

**MIX
THE IMPOSSIBLE
TO
PERFECTION**

ALPHIE[®]
Three Dimensional Mixer

Pharmaceuticals & Food

Ceramics & Plastics

Metal Powder & Minerals

Paint & Pigments

Nuclear & Battery

Explosives & Fireworks

www.alphiemixer.com

Product By
HEXAGON
The Knowledge Centre

What is **ALPHIE**® 3D Mixer ?

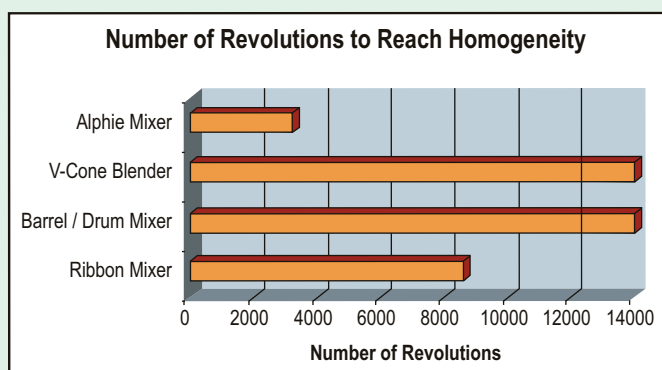
The motion of **ALPHIE**® is based on the kinematic Inversion Principle. The unusual, 3-dimensional mixing motion quickly and efficiently produces a homogeneous substance regardless of specific weight of the substances being mixed. This makes it an ideal powder blender or liquid mixer.

Better than conventional mixers

- ◆ In conventional mixers, the centrifugal force of the motion of rotation tends to favor segregation rather than mixing.
- ◆ The limits of conventional mixers are reached when mixing compounds with different densities or sizes are used.
- ◆ Barrel mixer has disadvantage of smaller / heavier particles sink deeper and segregation zones are generated.
- ◆ In Mixers with blades, are rotated on horizontal, vertical or inclined shafts. The speed and the forced motion generate shear forces harming the compounds.

Mixing Benefits

- ◆ High mixing efficiency
- ◆ Gentle mixing
- ◆ Short mixing time
- ◆ No segregation of the different compounds
- ◆ Dust free hygienic mixing in closed container
- ◆ No cross contamination as drum is removable



As you can see, Alphie 3D Mixer gives 3 to 4 times faster homogeneous mixing result than conventional mixer

Why Buy from Us

- ◆ We have entire range of models which our competitors do not have. We offer from 3 Ltr to 1500 Ltr capacity mixer running on same Kinematic Inversion principle.
- ◆ We offer all kind of customisation and tailor-made solution.
- ◆ Our mixers are fitted with HMI / PLC, VFD and international brand Motor and gearbox.
- ◆ We have customers in 25 countries including Europe, US, Japan etc. More than 35% of our products are exported.
- ◆ Indigenously developed and patented* technology with much smarter and user friendly operation.
- ◆ We are DSIR (Department of Science and Industrial Research, Govt. of India) approved Product Development Centre.

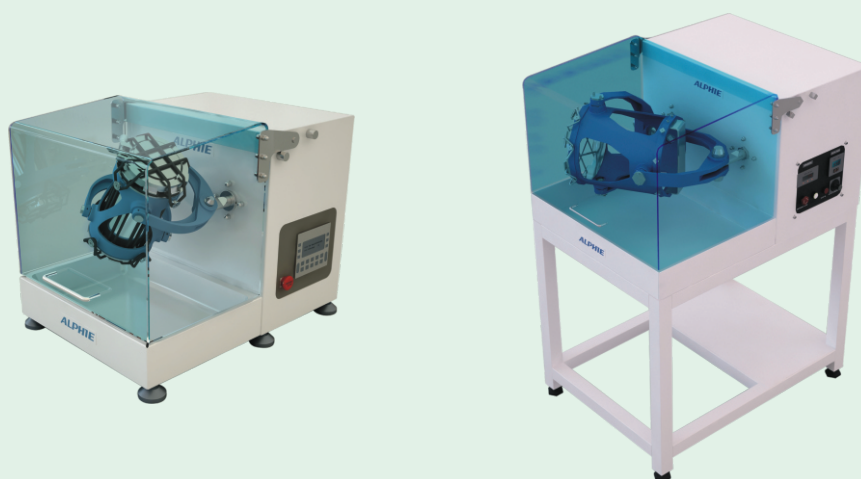
Few of our Customers



LIST IS ONLY PARTIAL, IN RANDOM ORDER

Laboratory Capacity Models

Our 3 and 10 Ltr mixer are ideal for laboratory, R & D and educational research purpose. They are even useful for small batch trial production also. Their compact design as well as working on single phase power supply makes them suitable for either table top or stand alone mixer.



