

DISPERMAT® SL-C

Laboratory and pilot plant horizontal bead mill for repeatable fine grinding

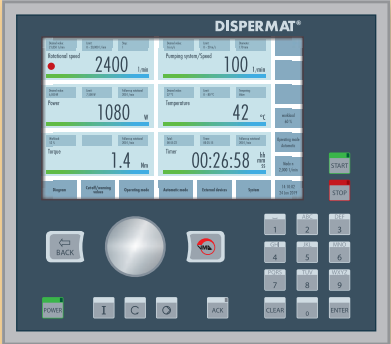
Fine grinding with extensive process control

DISPERMAT® SL-C laboratory and pilot plant mills are closed, horizontal bead mills with high output and extremely low dead volumes. During the dispersion process, the product is fed through the horizontal milling chamber and continuously dispersed. The DISPERMAT® SL-C bead mill can be used for single pass as well as re-circulation milling. After dispersion, the integrated air pressure system presses the remaining mill base out of the milling chamber which provides a complete recovery of the dispersed material.

Due to the low dead volume even the smallest quantities can be dispersed with high yield making the DISPERMAT® SL-C an ideal tool for research, development and quality control. Larger quantities can also be processed within a very short period of time. In order to minimise the product loss, the mill base is fed directly from the supply vessel into the milling chamber. The dispersed product passes through the mill base separation (dynamic gap) and is recovered either in a vessel (single pass) or flows back into the supply vessel (re-circulation method).

- Quick and cost effective dispersion of new formulations due to exact repeatability of dispersions.
- Quick and reliable transfer of laboratory development into production because of quantitative knowledge of the required mechanical power input.
- Quality control and assurance of production.

C – technology



- **DISPERWHEEL® speed adjustment**
infinitely variable speed adjustment with rotary pulse encoder
- **Large color display**
indications of speed, torque, power, product temperature, timer and peripheral speed
- **Connectivity**
USB, Wi-Fi, LAN
- **Repeatability**
dispersion method: constant speed or constant mechanical power input for optimum repeatability, temperature-based dispersing
- **Data recording**
recording of the process parameters with graphical indication
- **Switch off parameters**
switch off function for temperature, speed, torque and power
- **Database**
100 individual PRESET configurations for speed, time, switch off parameters, ramp function, etc.
- **Power compensation**
net power calibration



DISPERMAT® SL-C bead mill milling system:

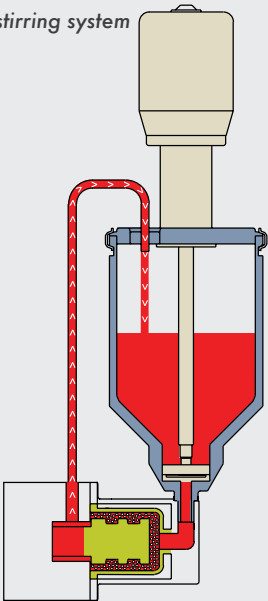
- Milling chamber of wear-resistant high alloy stainless steel with hardened nitrided steel. The milling chamber and the milling rotor are available in hard metal, ceramic (ZrO2) or silicon carbide (SiSiC).
- Millbase separation by dynamic gap
- Mechanical shaft seal
- Seal pressure system with integrated cooling
- Minimised dead volume
- Dispersion of small quantities of millbase is possible due to almost complete product recovery
- Very high millbase yield
- Excellent temperature transfer due to guided cooling water system with extremely large surface area

Special benefits of the DISPERMAT® SL-C bead mill

- Easy to use and secure to handle
- Quick change of millbase due to particularly easy and simple cleaning
- Single pass and continuous procedure
- Circulation milling with integrated pumping and stirring system
- Dispersion of flowing and non-flowing products
- High mechanical power input permits processing of difficult to disperse materials

DISPERMAT® SL-C bead mill

- Pumping and stirring system
- Supply vessel
- Milling system
- Product



The milling system is made of a special wear-resistant, high alloy steel. As an option it is also available made of:

- Ceramic or hard metal is also available for pharmaceutical and electronic applications where metallic abrasion in the millbase has to be avoided.
- ZrO2 zirconium oxide
a hardwearing white ceramic for minimal wear or colour contamination.
- SiSiC silicon carbide
a hard black ceramic for minimal wear and with excellent heat transfer properties

The DISPERMAT® SL-C bead mill is supplied with VITON (FKM-rubber) O-rings as standard. EPDM (ethylene propylene) O-rings can be fitted at no extra charge. If VITON or EPDM is not compatible with the products being milled, perfluoroelastomers O-rings are recommended: KALREZ®, CHEMRAZ®, PERLAST®. Refer to page 177.

