



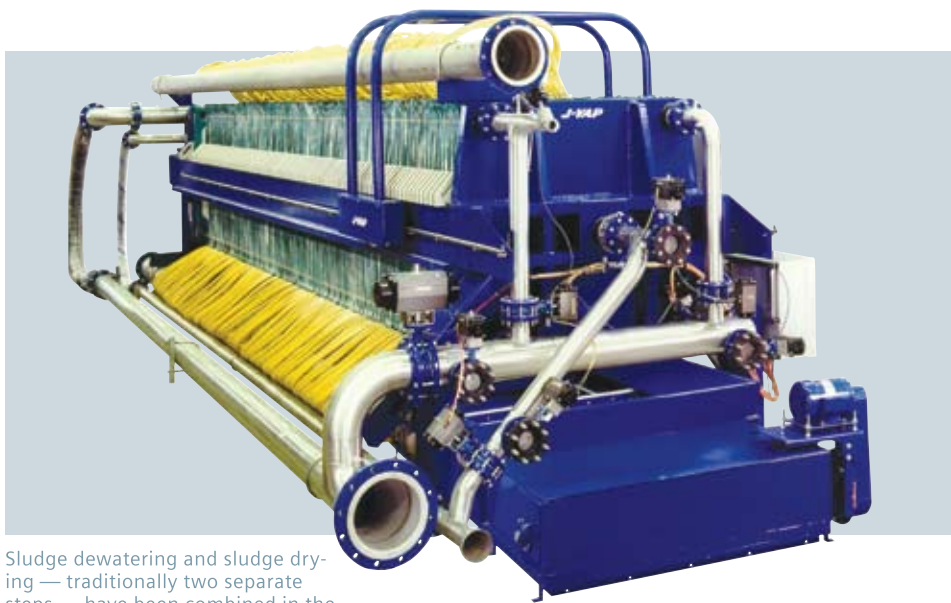
# J-Vap<sup>®</sup> System

Dewatering/Drying Systems

Water Technologies

**SIEMENS**

# The J-Vap® System – Ultimate Moisture and Weight Reduction



Sludge dewatering and sludge drying — traditionally two separate steps — have been combined in the J-Vap® system.



The J-Vap® system G4 heating plate combines the durability and light weight of polypropylene with the thermal efficiency of stainless steel.

## Achieve Up to 99% Solids

The J-Vap® dewatering/drying system is an advanced filter press system coupling a specially designed diaphragm filter press and unique vacuum/evaporation technology. The J-Vap® system can cost-effectively achieve up to 99% solids in one step. With the J-Vap® system, you can operate to the desired filter cake dryness for your specific process, achieving consistent moisture reduction levels, easily accommodating process changes.

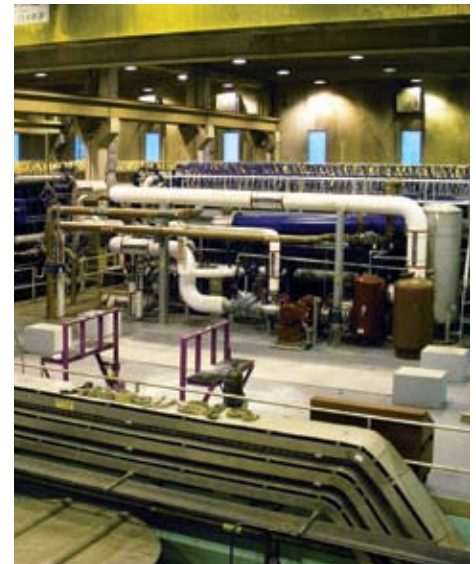
Despite the complexity of the vacuum/evaporation process, the J-Vap® system is an easy system to operate and maintain, requiring minimal manpower or auxiliary equipment. The system can be engineered to utilize waste heat

from other areas of the plant, and can contribute to an energy re-use program. This low energy, low emissions process is also suitable for green installations, where sustainable design, co-generation and a minimal carbon footprint are priorities.

Siemens has worldwide research and development experience in process technologies. We have the largest range of offerings and installations of one-step dewatering and drying with years of experience in the technology.

### ISO 9001:2000 QMS

The quality management system governing the manufacture of the J-Vap® system is ISO 9001:2000 certified.



The J-Vap® system delivers efficient dewatering and drying in many applications, including large scale municipal systems.

