous mixing of the components.

The metering and mixing system is operated and controlled by means of a metering computer in combination with a touch screen. The control unit is fitted with an interface to the injection moulding system.

### Electronic metering and mixing systems

- silcomix V200

This type of system is used to process all common liquid silicone rubbers with a mixing ratio of 100:100 to 100:10. The mixing ratio is permanently monitored and controlled by use of volume counters.

Piston pumps are used to supply the two components directly from their original containers. The components are kept separate until they enter the mixing block; which is where an optional pigment injection metering process would take place, if required.

Electronic volume counters, located before the mixing block, accurately meter the two components at the selected mixing ratio into a pre-mixing chamber.

Firstly, the two components are coarsely mixed in this pre-mixing chamber along with any pigments, if required.

The proximity of the static steel mixer to the injection moulding machine subsequently ensures homogeneous mixing of the components.

The metering and mixing system is operated and controlled by means of a metering computer with an interface to the injection moulding machine.

## Material balancing system to empty the drums simultaneously

With every change of a 200 litre drum approximately 4% of the material will remain in the drum.

With the newly developed balancing system from DOPAG it is now possible to reduce this quantity to just around 1%.

This can lead to potentially significant savings.

**Exact, simple, economical.**

### Sample calculations of possible savings per year

Note: These economy calculation examples are based on 3 shift / 365 days working

#### **Part shot weight approx. 0.06 gram**

- Per mould 128 parts / shot
- Drum change approx. every 14 days
- Possible cost savings approx. € 3,350 / year

#### **Part shot weight approx. 4.5 gram**

- Per mould 8 parts / shot
- Drum change approx. every 4 days
- Possible cost savings approx. € 11,650 / year

#### **Part shot weight approx. 190 gram**

- Per mould 1 parts / shot
- Drum change approx. every 1,5 days
- Possible cost savings approx. € 31,150 / year

The material balancing system to empty the drums simultaneously is optionally available for the silcomix ranges L200 and H200.

# Metering and Mixing System silcomix P20

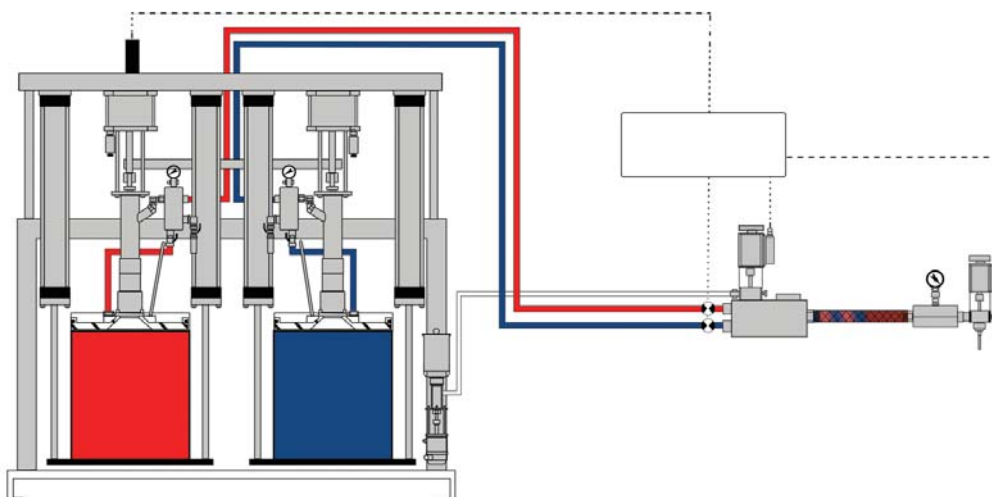


## Equipment

- Compact chassis, transportable by fork lift
- Pneumatic container elevator rams
- Pneumatically driven piston pumps
- Metering computer
- Touch screen terminal
- Level control
- Mixing block, static steel mixer, material pressure regulator, dispensing valve
- Material pressure control through sensors

## Options

- Alternative follower plate sizes
- Pigment injection metering - up to 3 colours possible
- Material pressure control for pigment injection metering
- Volume counters
- Additional dispensing units
- Alternative power supplies
- Further options on request



# Metering and Mixing Systems silcomix L200 / H200

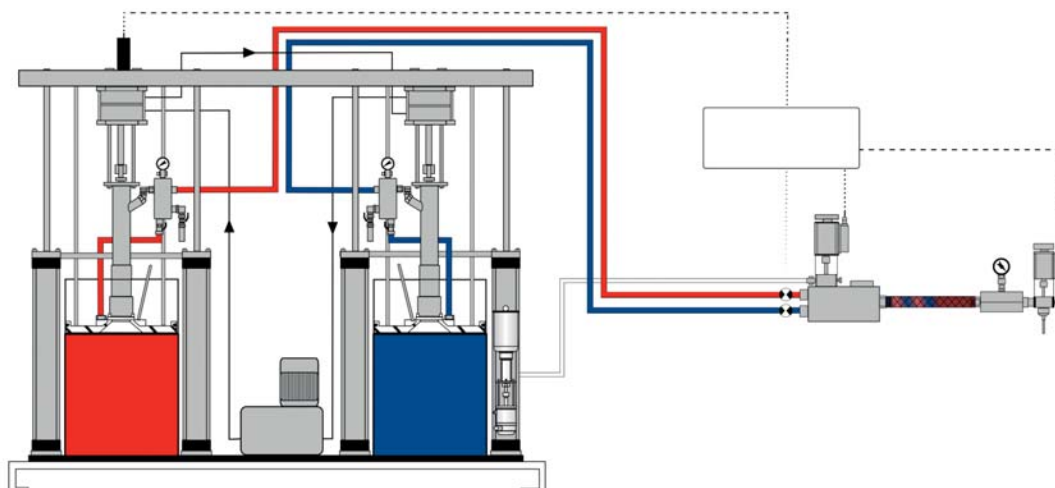


## Equipment

- Compact chassis, transportable by fork lift
- Pneumatically driven rams with L200
- Hydraulically driven rams with H200
- Hydraulically driven piston pumps
- Hydraulic power pack
- Metering computer
- Touch screen terminal
- Level control
- Mixing block, static steel mixer, material pressure regulator, dispensing valve
- Material pressure control through sensors

