

**HIGH-SHEAR MIXER
GRANULATOR SYSTEMS**

Mixing, Granulating, Drying



- Mycromix
- Pilotmix
- HMG Series

COMPETENCE ALL ALONG THE WAY FOR LABORATORY AND PRODUCTION

Every new product from OYSTAR Hüttlin must set new standards. The latest development of the **H**igh-Shear **M**ixer **G**ranulator (HMG) emphasises this claim. Intense interaction with our customers on one side as well as a close cooperation between OYSTAR Hüttlin and EKATO on the other side resulted in the integrated HMG concept, embodying all the experience of the worldwide specialist for mixing technology with the innovative power of a technology leader in fluid bed process technology. Whether a mixer granulator in combination with a fluid bed dryer, or as a single pot system, OYSTAR Hüttlin gives you a flexible solution from a single source.

INTEGRATION THAT PAYS ON THE BOTTOM LINE.

The flexibility of a stand-alone system or working with proven fluid bed technology guarantees granulation and drying processes with maximum efficiency. In addition to standard granulation, the OYSTAR Hüttlin HMG series covers a broad spectrum

of processes:

- granulating
- melting granulating
- pelletizing
- drying

The synthesis of versatility and integration produces high operating reliability and product quality – and thus the best in economic efficiency.

MIXING IN MOTION

With the EKATO-Gentlewing[®], mixing takes on a whole new dimension. Poor and low-speed mixing, product adhesions on the walls and insufficient discharging are part of the past now. The EKATO-Gentlewing[®] is the practicable solution for applications in which conventional mixing mechanisms can not prevent poor product mixing and product adhesions in the upper part of the container due to its geometry.



The EKATO-Gentlewing[®]

MIXING

Even with slow speed of the Gentlewing, the innovative construction results in excellent, thorough mixing of the product. The EKATO-Gentlewing[®] shows that slight shear forces and homogeneous mixing of the product don't necessarily have to be opposites. The design of the wings as well as a centrally arranged displacement device prevent dead zones. There is no need for a tumbler or swivel mechanism.

GRANULATING

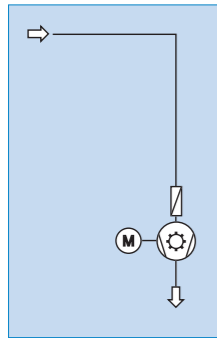
Granulates of the highest quality are produced thanks to the excellent and controlled mixing of the product and an enlarged granulating surface (compared to conventional systems). Different systems for the inlet of the binder liquid do complete the wide range of applications for the HMG. Depending on the product and the binder liquid, the particle size of the granule can be varied and controlled by choosing specific process parameters.

DRYING

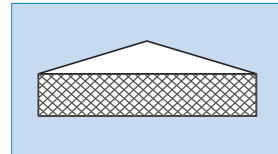
Integration of the HMG without vacuum drying with OYSTAR Hüttlin fluid bed drying frees up interfaces and offers a complete solution. If internal drying by vacuum contact drying (with or without EKATO-Smartflow[®] strip gas feeding) is selected the demands on the mixing mechanism are high. At slow speeds too, the patented wing configuration ensures optimal, effective mixing. The construction guarantees a high internal heat transfer even on the lowest power input. The small shear effect in the mixing mechanism at these low speeds maintains the structure of the product, ensuring high quality for fast drying.