### Features and Benefits

- Low temperature drying ensures safe operation
- One step process — eliminates multiple equipment and reduces material handling
- Select desired moisture reduction with repeatable results — up to 99% solids for some products
- Ideal for the batch chemical process industries
- Low temperature drying avoids solids degradation that may occur with high temperature processes
- Reduce disposal costs of waste streams through significant weight and volume reduction
- In municipal waste streams, provides pathogen reduction, required for class A sludge production
- Totally enclosed for lower emissions, improved air quality
- Lower energy use than thermal drying and low emissions create a smaller carbon footprint
- Site-specific engineering considers your energy use or re-use in installation



The patent-pending J-Vap® system is engineered to your specific application, and is easily operated through a touch screen interface.



## J-Vap® System Technology Offers:

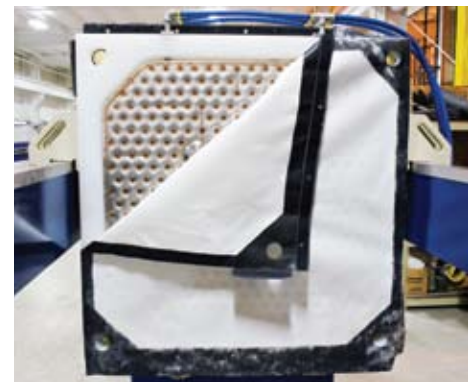
- Lower temperatures for safer operation
- Selectable moisture reduction
- Reduced handling and disposal costs

## Unique G4 Plate Pack Delivers Higher Heat Transfer

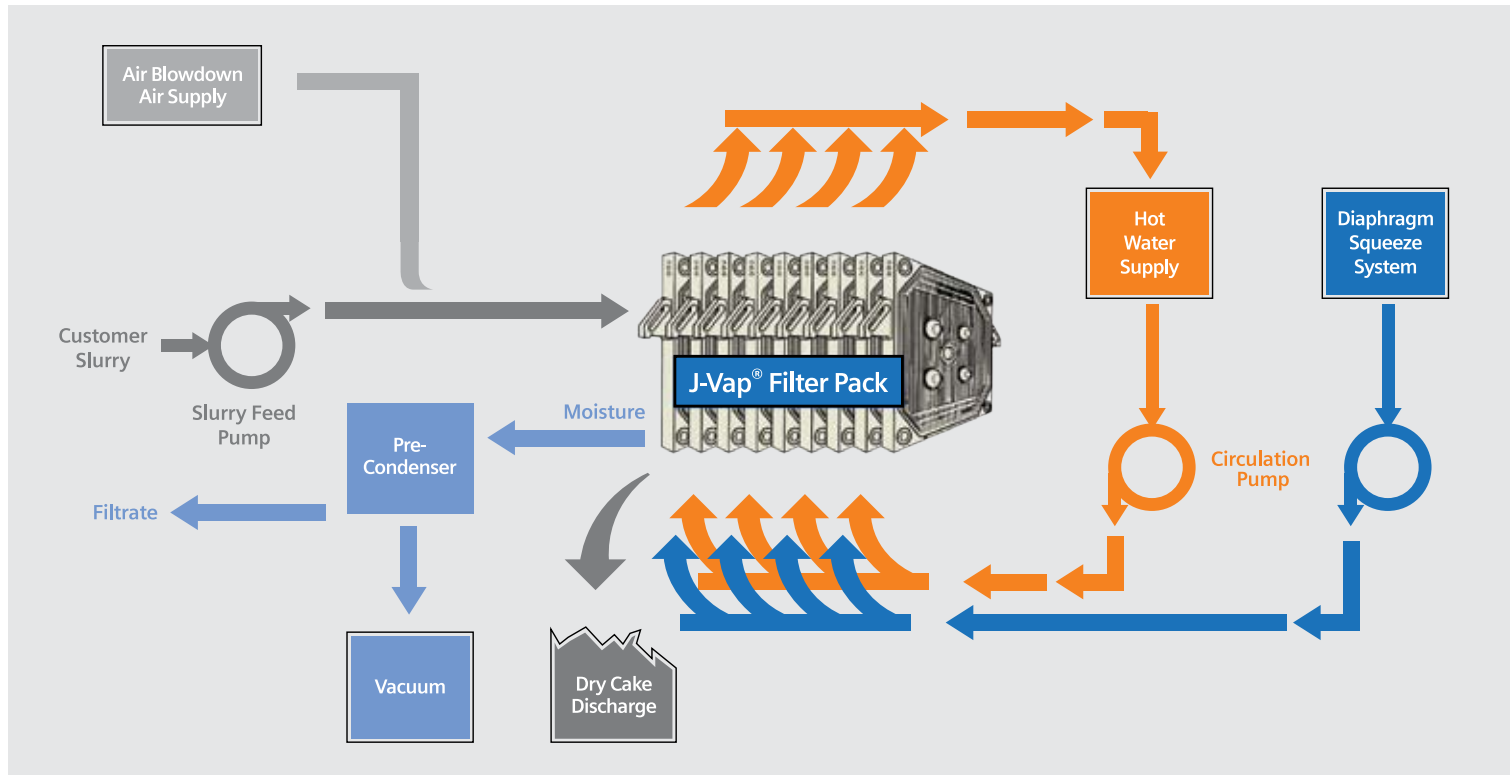
The J-Vap® system's mixed pack configuration offers the best of both worlds: thermoplastic diaphragm filter plates providing maximum mechanical moisture removal from the filter cake and the revolutionary G4 heating plate with its high efficiency heat transfer capabilities. The J-Vap® system G4 heating plate combines the durability and light weight of polypropylene with the thermal efficiency of stainless steel. The patent-pending heating plate technology maximizes the heat transfer surface while still retaining the ability to drain moisture away from the filter cake. The unique composite plate construction offers a coefficient of heat transfer that is over 175 times higher than a plate made of 100% thermoplastics.

