



# KINEMATICA

Homogenizing perfected.



## POLYMIX®

**LABORATORY LINE**

### POLYMIX® PX-MFC 90 D

Laboratory mill, dry sample preparation

# POLYMIX® PX-MFC 90 D

## Laboratory mill.

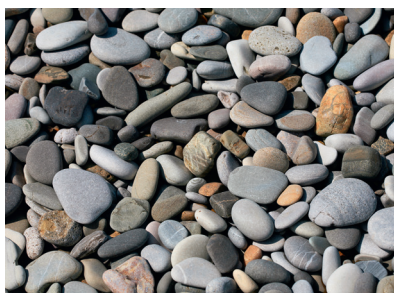
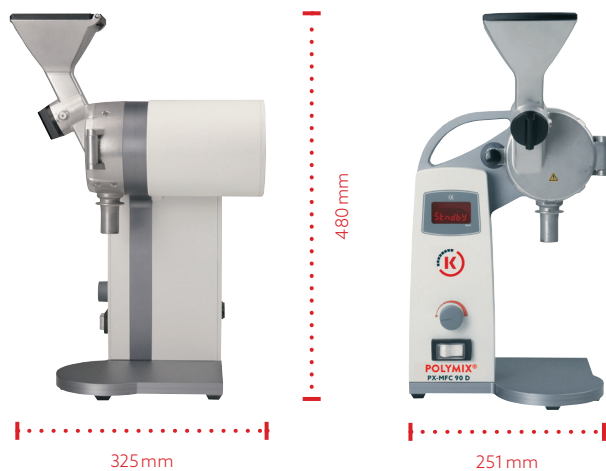
Analysis or quality control requires finely ground samples. Easy to change grinding attachments and sieves extend the range of any samples that can be processed. Simple handling, high user safety and efficient grinding results are just a few of the advantages of this mill.

### YOUR LABORATORY EXPERT

This laboratory mill is characterized by a very robust design using solid milled parts and hardened components that have been designed for high wear and tear found with such processes as grinding of stones which can have a hardness of up to 6 on the Mohs scale. You will receive tried and tested Swiss quality.

### ERGONOMICS

- Dust protected main safety switch
- Gearless speed control
- Illuminated speed- and status display
- Funnel with hinged lid
- Refilling during operation is possible depending on the product
- Sample dosing or addition with turnstile
- Tight-fitting stodger in grinding chamber for subsequent application of pressure
- Grinding attachment variants can be easily changed by customer
- Tool free sieve change
- Motor stop when opening grind chamber
- Very simple cleaning process
- Carrying handle
- Very quiet maintenance-free motor
- Integrated excess load-, excess heat- and jam protection
- Automatic standby mode





#### RESULTS ARE CRUCIAL

|                              |                                                                                                                                                       |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Attainable particle sizes    | < 40µm (depending on product)                                                                                                                         |
| Sieve kernel sizes           | 1/5 of sieve diameter is the approximately attainable kernel size e.g., sieve 0.2 mm / 5 = 0.04 mm (40µm)                                             |
| Grinding attachment variants | Hammering / Blade from hardened stainless steel<br>Hammer grinding attachment: brittle samples<br>Blade grinding attachment: stringy, fibrous samples |

#### TECHNICAL INFORMATION

|                                    |                                                                                  |
|------------------------------------|----------------------------------------------------------------------------------|
| Funnel volume                      | 300 ml                                                                           |
| Product discharge                  | For collection tubes with norm grinding NS29                                     |
| Sieves                             | 0.2 to 6 mm mesh size                                                            |
| Grinding attachments (convertible) | Hammer grinding attachment<br>Blade grinding attachment                          |
| Motor                              | Wear-free three-phase motor<br>Gearless direct drive<br>Security system auto-off |
| Drive power                        | 1000W                                                                            |
| Speed range                        | 50 to 6000 rpm                                                                   |
| Sound level (without load)         | 70 dB(A) for 6000 rpm                                                            |
| Supply voltage                     | 100 – 230 V ± 10 %, 50Hz / 60Hz                                                  |
| Maximum relative humidity          | 80 % in storage<br>80 % during operation                                         |
| Operating temperature              | 0 – 40 °C                                                                        |
| Protection class according to DIN  | IP 20                                                                            |
| Measurements (L x W x H)           | 325 x 251 x 480 mm                                                               |
| Weight                             | 12 kg                                                                            |
| Standard EMC                       | IEC / EN 61000-6-2 / EN 61000-6-3                                                |
| Safety Norm                        | IEC / EN 61010-2-51                                                              |



