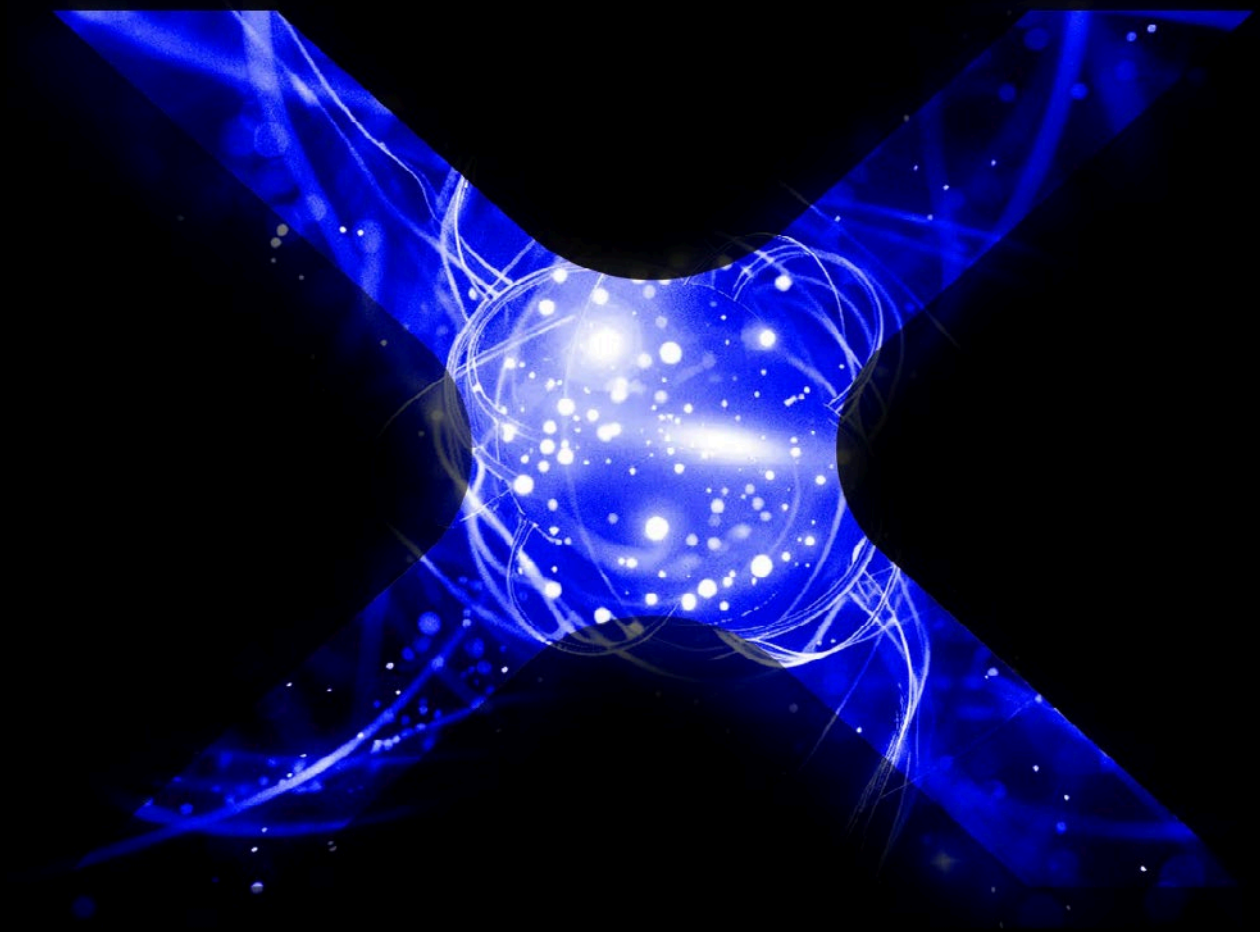
QuantumX



SIGMA MIXERS
+ EXTRUDERS

QuantumX Sigma Mixers + Sigma Extruders

Engineered for Precision. Designed for Performance. Built for You.

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WHAT IS A SIGMA MIXER?

01

A Sigma Mixer—also called a Double Arm Kneader—is a heavy-duty mixer designed for the most challenging mixing tasks where high viscosity, pasty, dough-like, or sticky materials must be processed.

Its heart is the pair of sigma-shaped blades that rotate at different speeds to knead, shear, and fold material with unmatched efficiency.

The asymmetric rotation creates intense mixing forces, ensuring even distribution of ingredients and complete homogenization. Depending on process needs, QuantumX Sigma Mixers can be equipped with discharge options such as tilting, bottom extrusion, or direct connections to downstream equipment.

