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PRODUCT CATALOG / Planetary Mills

Vertical square planetary ball mill

XQM series

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A vertical cabinet-style planetary mill for mixing, fine grinding and research sample preparation.

Overview

A vertical cabinet-style planetary mill for mixing, fine grinding and research sample preparation. The published XQM chart spans laboratory and larger configurations, so the model should be selected from the detailed table rather than from a shortened series label.

How it works

Four jars rotate on a revolving planetary disc. The combined motion drives impact and friction inside each jar. Processing can be organized as dry milling, wet milling or an appropriately specified sealed-jar process.

Key features

- Four jar positions, with compatible standard and vacuum-jar volumes listed by model.
- Separate tables identify capacity, physical dimensions, drive power and speed ranges.
- Larger models have different power, supply and control arrangements; they are not simply higher-volume laboratory units.

Specifications

Published catalog references are reproduced below. Nominal volume is not a sample-mass rating. Confirm the selected model, material grade, electrical supply and complete supplied configuration in the quotation.

Model specifications — 1

Model	Nominal capacity	Configuration class	Compatible jar volume	Jar positions	Compatible vacuum jar volume
XQM-0.4	0.4L	Laboratory	25-100mL	4	50mL vacuum jar
XQM-1	1L	Laboratory	50-500mL	4	50-250mL vacuum jar
XQM-2	2L	Laboratory	50-500mL	4	50-250mL vacuum jar
XQM-4	4L	Laboratory	250-1000mL	4	50-500mL vacuum jar
XQM-6	6L	Laboratory	1-1.5L	4	50-1000mL vacuum jar
XQM-8	8L	Laboratory	1-2L	4	1-1.5L vacuum jar
XQM-10	10L	Laboratory	1-2.5L	4	1-2L vacuum jar
XQM-12	12L	Laboratory	1-3L	4	1-2L vacuum jar
XQM-16	16L	Laboratory	2-4L	4	1-3L vacuum jar
XQM-20	20L	Production	2-5L	4	2-4L vacuum jar
XQM-40	40L	Production	5-10L	4	5L vacuum jar
XQM-60	60L	Production	10-15L	4	10L vacuum jar
XQM-80	80L	Production	15-20L	4	15L vacuum jar
XQM-100	100L	Production	20-25L	4	20L vacuum jar
XQM-200	200L	Production	50L	4	25L vacuum jar

Model specifications — 2

Model	Machine mass (kg)	Dimensions (mm)
XQM-0.4	35	550x300x360
XQM-1	100	760x470x580
XQM-2	100	760x470x580
XQM-4	100	760x470x580
XQM-6	100	760x470x580
XQM-8	168	900x600x640
XQM-10	168	900x600x640
XQM-12	168	900x600x640
XQM-16	203	950x600x710
XQM-20	392	1200x790x930
XQM-40	656	1400x880x1070

Model	Machine mass (kg)	Dimensions (mm)
XQM-60	950	1600×1070×1250
XQM-80	1300	1750×1140×1330
XQM-100	1300	1800×1150×1140
XQM-200	2725	2670×1600×2804

Model specifications — 3

Model	Electrical supply	Supply phase	Motor power (kW)	Speed control	Programmable run time (min)
XQM-0.4	220V 50Hz	Single phase	0.25kW	Variable-frequency control	1-9999
XQM-1	220V 50Hz	Single phase	0.75kW	Variable-frequency control	1-9999
XQM-2	220V 50Hz	Single phase	0.75kW	Variable-frequency control	1-9999
XQM-4	220V 50Hz	Single phase	0.75kW	Variable-frequency control	1-9999
XQM-6	220V 50Hz	Single phase	0.75kW	Variable-frequency control	1-9999
XQM-8	220V 50Hz	Single phase	1.5kW	Variable-frequency control	1-9999
XQM-10	220V 50Hz	Single phase	1.5kW	Variable-frequency control	1-9999
XQM-12	220V 50Hz	Single phase	1.5kW	Variable-frequency control	1-9999
XQM-16	380V 50Hz	Three phase	3kW	Variable-frequency control	1-9999
XQM-20	380V 50Hz	Three phase	4kW	Touchscreen	1-9999
XQM-40	380V 50Hz	Three phase	5.5kW	Touchscreen	1-9999
XQM-60	380V 50Hz	Three phase	7.5kW	Touchscreen	1-9999
XQM-80	380V 50Hz	Three phase	11kW	Touchscreen	1-9999
XQM-100	380V 50Hz	Three phase	11kW	Touchscreen	1-9999
XQM-200	380V 50Hz	Three phase	22kW	Touchscreen	1-9999