## Options

- Drum roll-in mechanism
- Alternative follower plate sizes
- Pigment injection metering - up to 4 colours possible
- Material pressure control for pigment injection metering
- Volume counters
- Additional dispensing units
- Alternative power supplies
- Material balancing system
- Further options on request



## Metering and Mixing System silcomix V200



### Equipment

- Pneumatically driven rams
- Pneumatically driven piston pumps
- Metering computer
- Level control
- Electronic volume counters, mixing block with VOLU-MIX principle, static steel mixer, material pressure regulator, dispensing valve

### Options

- Drum roll-in mechanism
- Alternative follower plate sizes
- Pigment injection metering - up to 2 colours possible
- Material pressure control for pigment injection metering
- Additional dispensing units with metering computer
- Larger mixing chamber
- Alternative power supplies
- Further options on request

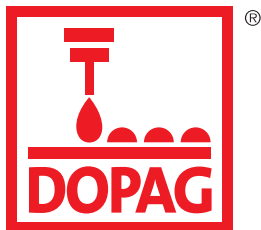
# Technical Data

	<b>silcomix P20</b>	<b>silcomix L200-30</b>	<b>silcomix L200-150</b>	<b>silcomix H200-150</b>	<b>silcomix H200-300</b>	<b>silcomix V200-150</b>
<b>Flow rate l/min / double strokes*</b>	up to 1.2 / 20	up to 0.7 / 12	up to 3.6 / 12	up to 6 / 20	up to 12 / 20	up to 3 / 20
<b>Mixing ratio</b>	100:100	100:100	100:100	100:100	100:100	100:100–100:10
<b>Pigment injection metering</b>	0.2–5 %	0.2–5 %	0.2–5 %	0.2–5 %	0.2–5 %	0.2–5 %
<b>Maximum working pressure</b>	355 bar	355 bar	355 bar	355 bar	355 bar	355 bar
<b>Material supply</b>	20 l	20–80 / 200 l	20–80 / 200 l	20–80 / 200 l	200 l	20–80 / 200 l
<b>Viscosity range</b>	up to 2,500,000 mPa s	up to 2,500,000 mPa s	up to 2,500,000 mPa s	up to 5,000,000 mPa s	up to 5,000,000 mPa s	up to 2,500,000 mPa s
<b>Power supply</b>	110–480 V, 1 Ph, 50/60 Hz, 230 W	110–480 V, 3 Ph, 50/60 Hz, 230 W	110–480 V, 3 Ph, 50/60 Hz, 230 W	110–480 V, 3 Ph, 50/60 Hz, 230 W	110–480 V, 3 Ph, 50/60 Hz, 230 W	110–480 V, 1 Ph, 50/60 Hz, 230 W
<b>Maximum air inlet pressure</b>	6 bar	6 bar	6 bar	6 bar	6 bar	6 bar
<b>Dimensions, L x W x H (mm)</b>	680 x 1100 x 1800	1600 x 1200 x 2500	1600 x 1200 x 2500	1600 x 1200 x 2500	1600 x 1200 x 2500	1800 x 600 x 2500
<b>Weight</b>	approx. 300 kg	approx. 680 kg	approx. 700 kg	approx. 780 kg	approx. 800 kg	approx. 650 kg
<b>Material balancing system</b>	No	Yes	Yes	Yes	Yes	No

\* The number of double strokes depends on the viscosity



# Hilger u. Kern / Dopag Group



The Hilger u. Kern / Dopag Group, with more than 250 employees, is one of the leading manufacturers of metering and mixing systems in the world for plural component polymers and single component media such as greases, oils and pastes.

## Germany

Hilger u. Kern GmbH  
Industrietechnik  
Käfertaler Straße 253  
68167 Mannheim

☎ +49 621 3705-0  
📠 +49 621 3705-200  
info@hilger-kern.de  
www.hilger-kern.com

## Switzerland

DOPAG Dosiertechnik  
und Pneumatik AG  
Langackerstrasse 25  
6330 Cham

☎ +41 41 7855-757  
📠 +41 41 7855-700  
info@dopag.ch  
www.dopag.com

For more than 35 years the group, with subsidiaries and distributors in over 30 countries, has developed systems and components to suit your individual needs.

## Subsidiaries

### France

DOPAG Sarl  
contact@dopag.fr

### Italy

DOPAG ITALIA S.r.l.  
info.it@dopag.com

### USA

DOPAG (US) Ltd.  
ussales@dopag.com

### United Kingdom

DOPAG (UK) Ltd.  
uksales@dopag.co.uk

### India

DOPAG India Pvt Ltd.  
info@dopag.in

### China

DOPAG (Shanghai) Metering  
Technology Co., Ltd.  
office@dopag.cn

Please visit our internet page to find the contact data of your local partner (Sales and Service Organisation).