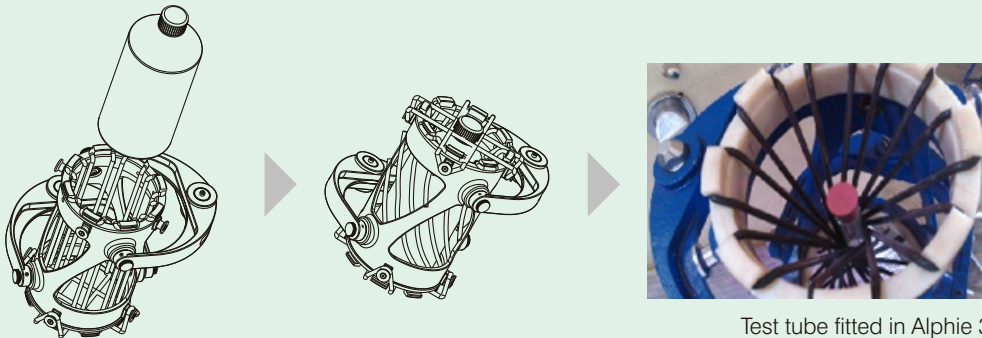
Alphie 3	Specification	Alphie 10
2.5	Capacity (Ltr)	10
2.0	Effective Capacity @ 80% (Ltr)	8
5	Max mixing mass (Kg)**	15
0.3 hp	Motor Power	0.5 hp
Single Phase, 220 V	Power Supply *	Single Phase, 220 V
10 - 80	Container Revolution (rpm)	10 - 70
Dia 115 x 275 Long	Max. Container Size (mm)	Dia 220 x 350 Long
65 Kg	Machine Weight (kg)	120 Kg
550 x 700 x 550	Overall Dimension (mm) (Length x Depth x Height)	700 x 930 x 1250

* We offer mixer to suit country specific power condition.

** Depends upon powder bulk density.

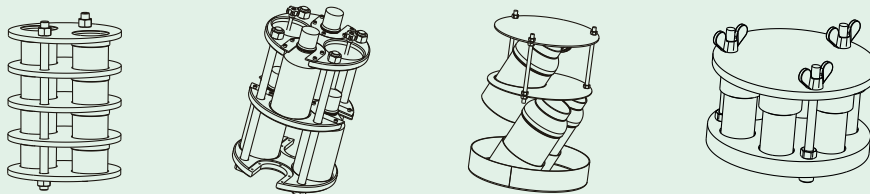
Ability to fix any shape / size / material of mixing container :

These models are equipped with mechanism which allows fixing of virtually anything. Let it be of cylindrical / Hexagonal / flask shape or made from steel / glass / plastic and capacity ranging from maximum to as small as a test tube.



Test tube fitted in Alphie 3

Fixing Adapters for placing multiple bottles :

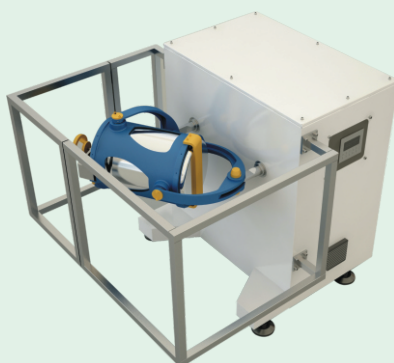


Specific Features:

- ◆ Machine without belt / chain / bush etc. All bearings are life long lubricated.
- ◆ Machine with speed, direction of rotation and time changing facility.
- ◆ Inbuilt control panel with VFD, HMI / PLC in all models.
- ◆ Low motor power consumption, thanks to use of High grade Aluminum holder.
- ◆ Practically, maintenance and spare parts free experience.
- ◆ With removable tray to collect accidentally spilled out powder.
- ◆ Transparent safety guard inter locked with machine working.
- ◆ Offered in Powder coated steel, Stainless steel and GMP options.

Pilot Capacity Models

Hexagon has comprehensive range of mid size capacity 3D Mixer, which are considered essential for small production units. The mixing drum can be fitted manually or optionally using manual trolley.



Specification	Alphie 20	Alphie 35	Alphie 50
Capacity (Ltr)	20	35	50
Effective Capacity @ 80%	16 Ltr.	28 Ltr.	40 Ltr.
Max mixing mass (kg)**	30	40 / 60	60 / 90
Motor Power	1.0 hp	1 / 1.5 hp	1.5 / 3 hp
Power Supply *	1 Ø, 220 V	3 Ø, 415 V	3 Ø, 415 V
Container Revolution (rpm)	10 - 50	10 - 40	10 - 40
Max Container Size (mm)	Dia 265 x 410 L	Dia 305 x 535 L	Dia 350 x 550 L

* We offer mixer to suit country specific power condition.