#### USERS / APPLICATION RANGES

- Grinding of solids for general sample preparation
- Grinding samples for dry analysis or analysis in liquids
- Sample preparation in content analysis
- Sample preparation for quality control
- Pollutant analysis (e.g. ground samples, foodstuffs etc.)

This list provides a small selection of possible applications.

# Grinding attachments.

Blade grinding or hammer grinding? You have the choice.

If there are questions regarding the use of our mill for your application after speaking with a specialist, our application lab will be happy to run your sample and send the results for your inspection.

## NOTE ABOUT GRINDING ATTACHMENTS

Wet samples or samples with high fat content gum up the sieve and chamber, producing a useless grinding result. For these types of samples Kinematica provides the POLYMIX® mixer and POLYTRON® homogenizers. They cover a broad range of samples.



### BLADE GRINDING ATTACHMENT

#### Technology

Consists of a rotor with three hardened cutting knives and stator with 3 cutting bars. During the cutting process, the sample is spun around the grinding chamber and cut until the desired particle size has been achieved. The ground sample passes through the sieve into the collection container. Particles that are larger than the sieve diameter remain in the mill and can be removed by opening the grinding chamber.

Ideal for processing of dry, stringy, fibrous and fat-free materials such as:

Wood, bark, roots, leaves, straw, corks, dried fruit, dried fat-free meat, fish fins, fish bones, feathers, leather, leather skin, wool, cotton, linen, paper, coals, turf, grass, dried resins, synthetic materials, fiber glass, plastic pellets, various textiles, felt, etc.



Before



After



### HAMMER GRINDING ATTACHMENT

#### Technology

Consists of a rotor with three hardened strike hammers and a grooved stator. During the grinding process, the sample is spun around the grinding chamber and struck until the desired particle size has been achieved. The ground sample passes through the sieve into the collection container. Particles that are larger than the sieve diameter remain in the mill and can be easily removed by opening the grinding chamber.

Ideal for processing of dried, brittle and fat-free materials such as:

Dried grains, oats, malt, pectin, raw and roasted coffee beans, dry beans, fish skeletons, nut shells, bones, pebbles, rock, amber, ceramics, etc.



Before



After



# Order information and accessories.

Authorized extension of your system.

Our modular accessories provide the at most flexibility. Switching grinding attachments is as easy as changing sieves. Our application experts are available to answer your questions at any time.

## MILL



| Sales No.                                   | Product                  | Description                                                                                          |
|---------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------|
| Mill with <b>hammer grinding</b> attachment |                          |                                                                                                      |
| 35010020                                    | PX-MFC 90 D, 230 V       | CH-power cable, hammer attachment, sieve 2.0 mm, tool set, rack for tubes with 12 intercepting tubes |
| 35010021                                    | PX-MFC 90 D, 230 V       | EU-power cable, hammer attachment, sieve 2.0 mm, tool set, rack for tubes with 12 intercepting tubes |
| 35010022                                    | PX-MFC 90 D, 230 V       | UK-power cable, hammer attachment, sieve 2.0 mm, tool set, rack for tubes with 12 intercepting tubes |
| 35010023                                    | PX-MFC 90 D, 100 - 120 V | Power cable, hammer attachment, sieve 2.0 mm, tool set, rack for tubes with 12 intercepting tubes    |