Model specifications — 4

Model	Reversing interval (min)	Planetary disc speed (rpm)	Jar rotation speed (rpm)	Revolution : rotation ratio	Published noise level (dB)
XQM-0.4	1-999	0-435	0-870	1:2	58±5
XQM-1	1-999	0-405	0-810	1:2	60±5
XQM-2	1-999	0-405	0-810	1:2	60±5
XQM-4	1-999	0-405	0-810	1:2	60±5

Model	Reversing interval (min)	Planetary disc speed (rpm)	Jar rotation speed (rpm)	Revolution : rotation ratio	Published noise level (dB)
XQM-6	1-999	0-335	0-670	1:2	60±5
XQM-8	1-999	0-290	0-580	1:2	60±5
XQM-10	1-999	0-290	0-580	1:2	60±5
XQM-12	1-999	0-290	0-580	1:2	60±5
XQM-16	1-999	0-255	0-510	1:2	65±5
XQM-20	1-999	0-215	0-430	1:2	65±5
XQM-40	1-999	0-195	0-390	1:2	68±5
XQM-60	1-999	0-174	0-260	1:1.5	68±5
XQM-80	1-999	0-161	0-242	1:1.5	68±5
XQM-100	1-999	0-161	0-242	1:1.5	68±5
XQM-200	1-999	0-143	0-215	1:1.5	68±5

Applications

Research samples, ceramic and battery-material development, mineral powders and small-batch process studies.

Suitability depends on the actual sample, process and analytical requirements; a listed application is not a guaranteed final-particle-size result.

Accessories and options

Select jar and media materials, a compatible vacuum closure and the control interface. Ask about air cooling, liquid-nitrogen cooling or other assistance as a configured system, with utilities and temperature measurement agreed in advance.

- Jar and media: confirm material, volume, holder fit and the complete working load.
- Vacuum or gas requirements: specify the complete jar, lid and seal arrangement; no pressure rating is assumed.
- Utilities and supply scope: state voltage, frequency, phase, destination and required documents; confirm included versus optional items.

[Compare milling jars](#) · [Compare grinding media](#) · [Low temperature planetary grinding machines](#) · [Ultrasonic planetary ball mills](#)

Selection guidance

Use the published model rows to check jar size and machine dimensions. Where production batches are intended, also compare the dedicated production-scale XQM range.

[Work through the selection guide](#) · [Request a configuration quotation](#)

Trials and comparisons

Equipment-family reference

Silica

XQM; exact model not recorded · Dry milling

- Sample: 176 g
- Jar: 500 mL alumina/corundum jar
- Recorded sampling / duration: 45 min

Recorded observations

Observation	Sampling time	D50 (µm)	D90 (µm)
Starting sample	Before milling	26.15	58.62
Recorded sample	45 min	1.77	3.69

This is an XQM-family record, not verification of every XQM model. The requested 1 µm target was not demonstrated. Exact ceramic/media grades and measurement/dispersion methods are not supplied.

Equipment-family reference

Ore samples

XQM; exact model not recorded · Two agate-jar sample runs

- Sample: 40.2 g and 102 g
- Jar: 250 mL agate jar; agate media
- Recorded sampling / duration: 90 min per sample

Recorded observations

Sample	Sample mass	D50 (µm)	D90 (µm)
Sample 1	40.2 g	2.82	9.03
Sample 2	102 g	3.62	11.23

Both samples were recorded in one entry, but identical composition/batch and all other conditions are not

established. The difference cannot be attributed solely to sample loading. The 3 h total covers two 90 min runs.

How to plan a fair comparison

For a scale or jar-size comparison, retain the same material batch and analytical method and record the actual sample and media loads. Nominal mill capacities alone do not establish equivalent process conditions.

These anonymous records are not operating instructions. Measurement and dispersion methods are not fully specified in the test summaries; results apply to the reported samples and conditions.

Discuss a matched sample evaluation

Plan your milling configuration.

TENCAN develops and manufactures planetary milling equipment, with application support in Changsha and a production base in Wushi, Hunan.

Share your material, batch size, target particle size and contamination limits. Our team can help confirm the mill, jars, media and electrical requirements, or arrange a sample grinding evaluation.

Reference information applies to the described models and conditions. Confirm the final specification and supplied accessories with TENCAN before ordering.

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Product page <https://www.planetaryballmill.com/planetary-ball-mills/vertical-square-planetary-ball-mill.html>

Sample grinding www.planetaryballmill.com/sample-testing/