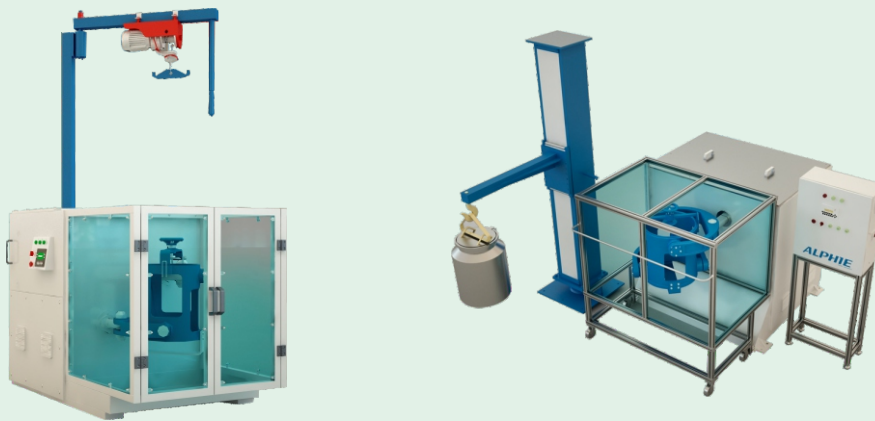
** Depends upon powder bulk density.

Specific Features:

- ◆ Control panel with HMI / PLC & VFD. Speed and time change facility.
- ◆ Forward & Reverse cycle speed provision, Inching facility with Recipe.
- ◆ Container fixing using hand wheel clamping.
- ◆ Adaptors offered for fixing smaller container.
- ◆ Offered in Powder coated steel, Stainless steel and GMP options.

Production Capacity Models

Hexagon offers production capacity mixers from 75 Ltr onwards, with container handling system. We have options like Hydraulic / Motorised drum lifter or electric hoist for loading / unloading the mixing drum with mixer. We design these drum lifters to suit customer's drum size and specification.



Specification	Alphi 75	Alphi 120	Alphi 200
Capacity (Ltr)	75	120	200
Effective Capacity @ 80%	60 Ltr.	96 Ltr.	160 Ltr.
Max mixing mass (kg)*	135	200	275
Motor Power	3 / 5 hp	5 / 7.5 hp	7.5 hp
Container Revolution (rpm)	30	30	25
Max Container Size (mm)	Dia 420 x 550 L	Dia 465 x 750 L	Dia 550 x 850 L

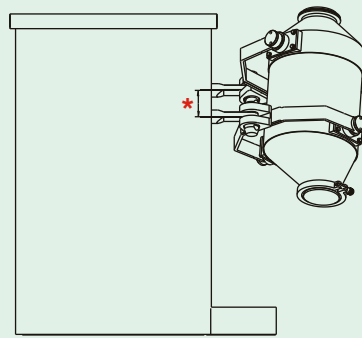
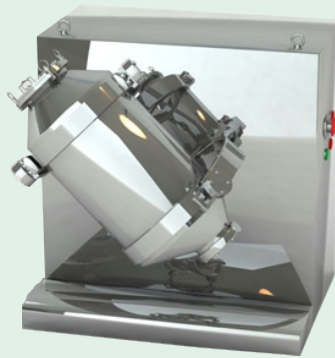
* Depends upon powder bulk density.

Specific Features:

- ◆ Control panel with HMI / PLC & VFD. Speed and time change facility.
- ◆ Vertical container loading with fixed position machine stoppage.
- ◆ Container loading using Wire rope hoist or specialised loader.
- ◆ Models larger than 200 ltr. are also available. Consult us for specification & dimension. We also offer special sizes pertaining to customer requirement.
- ◆ Offered in Powder coated steel, Stainless steel and GMP options.

Non Removable Drum Design

We also offer mixer design with Non Removal drum construction, where the mixing powder goes in mixing drum directly as in conventional mixers. Powder can be fed manually or using pneumatic conveying system.



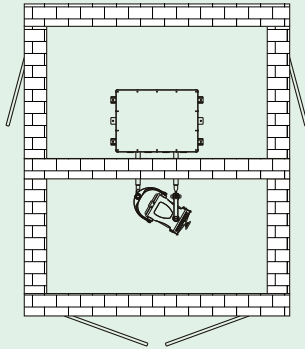
Capacity (Ltr)	100	200	400	600	800	1000	1500
Effective capacity @ 80% (Ltr)	80	160	320	480	640	800	1200
Mixing capacity (Kg)*	80	100	200	300	400	500	750
Motor Power (kW)	2.2	3.0	4.0	5.5	7.5	7.5	11.0
Container Revolution (rpm)	30	25	25	25	20	20	20

* Depends upon powder bulk density.

