

STEPHAN VACUTHERM® SYSTEM
Economic batch production





picture: V-MC 1200/150 example

SEVERAL PROCESS STEPS IN ONE MACHINE

The STEPHAN Vacutherm® System is a compact process unit. It has been designed mainly for the production of convenience food. Several process steps are combined in one machine. The processing of liquid and solid ingredients can be done as well as incorporation of particles.

The STEPHAN Vacutherm® System has been developed and optimized with the collaboration of convenience food manufacturers. Precisely controlled processes result in high product quality and repeatability. The highly flexible system produces a wide range of food products.

ADVANTAGES FOR YOUR PRODUCTION

- ✓ STABLE EMULSIONS
- ✓ SHORT BATCH TIMES
- ✓ GENTLE AS WELL AS EFFECTIVE HEATING
- ✓ CONSTANT SPECIFIC WEIGHT
- ✓ OPTIMAL POWDER DISPERSING
- ✓ HOMOGENEOUS MIXING
- ✓ OXIDATION IS AVOIDED
- ✓ CONSTANT PRODUCT QUALITY
- ✓ GOOD CLEANABILITY
- ✓ EASY TO OPERATE
- ✓ EXPANDABLE



APPLICATIONS (SOME EXAMPLES):

- /// MAYONNAISE
- /// KETCHUP
- /// DRESSINGS, DIPS
- /// BABY FOOD
- /// CLASSICAL SAUCES
- /// PASTA SAUCES
- /// SOUPS
- /// FRUIT PREPARATIONS
- /// PROCESSED CHEESE

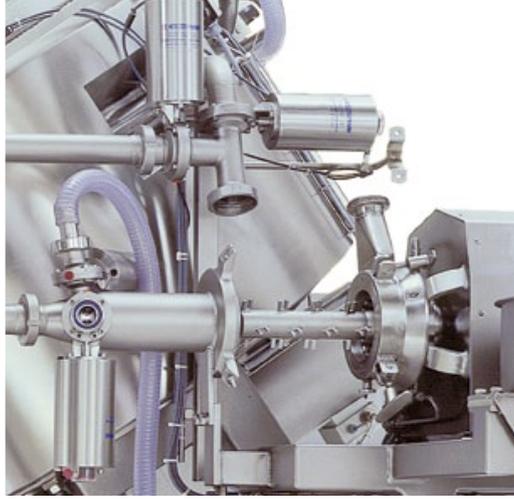
PROCESSES:

- /// MIXING
- /// EMULSIFYING
- /// DISPERSING
- /// SIZE REDUCTION
- /// DIRECT + INDIRECT HEATING
- /// DEAERATING (VACUUM)
- /// COOLING

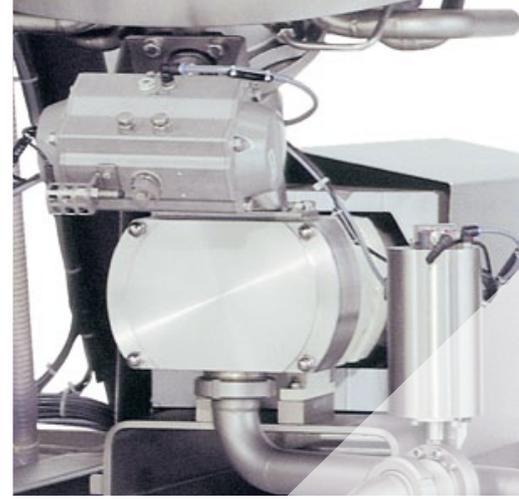




Processing vessel



STEPAN Microcut®



Recirculation and discharge pump

DESIGN OF THE STEPHAN VACUTHERM® SYSTEM

The compact system combines several process steps in one machine. These are mixing, dispersing, size reduction, heating, cooling, pasteurizing, deaerating and emulsifying. The processing of liquid and solid ingredients can be done as well as the incorporation of particles. Furthermore products can be processed hot as well as cold.

The base components of the process system are a tilted, vacuum tight mixing vessel with integrated mixing arm and an external homogenizer (rotor-stator). The specific geometry of the vessel and the mixing arm allow for effective and gentle mixing of the ingredients at the same time. The external homogenizer is used for emulsification and size reduction. A pump connected at the lowest point of the vessel circulates the product through the homogenizer and back into the vessel.

The homogenizer, a rotor-stator-system, can be used for a wide range of applications. Besides homogenizing

liquids it can be used for dispersing powders into liquids. When emulsification and homogenization is finished particles can be added into the vessel. They are blended gently with the liquid by the mixing arm. The product can be heated up either by direct steam or indirectly through the double jacket of the system. The recirculation pump can be operated as a discharge pump as well. An integrated vacuum system completes the system. It consists of a vacuum pump and a control unit. The ingredients can be fed into the system either by via suction pressure or by special metering systems.

The STEPHAN Vacutherm® System can be operated manually as well as automatically. Beside machine operation, recipe management and process flow data are included in the automation system. Parameters such as metering, mixing, emulsifying and homogenizing times, temperature curves, vacuum level as well as discharge times are controlled and regulated.

STEPHAN MACHINERY PROVIDES TURN-KEY PROCESSING LINES

STEPHAN processing systems can be completed by up-stream and down-stream components to turn-key processing lines. The STEPHAN specialist team provides tailor-made solutions.

In the following you will find some examples for STEPHAN Supplementary Modules:

STEPHAN Drum Discharging Systems

ADVANTAGES:

- ✓ MINIMIZED RESIDUAL QUANTITIES IN THE DRUM
- ✓ EASY HANDLING
- ✓ COMPACT DESIGN
- ✓ EASY TO CLEAN
- ✓ INDIVIDUAL ADAPTION TO THE ENTIRE PLANT POSSIBLE



STEPHAN Container Stations

ADVANTAGES:

- ✓ COMPACT DESIGN AND LOW SPACE REQUIREMENT
- ✓ EASY HANDLING AND OPERATION
- ✓ OPTIMAL PERFORMANCE DUE TO LIFTED CONTAINER POSITION
- ✓ EASY TO CLEAN



STEPHAN CIP-Systems

ADVANTAGES:

- ✓ OPTIMIZED CLEANING TIMES
- ✓ MINIMIZED DOWN TIMES
- ✓ OPTIMIZED CHEMICAL AND WATER USAGE





TECHNICAL DATA

Type		V-MC 400/15	V-MC 800/150	V-MC 1200/150
Batch size (l)	approx.	400	800	1200
Capacity (depending on product) (l/h)	approx.	1600	3200	4800
Homogenizer type (Rotor-Stator)	approx.	MCH 15 VM	MCH 150 VM	MCH 150 VM
Energy requirement (kW)	approx.	29	48	55
Steam requirement (8 barg) (kg/h)	approx.	430	900	1620
Cooling water (double jacket, T = 15 °C) (l/h)	approx.	7000	10000	15000
Cooling water for vacuum pump (l/h)	approx.	120	240	240
Recipe water requirement (l/h)	approx.	6000	12000	18000

The machines shown are for illustrative purposes only. Actual machine construction may vary by specification.

TEST FACILITIES

The test facilities at our headquarters in Hameln (Germany) are available for feasibility studies and demonstration runs of the STEPHAN Vacutherm® System.

Stephan Machinery

WORLD WIDE AT YOUR DISPOSAL

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