

TREFA CONTINU AERATING SYSTEMS B.V.

TREFA is a family owned business and was founded in the early sixties as a manufacturer of aerating machines. Originally in the first years, **TREFA** was a co producer for other companies who marketed these aerating machines. After a few years of manufacturing for others, **TREFA** started its own sales with agents worldwide.

Aerating machines are machines to mix a liquid with a gas in order to create a foam. These machines are used to increase the volume or to increase the product structure. The machines offer benefits in the way of uniform product quality, total production control in terms of density and structure and a continuous flow of fresh aerated product arriving at the filling/depositing end of the production line.

In the food industry these machines are used for: dairy cream, marshmallow, meringue, cake batters and many more.

In the non-food industry you will find our machines in the production of mattresses, curtains, blinds, foam backing for flooring and several medical applications.

Research and development has always been an important strategy at **TREFA**. This resulted many years ago in the development of the famous **TREFA pre-mix chamber**. Another development was the expansion of the product range into complete CIP cleaning pumps and "standalone" CIP cleaning units.

During these years **TREFA** gained the knowledge, engineering capacity and capabilities to take care for handle projects for complete production lines as we have proven in several projects.



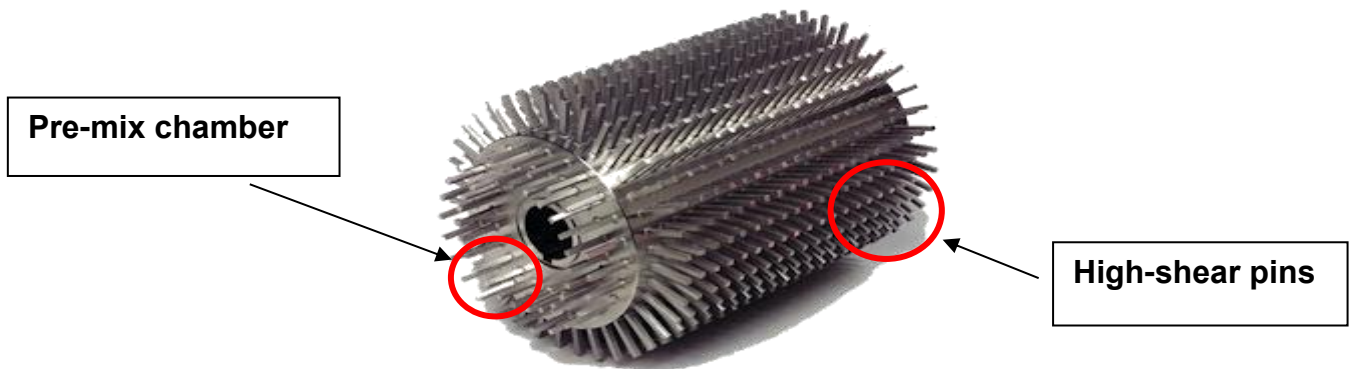
Aerating process description

This description is to describe aerating process on our aerating heads.

For the best possible aeration for your black-out blind, mattresses or backing for your flooring, the Trefa heads are divided into a low shear part and a high shear part.

The low shear part are the axial pins on the front side of the rotor. These pins form the so called pre-mix chamber. This pre-mix chamber is an unique Trefa development.

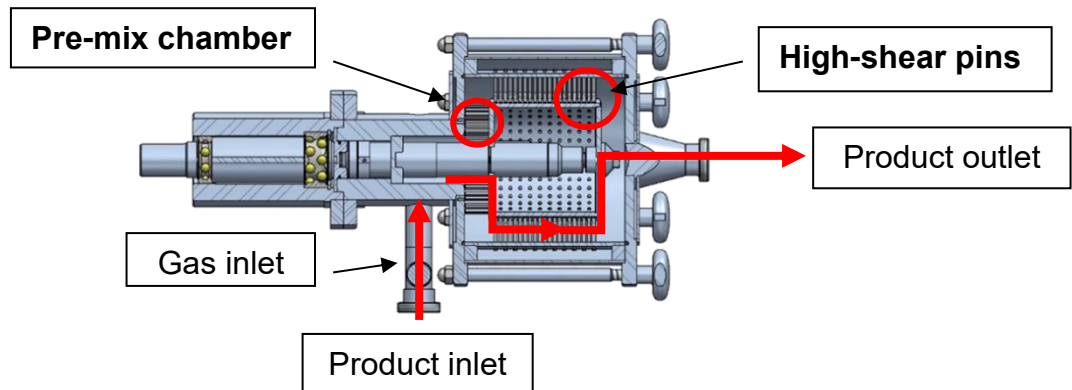
The high-shear part are the radial pins of the aerating head.