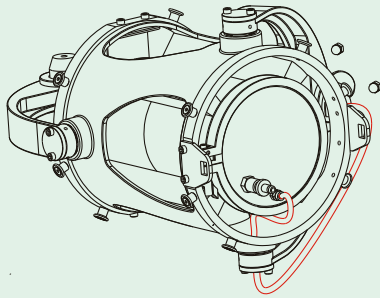
Specific Features:

- ◆ Control panel with HMI / PLC & VFD. Speed and time change facility.
- ◆ Mixer shafts are NOT in same plane, but at height difference. See '*' above, with state of the art dynamically balanced driven shaft. This along with eccentric discharge cone helps efficient discharge of material without any dead zone.
- ◆ Mixer stops at pre-defined position for easy charging and discharging.
- ◆ Offered in Powder coated steel, Stainless steel and GMP options.

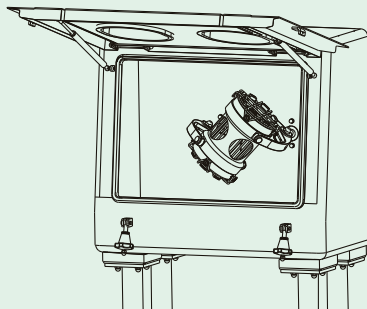
Special Design Options



- ◆ For Explosive / Clean Room applications
- ◆ Mixing Container and Drive Unit in different Room
- ◆ Design & technology approved by PESO for crackers manufacturing



- ◆ Liquid Dosing while Mixing
- ◆ Can transfer hot / cold liquid at metered flow rate
- ◆ Can create vacuum atmosphere for moisture evaporation
- ◆ Can offer jacketed shell also



- ◆ Mixer used with Isolator / Glove box
- ◆ Only mixing chamber in controlled atmosphere

Also, contact us for 21 CFR Part 11 compliance, NIR incorporated mixer, Dual drum etc.

Mixer Applications

Industry	Application
Abrasive Powder	For grinding wheel and diamond coring bit manufacturing
Bakery	For mixing of cocoa, wheat flour and additives
Battery	For dry mixing of mobile battery powder ingredients
Cement	Making blend of OPC, Fly ash, Slag, Limestone etc
Coating	For coating of oil layer on rubber bush
Dentistry	Preparation of dental amalgam - to mix metal, liquid mercury and powdered alloy
Diamond Tool	For resin bond as well as industrial diamond powder mixing
Fire crackers	For dry and wet mixing of crackers of Aluminium powder, Sulphur etc
Glass	For incoming sand testing and quality measurement
Homeopathy	For potentization rise using "mother tincture" with ethanol
IOL	For tinting powder dyestuff homogenization
Metal Finishing	For deburring and polishing using media and chemical
Metal Powder	Mixing of iron with copper, cobalt, Nickel and other elements
MIM	For Feedstock pre mix making
Nano particle	For dispersion of material like transition metal oxide, sulphide in organic solvents
Nuclear Fuel	For mixing of Uranium Oxide with binders
Paint	Mixing of Ag Nano powder, epoxy and pigments
Particle size reduction	For milling operation using steel or other balls
Pharmaceuticals	Dry powder Inhalation and formulation of drug
Plastic	Mixing of polycarbonate with Carbon nano tubes
Polymer	For compounding and master batch mixing
Soft drink Concentrates	Mixing of salt, citric acid, colour powder and Sodium Benzoate
Spices	Seasoning mixing from spices such as cinnamon, cloves and ginger

What our Customers say

👍 The mixer was supplied meeting safety norms of PESO (Petroleum and Explosives Safety Organisation, Govt of India). We are working with ZERO accident since 2012.

- World's largest Firecracker manufacturer

👍 The daily use and setting are easy and user friendly. Technology is justified for uniform powder mixing in production results.

- Leading IOL manufacturing company, Hungary

👍 Alphiie is very useful for homogeneous mixing of dry powder having various specific gravity. Ability to blend smaller quantity easily without any additional accessory is best feature.

- IIT Delhi, India

👍 The safety guard, variable time and speed arrangement are good features of mixing machine.

- Leading Additive Manufacturing Company, USA

👍 Highly useful and recommended for testing the content of precious metals in catalyst.

- Europe's leading processor of metal catalysts

👍 Mixer purchased from Hexagon has got excellent response in terms of inbuilt quality and features.

- Leading machinery importer from Japan

Access to Expertise

◆ Top name manufacturers around the world work with Alphiie mixing Technology. We offer free Lab trial to prospective buyers to conduct mixing trials of their application in our mixers.

◆ We would be happy to provide references on request. Hexagon is research partner for universities, drug clinics, Industry associations and powder manufacturers.

◆ Put us to the Test. We would be glad to tell you more.

Global Customer Base



For more details contact us at :-

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