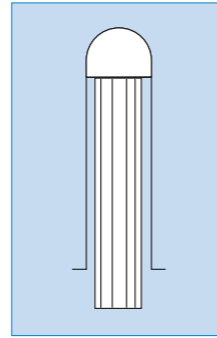
THE MODULAR CONCEPT



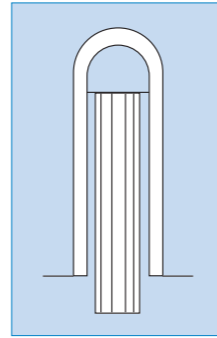
Vacuum pump for filling



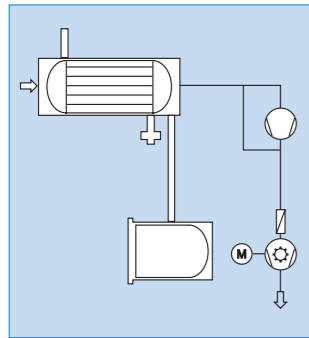
Smartflow



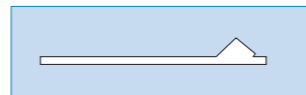
Filter for degassing



Filter for drying

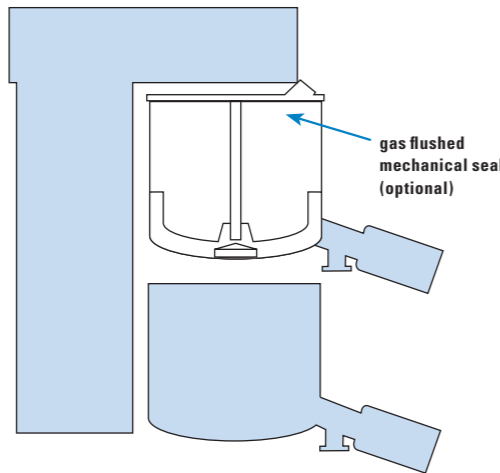


Vacuum pump for filling

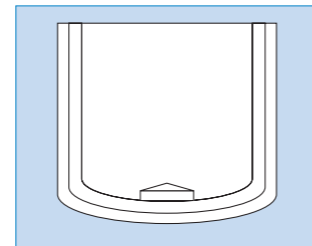


Lid with heating jacket

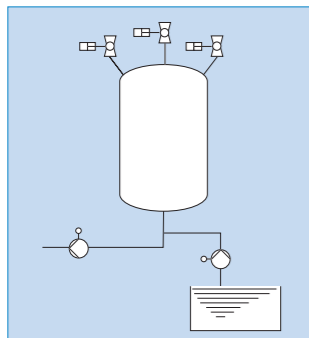
Custom solutions through modular design



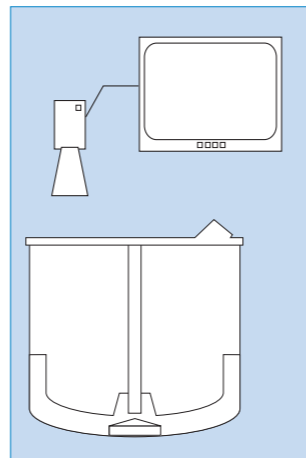
HMG standard with container open / closed