02

operation

Sigma Blades in Action

The two blades rotate toward each other at differential speeds (commonly in a 3:2 ratio). This motion stretches and folds the material, creating continuous mixing and kneading.

Extruder Discharge (Mixtruder Design)

For sticky, semi-solid, or viscous batches, a screw extruder mounted at the bottom of the trough gently and efficiently discharges the product. This avoids product loss and makes handling high-viscosity compounds easier.

Vacuum Capability

Many formulations benefit from vacuum mixing, which removes entrapped air, improves density, and enhances product stability. QuantumX Sigma Mixers can be fitted with a robust vacuum lid, pumps, and condensers for vacuum mixing & drying.



APPLICATIONS + INDUSTRIES SERVED

03

QuantumX Sigma Mixers are indispensable across industries where tough-to-mix materials demand power and precision:

Food + Beverage
Chewing gum, doughs, caramel, chocolate paste, fillings, sauces, textured proteins.

Pharmaceuticals
Adhesive plasters, ointments, high-viscosity APIs, controlled-release formulation

Chemicals
Sealants, adhesives, resins, pigments, lubricants, silicone rubber, PVC compounds.

Cosmetics & Personal Care
Lipsticks, balms, creams, soaps, gels.

Specialty Materials
Battery slurries, conductive pastes, explosives, nanomaterial compounds.



Wherever viscous, sticky, or high-solid formulations must be handled, QuantumX answers the call.

CONSTRUCTION + DESIGN OPTIONS

04

QuantumX custom-builds each Sigma Mixer to match the application. **Options include:**

Construction Materials

Food & pharma: 304 / 316 / 316L stainless steel, polished or sanitary grade.

Abrasive or corrosive products: Hardened steel, Hardox, Hastelloy, titanium.

Cost-sensitive applications: Mild/ carbon steel.

Drive Configurations

Variable speed drives for process flexibility.

Heavy-duty gearboxes for high-torque applications.

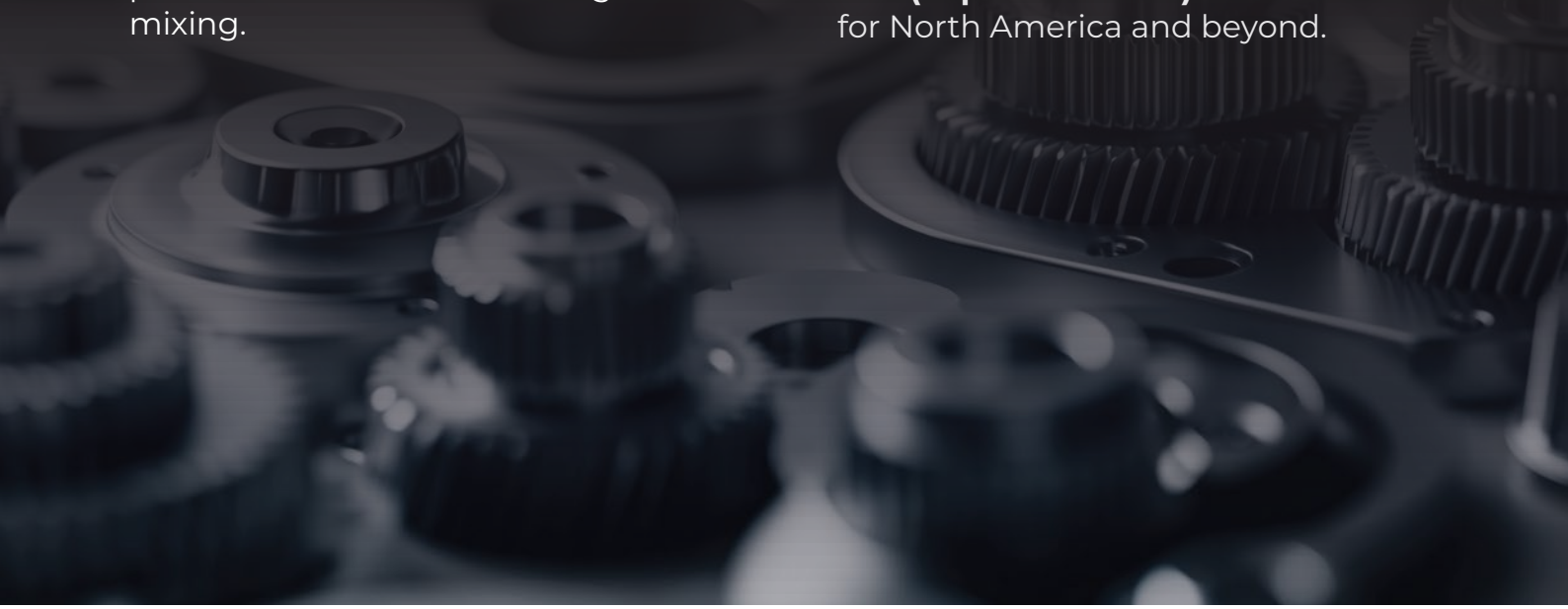
Heating + Cooling Jackets

Available with dimple jackets, half-pipe coils, or full jackets for precise thermal control during mixing.