### Features

- High heat transfer
- Lighter weight vs. solid metal heating plates
- Diaphragm squeeze with either ambient water, air or atmospheric pressure
- Re-buildable G4 heating plates
- Long plate life

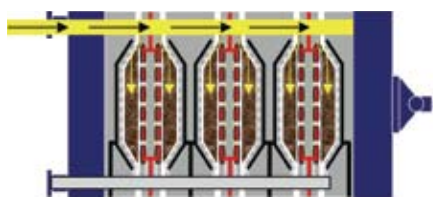


G4 heating plates offer maximum heat transfer and are light weight compared to solid metal.

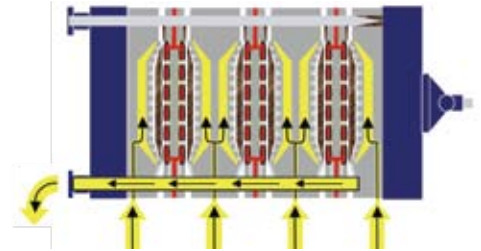


The J-Vap® system begins with the basic concept of a J-Press® mixed pack diaphragm squeeze filter press. Slurry is pumped into the filter cake chambers where the solids are captured between the filter plates. Once the chambers are filled with solids, diaphragms are inflated, mechanically squeezing out the free liquids in the filter cake. The cake solids, which are relatively dry by conventional standards, still retain 60 to 75% moisture. Here, where a regular filter press cycle would normally end, the J-Vap® system's unique patent-pending technology kicks in.

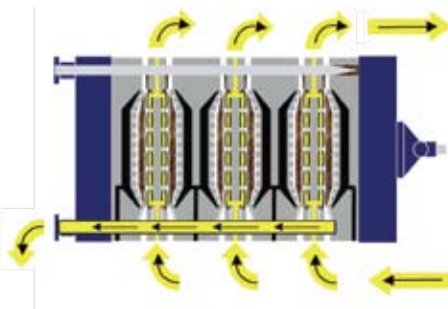
During the next phase, heated and pressurized water is circulated through the heat transfer filter plates. A vacuum is then pulled on the cake side of the filter cake chambers, lowering the boiling point of the remaining moisture in the cake and causing it to evaporate at temperatures as low as 100°F (38°C). Once the drying cycle is complete, the press is opened, the filter plates are separated and the dried cake is discharged from the chambers — up to 99% moisture free! This dramatic performance translates quickly into reduced handling or disposal costs, delivering a faster return on your investment.