Container with heating/cooling and tight insulation jacket



CIP Station



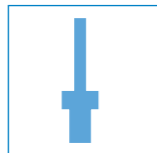
Video system for process monitoring



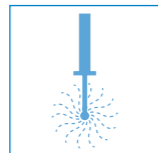
PT 100 in flow-breaker



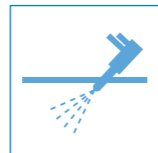
Sampler in container bottom



Venting valve



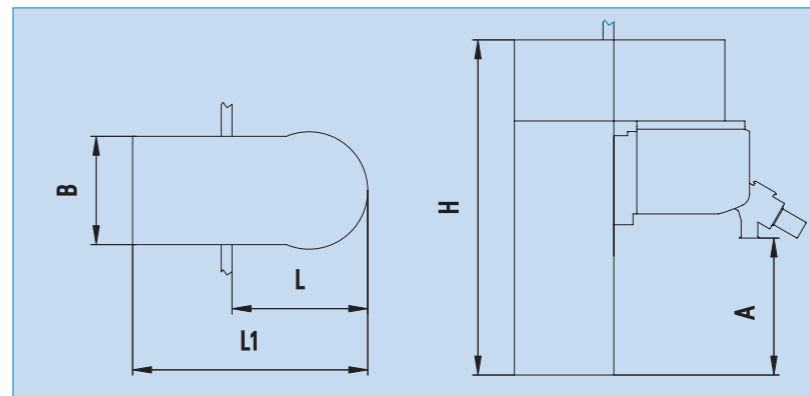
Retractable CIP nozzle

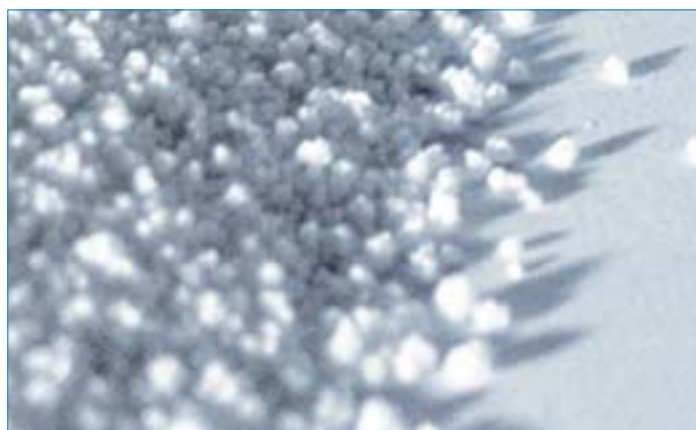


Three-component spray nozzle



SYSTEM TYPE	Mycromix	Pilotmix 25/40	Pilotmix 75/100	HMG 150	HMG 300	HMG 400	HMG 600	HMG 800	HMG 1200	HMG 1800
Container volume (liter)	10	25/40	75/100	150	300	400	600	800	1,200	1,800
Length L (mm)	-	-	-	1,050	1,400	1,400	1,550	1,900	2,000	2,100
Length L1 (mm)	1,050	1,500	1,814	1,750	2,396	2,642	2,853	2,833	3,677	3,730
Width B (mm)	906	700	700	900	992	1,000	1,150	1,290	1,540	1,800
Height H (mm)	1,103	1,800	1,950	2,500	3,035	3,580	3,320	3,600	3,850	4,240
Height A (mm)	430	900	700	1,050	1,289	1,240	1,282	1,300	1,480	1,370
Connected load (kw)	4	8	12	16	27	31	39	49	68	88





MIXING, GRANULATING, DRYING...

HMG high-shear granulator with top drive.

The advantages at a glance:

Mixing Container

- Shaft seals outside the product
- Lifting device for good accessibility and easy inspection
- Complete discharging through the shape of the mixer in the bed area and tight wall distance
- Modular design of the equipment for optimum matching to customer requirements

Mixing Mechanism

Agitator close to the wall, two-wing, matched to the shape of the container. Attachment to the mixer shaft by detachable hub. Gas flushed lip seal, optional gas flushed mechanical seal.

Chopper

Three exchangeable, tulip-shaped chopper blades on the chopper shaft.

Discharging Valve

Pneumatic valve for discharging of granules.

Lifting Device

Drive of the lifting column by a hydraulic cylinder. Lifting device integrated into the machine frame.

Baseframe

The standard version is intended for wall incorporation (clean room / technical area) and is clad entirely in high-grade steel.

Options

Extra devices and functions can be integrated, e.g.:

- Inspection window with light
- Baffle with temperature probe
- Pneumatic filling
- Filters for venting and drying
- Sampler
- Stand-alone housing
- CIP nozzles stationary and retractable
- Different liquid dosing systems
- Container heating / cooling
- Lid heating
- Shaft heating
- Strip gas feed
- CIP-Station
 - Cold water
 - Hot water
 - Deionized water
 - Cleaning agent

OYSTAR Hüttlin can plan the ideal system to match your requirements.

Service

OYSTAR Hüttlin offers extensive service: test equipment on a laboratory and production scale. Expertise for product development. Consulting and engineering, validation and turnkey solutions. Support and service on the job.



Three-component spray nozzle can easily be dismantled



Sampler to control product quality

The fluid supply of the patented three-component spray nozzle is in the production area.

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