The counter pins from the pre-mix chamber and the high-shear pins are located in the rear house and the stator of the aeration head

The effect of using a pre-mix chamber in combination with the high shear pins is a constantly homogeneous foam. This result can be created with 20% - 50% less friction and rotation as the regular system. As an option de Trefa can provided with a mass flow meter, with this option a homogeneous foam with a constantly density is guaranteed.

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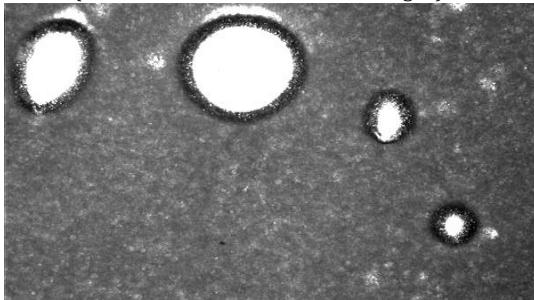


The product with the gas (big bubbles) enters the mixing head trough the product piping. The big bubbles will be cut by passing the pre-mix chamber. By passing the high shear pins the bubbles will be cut into a homogeneous foam.

Below some pictures after passing the different stages:

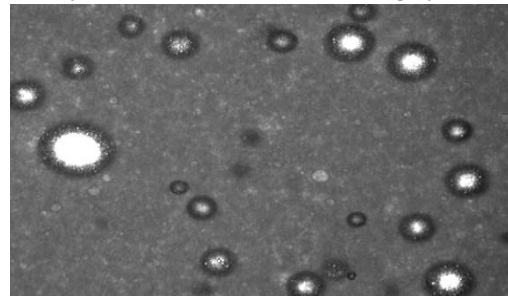
- **picture is after passing the gas injection point**

(102.7 μm - 189.5 μm average 126.43 μm)
(Source: Unilever Research Vlaardingen)



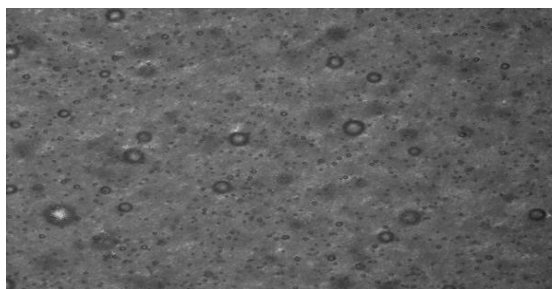
- * **Picture after passing pre-mix chamber**

(19.8 μm - 123.8 μm average 66.96 μm)
(Source: Unilever Research Vlaardingen)



- **Picture at the outlet of the mixing head**

(2.8 μm - 52.6 μm average 7.18 μm)
(Source: Unilever Research Vlaardingen)



Continu Aerators

For your product we can supply the right aerator with the best mixing head in the industry available. Our range includes aerators with capacities from 15 to approximately 1900 kg per hour. The seals we use are highly durable and suitable for example Latex and PVC.

Aerators are constructed to meet the specific needs of the client/product with regard to jacketed pipe work, shaft seals, injection points, Clean-In-Place pumps, etc.

Examples of products in non-food sector are foam coated blinds, backing for carpets, mattresses, medical products, work gloves, ect.

TREFA	T-50	T-100	T-250	T-500	T-750	T-1000	T-2000	T-3000
Capacity motor (kW)	1,5	3,0	5,5	7,5	9,0	11,0	15,0	18,0
Dimensions (ex. Head, not for T-50 and T-100)								
Length (mm)	750	750	1000	1000	1400	1400	1400	1600
Width (mm)	750	750	790	790	1000	1000	1000	1000
Height (mm)	1150	1150	1400	1400	1700	1700	1700	1700
Weigth (mm)	225	250	450	500	750	800	900	950
CAP. (dep. on product !)								
From (kg/h)	15	22	42	52	65	85	125	175
Till (kg/h)	95	125	235	295	365	485	700	980





Trefa machine with buffer tank and CIP unit built on one frame.