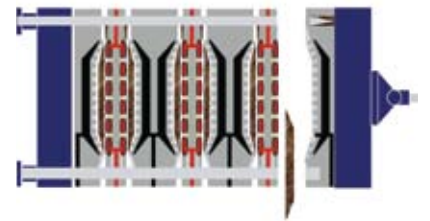
Feed Slurry



Diaphragm Squeeze

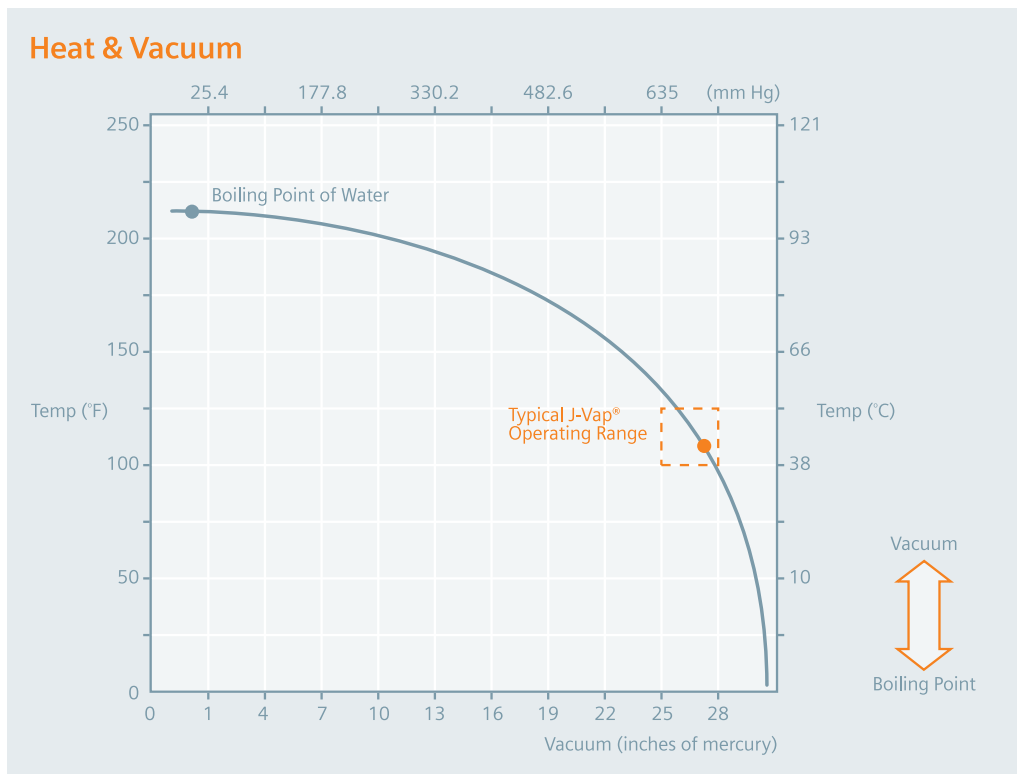


Heat and Vacuum



Dry Cake Discharge

# Lower Operating Temperature



As vacuum increases, the boiling point of water is lowered. Low temperature drying avoids potential solids degradation that may occur with high temperature processes.

## Wide Range of Applications

The ability to produce high solids from difficult to dewater sludges and slurries, and to do so at a selectable dryness level, makes the J-Vap® system unique among dewatering/drying solutions. The J-Vap system has the ability to meet Class A sludge as defined by the EPA Part 503 regulations. What's more, the J-Vap system can produce consistent dryness from cycle to cycle without product degradation. Applications for the J-Vap system include, but are not limited to:

- Municipal water and wastewater sludges
- Industrial process slurries
- Industrial wastewater and sludge
- Food and beverage process and wastewater
- Ceramics
- Mining and reclamation of precious metals
- Processing of pharmaceutical and chemical products
- Processing of pigments and dyestuffs



Controlled, consistent dryness makes the J-Vap® system ideal for processing products such as chemicals and pigments.

# Aftermarket Services



## An Informed Decision is the Best Decision

Siemens maintains a fully-staffed, state-of-the-art laboratory for determining the most effective liquid/solids separation techniques for your specific application. Capabilities range from feasibility testing of your materials to providing portable pilot units for on-site testing. This customer-focused resource produces tangible results: we can determine the most effective feed pressures, fill times, filter media and sludge conditioning. In addition to ensuring a better informed equipment purchase, this valuable service is also available to help you maintain maximum performance of your J-Vap® system.

## Preventative Maintenance Services

We can customize a cost-effective program for your specific equipment, application and environment that translates into lower maintenance costs and years of worry-free operation.

## Parts and Service

Our professional service staff can quickly and reliably answer your technical questions and troubleshoot your specific requirements, schedule parts shipments, and arrange for an on-site service call. Our factory-trained and qualified service engineers travel throughout the world to help ensure equipment runs efficiently. From basic maintenance to complex Program Logic Control (PLC) interfaces and beyond, we have the experience and capability.

## Refurbishment Services

We can provide a partial or complete rehabilitation of your equipment to a warranted like-new condition, at your site or ours.

## Aftermarket Services

- Factory-based customer service support
- Expert technical consulting
- Same-day shipment on many service and spare parts
- Worldwide repair and preventative maintenance services
- Emergency support services
- Equipment retrofits, upgrades and refurbishments
- Training
- Testing, evaluative and customized services

For more information on our Aftermarket Services, call 800.245.3006.



Portable units and on-site testing are used to determine the most effective process.

For more information contact:

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[www.siemens.com/jvap](http://www.siemens.com/jvap)

The information provided in this brochure contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of the contract.

Patents pending in the U.S. and PCT (Pub. No. WO2008/100479A1). Some applications of the J-Vap® System are also covered by U.S. Patent No. 5,558,773.

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