Explosion Protection

ATEX-certified designs for European Union compliance.

ExP (Explosion Proof) versions for North America and beyond.



VACUUM + DRYING CAPABILITIES

05

When mixing under vacuum, the unit can also be adapted for mixing & drying:

Moisture, solvents, or volatiles can be removed.

Integrated condensers & recovery tanks allow solvent recovery.

Ideal for pharmaceutical, chemical, and battery applications where dryness and purity matter.

mixing & drying

06

options

QuantumX Sigma Mixers can be tailored with:

Load Cells
Precision weighing & batch monitoring.

Ingredient Loading Options
- Manual loading via covers.
- Automated systems with pneumatic or vacuum conveying.
- Bag dump stations or drum/tote lifts.

Discharge Configurations
Tilting discharge, bottom discharge valves, or screw extruder discharge.

Sanitary Options
Clean-In-Place (CIP) spray nozzles, washdown designs, and hygienic seals.

Control Systems
PLC/HMI with recipe entry, process monitoring, and batch traceability.

WHY QUANTUMX SIGMA MIXERS?

07

Global Engineering

Designed with decades of process knowledge, manufactured with precision in the USA, Europe, and Asia.

Customization

Every unit is built to match your specific process—no cookie-cutter solutions.

Affordability

High-performance engineering at realistic prices.

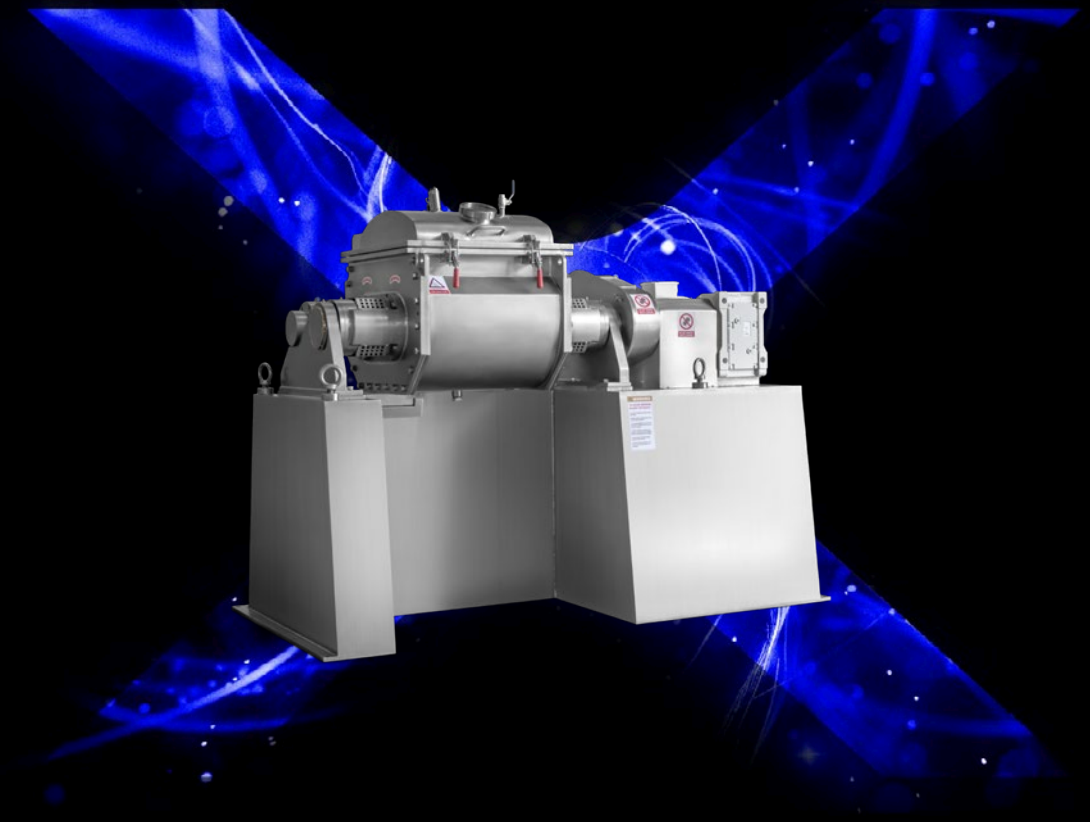
Warranty & Service

Backed by industry-leading warranties and full global service support.