DISPERMAT® type	Power kW	Speed rpm	Milling chamber volume litre	Product volume litre
SL5-C	1.1	0 – 6000	0.05	0.05 – 0.75
SL12-C	1.1	0 – 6000	0.125	0.15 – 0.75
SL25-C	2.2	0 – 6000	0.25	0.3 – 2.5
SL50-C	3	0 – 6000	0.5	0.5 – 10
SL100-C	3	0 – 3000	1	1 – 20
SL200-C	4	0 – 3000	2	2 – 50



DISPERMAT® SL and DISPERMAT® SL-nano

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SL5	1.1	0 - 6000	0.05	0.05 - 0.5
SL12	1.1	0 - 6000	0.125	0.5 - 0.75
SL25	2.2	0 - 6000	0.25	0.2 - 2.5
SL50	3	0 - 6000	0.5	0.5 - 10

DISPERMAT® SL-C EXBead mill for fine grinding in
explosive areas up to Zone 0

DISPERMAT® SL-C EX laboratory and pilot plant mills are closed, horizontal bead mills with high output and extremely low dead volumes. During the dispersion process, the product is fed through the horizontal milling chamber and continuously dispersed. The DISPERMAT® SL-C EX bead mill can be used for single pass as well as re-circulation milling. After dispersion, the integrated air pressure system presses the remaining mill base out of the milling chamber which provides a complete recovery of the dispersed material.

Due to the low dead volume even the smallest quantities can be dispersed with high yield making the DISPERMAT® SL-C EX an ideal tool for research, development and quality control. Larger quantities can also be processed within a very short period of time. In order to minimise the product loss, the mill base is fed directly from the supply vessel into the milling chamber. The dispersed product passes through the mill base separation (dynamic gap) and is recovered either in a vessel (single pass) or flows back into the supply vessel (re-circulation method).

The milling system is made of a special wear resistant, high alloy steel. As an option it is also available made of:

- Ceramic or hard metal is also available for pharmaceutical and electronic applications where metallic abrasion in the millbase has to be avoided.
- ZrO₂ zirconium oxide
a hardwearing white ceramic for minimal wear or colour contamination.
- SiSiC silicon carbide
a hard black ceramic for minimal wear and with excellent heat transfer properties

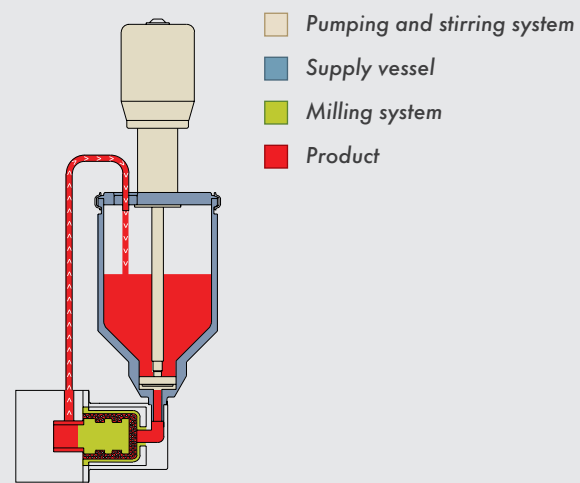
The DISPERMAT® SL-C EX bead mill is supplied with VITON (FKM-rubber) O-rings as standard. EPDM (ethylene propylene) O-rings can be fitted at no extra charge. If VITON or EPDM is not compatible with the products being milled, perfluoroelastomeres O-rings are recommended: KALREZ®, CHEMRAZ®, PERLAST®. Refer to page 177 for the O-ring chemical compatibility chart.

Special benefits of the DISPERMAT® SL-C EX bead mill

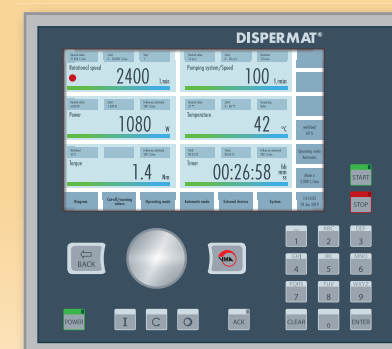
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- Quick and reliable transfer of laboratory development into production because of quantitative knowledge of the required mechanical power input.
- Quality control and assurance of production.
- Single pass and continuous procedure
- Circulation milling with integrated pumping and stirring system
- Dispersion of flowing and non-flowing products
- High mechanical power input permits processing of difficult to disperse materials
- Easy to use and secure to handle

DISPERMAT® SL-C EX bead mill milling system:

- Milling chamber of wear-resistant high alloy stainless steel with hardened nitrided steel. The milling chamber and the milling rotor are available in hard metal, ceramic (ZrO₂) or silicon carbide (SiSiC).
- Millbase separation by dynamic gap
- Mechanical shaft seal
- Seal pressure system with integrated cooling
- Minimised dead volume
- Dispersion of small quantities of millbase is possible due to almost complete product recovery
- Very high millbase yield
- Excellent temperature transfer due to guided cooling water system with extremely large surface area
- Quick change of millbase due to particularly easy and simple cleaning

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SL50-C EX	3	0 - 6000	0.5	0.5 - 10
SL100-C EX	3	0 - 3000	1	1 - 20
SL200-C EX	4	0 - 3000	2	2 - 50

**C-EX – technology**

- **Large color display**
indications of speed, torque, power, product temperature, timer and peripheral speed
- **Database**
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