

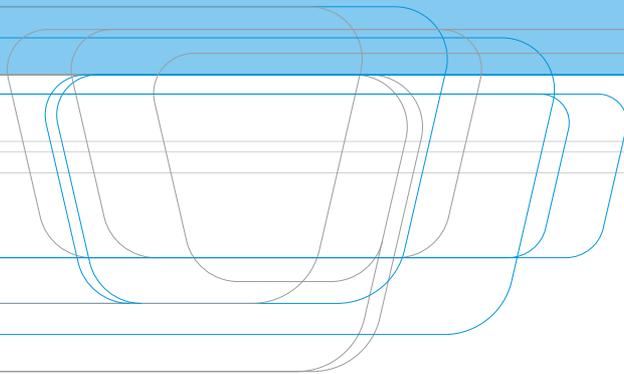


Senking Universal

The versatile continuous batch washer that reuses energy and water internally



Universal L-15



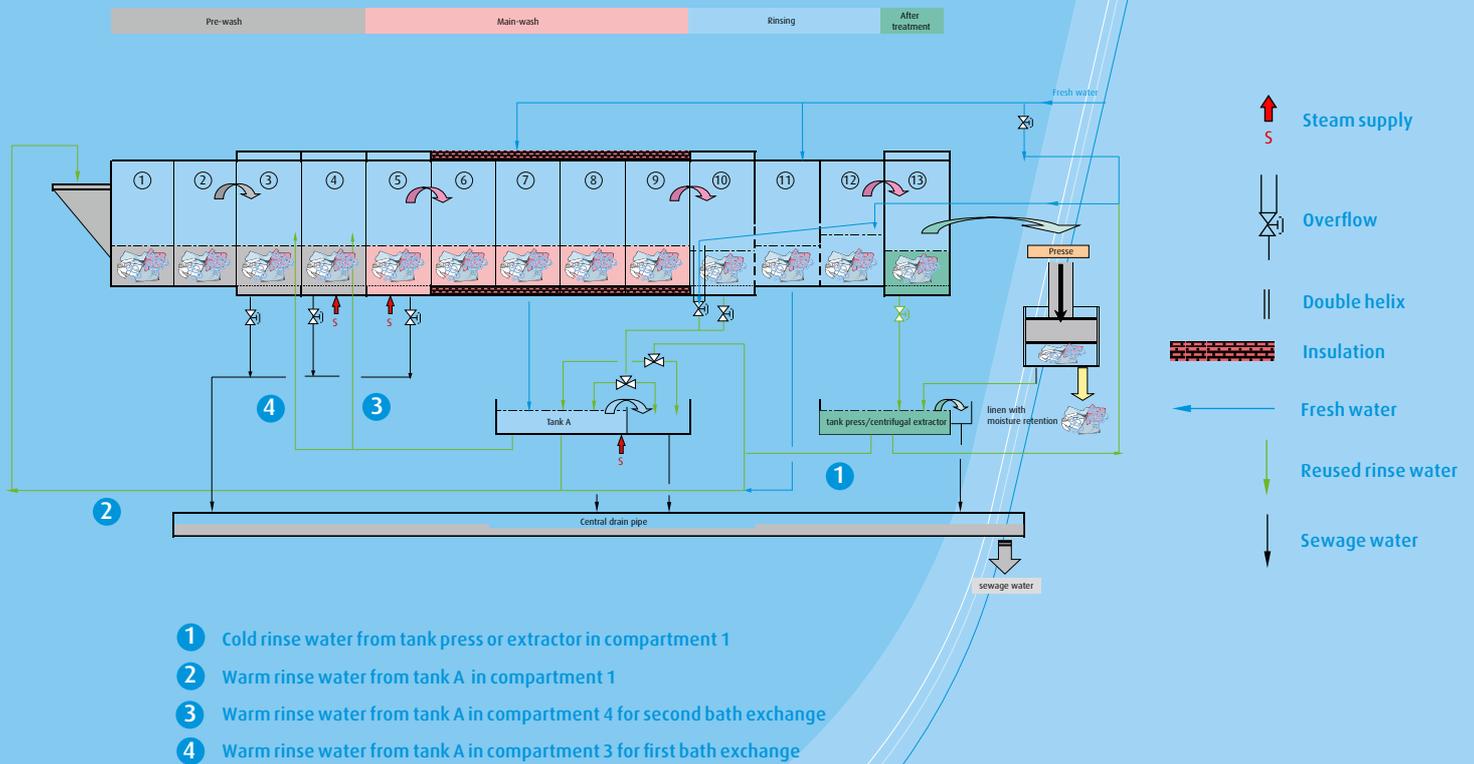
Senking Universal

The versatile continuous batch washer that reuses energy and water internally

JENSEN revolutionised the wash tunnel market when it introduced the Senking Universal Continuous Batch Washer in 1996. Right up to now, the Universal still offers previously unknown flexibility in the processing of the greatest variety of types of linen while keeping consumption at extremely low levels. This combination of efficiency and productivity has been continuously optimised in recent years through consistent developments, with the result that even today the Universal can lay claim to a leading position in the world market. Almost 900 Universal type wash tunnels sold (2011 figures) are ample proof of this.

The wash process

In the basic configuration of the Universal washing tunnel, washing is done in standing baths in the prewash and main wash areas (bath exchange process) and rinsing is in counterflow*. JENSEN was the first manufacturer in the world to develop this process and



bring it to market. Every batch stays in its own bath until the start of the rinse zone and has its own individually programmed quantity of detergent, process water temperature, bath level etc. In the basic version of the Universal the rinse process uses a counterflow*. A patented rinse process ensures that consumption of fresh water is reduced by up to 10%. A drain valve in the first rinse compartment is controlled in such a way that it opens several times and the process water is very rapidly diluted, thus producing an excellent rinse effect and an outstanding lint removal while using a minimal amount of rinse water. For special applications, such as frequent changes in colour during the sequence of batches, the rinse zone can also be made (as an option) with completely separate baths so that rinsing also uses a bath exchange process*. This kind of rinse has already been practised successfully in Senking machines for more than 20 years in their „Combi“ version. As another option, the Universal can be fitted with a device for using