CLOSING STATMENT

08



QuantumX Sigma Mixers and Sigma Extruders are

the ultimate solution for high-viscosity mixing,

from chewing gum to conductive pastes.

With options for vacuum, extrusion, ATEX/ExP safety, and specialized materials of construction, they are engineered to exceed the toughest industrial challenges.

SPECIFICATIONS

09

Model	Total Volume (liter)	Working Volume (liter)	Power for Arms (kW)	Arm Speed (RPM)	L (mm)	W (mm)	H (mm)	Weight (kg)
PSG-1X	1	0.6	1.1	60/47	1,040	620	680	160
PSG-3X	3	1.8	1.1	60/47	1,100	650	700	180
PSG-5X	5	3	1.1	60/47	1,350	650	800	280
PSG-10X	10	6	1.5	60/42	1,350	700	950	320
PSG-15X	15	9	2.2	60/36	1,480	930	1,320	810
PSG-20X	20	12	3	50/35	1,600	850	1,150	920
PSG-30X	30	18	4	42/28	1,650	900	1,200	1,000
PSG-45X	45	27	4	42/28	1,700	950	1,280	1,200
PSG-50X	50	30	4	42/28	1,800	980	1,340	1,400
PSG-60X	60	36	5.5	40/26	1,850	1,050	1,360	1,600
PSG-70X	70	42	5.5	40/26	1,920	1,160	1,380	1,800
PSG-100X	100	60	5.5	40/26	2,100	1,285	1,390	2,100
PSG-150X	150	90	7.5	36/24	2,425	1,255	1,520	2,300
PSG-200X	200	120	11	40/25	2,500	1,270	1,650	2,900
PSG-250X	250	150	15	33/22	2,660	1,430	1,650	3,200
PSG-300X	300	180	15	33/22	3,000	1,450	1,850	4,100
PSG-400X	400	240	22	33/22	3,200	1,530	1,800	5,000
PSG-500X	500	300	30	33/22	3,300	1,650	2,050	5,900
PSG-600X	600	360	30	33/22	3,450	1,750	2,100	6,300
PSG-700X	700	420	37	32/21	3,500	1,800	2,150	6,800
PSG-750X	750	450	37	32/21	3,680	1,860	2,180	7,200

* Mixers Can be made to have a total volume of 3,000 L.



sigma

mixer + extruder

Model	Total Volume (liter)	Working Volume (liter)	Power for Arms (kW)	Arm Speed (RPM)	L (mm)	W (mm)	H (mm)	Weight (kg)
PSG-1 (*)	1	0.6	1.1	60/47	640	690	650	140
PSG-3 (*)	3	1.8	1.1	65/52	700	720	650	160
PSG-5 (*)	5	3	1.1	60/47	1,250	580	406	240
PSG-10 (*)	10	6	1.5	60/42	1,250	665	550	280
PSG-15	15	9	2.2	60/36	1,180	1,000	1,300	700
PSG-20	20	12	3	50/35	1,350	1,000	1,350	800
PSG-30	30	18	4	42/28	1,650	1,000	1,400	900
PSG-45	45	27	4	42/28	1,750	1,100	1,450	1,000
PSG-50	50	30	4	42/28	1,850	1,100	1,500	1,200
PSG-60	60	36	5.5	40/26	1,880	1,150	1,550	1,400
PSG-70	70	42	5.5	40/26	1,950	1,200	1,580	1,600
PSG-100	100	60	5.5	40/26	2,050	1,250	1,650	1,800
PSG-150	150	90	7.5	36/24	2,290	1,400	1,700	2,000
PSG-200	200	120	11	40/25	2,530	1,450	2,100	2,500
PSG-250	250	150	15	33/22	2,650	1,500	2,150	3,500
PSG-300	300	180	15	33/22	2,730	1,550	2,200	4,500
PSG-400	400	240	22	33/22	2,850	1,600	2,250	5,500
PSG-500	500	300	30	33/22	2,950	1,650	2,250	6,500
PSG-600	600	360	30	33/22	3,070	1,680	2,300	7,000
PSG-700	700	420	37	32/21	3,150	1,750	2,350	7,500
PSG-750	750	450	37	32/21	3,300	1,780	2,400	8,000

* Mixers Can be made to have a total volume of 3,000 L.


QuantumX