|                                            |                          |                                                                                                                                     |
|--------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Mill with <b>blade grinding</b> attachment |                          |                                                                                                                                     |
| 35010030                                   | PX-MFC 90 D, 230 V       | CH-power cable, blade grinding attachment incl. dismantling tool, sieve 2.0 mm, tool set, rack for tubes with 12 intercepting tubes |
| 35010031                                   | PX-MFC 90 D, 230 V       | EU-power cable, blade grinding attachment incl. dismantling tool, sieve 2.0 mm, tool set, rack for tubes with 12 intercepting tubes |
| 35010032                                   | PX-MFC 90 D, 230 V       | UK-power cable, blade grinding attachment incl. dismantling tool, sieve 2.0 mm, tool set, rack for tubes with 12 intercepting tubes |
| 35010033                                   | PX-MFC 90 D, 100 - 120 V | Power cable, blade grinding attachment incl. dismantling tool, sieve 2.0 mm, tool set, rack for tubes with 12 intercepting tubes    |

## STODGER



| Sales No. | Product | Description                                                                                             |
|-----------|---------|---------------------------------------------------------------------------------------------------------|
| 35080001  | Stodger | For active insertion of fibrous materials, which do not reach the grinding chamber due to their weight. |

## OTHER ACCESSORIES



| Sales No. | Product            | Description                                  |
|-----------|--------------------|----------------------------------------------|
| 35080004  | Intercepting tubes | 12 intercepting tubes for PX-MFC 90 D        |
| 35080003  | Rack for tubes     | Rack with a drawer for 12 intercepting tubes |

GRINDING ATTACHMENTS

| Sales No. | Product                    | Description                                                                                   |
|-----------|----------------------------|-----------------------------------------------------------------------------------------------|
| 35031001  | Hammer grinding attachment | Consists of 3-armed rotor and grooved stator / tool included.                                 |
| 35031002  | Blade grinding attachment  | Consists of 3-armed rotor with cutting knives and stator with 3 cutting bars / tool included. |



SIEVE ATTACHMENTS

| Sales No. | Product   | Description          |
|-----------|-----------|----------------------|
| 35095002  | Sieve 0.2 | Hole diameter 0.2 mm |
| 35095005  | Sieve 0.5 | Hole diameter 0.5 mm |
| 35095008  | Sieve 0.8 | Hole diameter 0.8 mm |
| 35095010  | Sieve 1.0 | Hole diameter 1.0 mm |
| 35095015  | Sieve 1.5 | Hole diameter 1.5 mm |
| 35095020  | Sieve 2.0 | Hole diameter 2.0 mm |
| 35095030  | Sieve 3.0 | Hole diameter 3.0 mm |
| 35095040  | Sieve 4.0 | Hole diameter 4.0 mm |
| 35095050  | Sieve 5.0 | Hole diameter 5.0 mm |
| 35095060  | Sieve 6.0 | Hole diameter 6.0 mm |



Depending on the sample, even finer results can be achieved by grinding with two or more sieves with progressively smaller hole sizes. Each mill includes a 2.0 mm sieve attachment.  
Hole diameter: Depending on the product, 1/5 of sieve diameter is the approximately attainable particle size.  
Example: Sieve 0.2 mm / 5 = 0.04 mm (40µm)

# Users / application ranges.

Best solution for every application.

Since 1962 we are a leading supplier of dispersing solutions for applications in the chemical, biotechnology, pharmaceutical, cosmetics and food industries. Due to our close relationships with our customers we detect new trends early and we always look for ways to find an ideal solution for you.





# Our mission. Your solution.

Homogenizing perfected: for every industry.

Kinematica's broad portfolio of solutions can address almost every dispersing application for the pharmaceutical, cosmetic, chemical, food and life science industry. Innovative powder-induction systems, solutions for completely sterile environments, or fully-compliant ATEX architecture are just some examples of the broad portfolio that Kinematica can offer with true scalability from pilot-plant to large plant configurations.

Our state-of-the-art technology, in addition to a professional consulting and engineering suite of services, can address a variety of processes such as blending / mixing / stirring, emulsifying, deagglomerating, foaming, crushing and homogenizing with particle size reduction from a few micrometers down to nanometers in size: the proprietary design and innovative geometry of our aggregates / generators can downsize and provide perfect statistical particle distribution for the finest emulsions / suspensions and foam dispersions.



## HEADQUARTERS

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