excess water from the press/centrifuge in order to save approximately 40% fresh water. In the posttreatment zone the Universal has a double drum with an automatic drain valve that reduces the level in the bath, depending on the program, and this again greatly reduces the consumption of washing additives (acids, starch, softeners etc.). The process water that is drained off is, of course, recovered in a special tank in the wash tunnel.

Wash action

An important feature of the Universal is its highly efficient wash action and its reliable transport behavior. Compared with other wash tunnels, which require considerably larger drum diameters, the Universal makes far more efficient use of the drum diameter owing to its patented eccentric Archimedian helix, and enables high drop curves for outstanding wash action. This is reinforced even further by the washboard-type shape of the helix, which is also patented.

An optimised drum design ensures an outstanding mechanical action and the most reliable batch transfer. In addition, the circumferential speed of the drum and thus the mechanical action can be varied using the frequency-controlled drive motor.

Consumption

A tried and tested wash action with a superior reuse technique has enabled the consumption of resources by the Universal wash tunnel to be considerably reduced. The process water is recovered from various zones and fed to a number of tanks. A perfect water reclaim system also allows heat and detergents to be recovered from the process water as it flows away. Detergents and water can be weighed out for re-use in the prewash and main wash cycles, when the process water is very precisely measured and controlled using inductive flow meters.

The enormous versatility of Universal wash tunnels means that a great variety of wash

* The models Universal XL and MaxiLine are specified with a bath exchange rinse mode in basic configuration!



Drum bearings



Toothed chain drive with automatic lubrication system



Wide overflow boxes for efficient lint removal.

processes can be used to meet individual requirements. It goes without saying that this also includes low-temperature cycles. There are also various optional packages that allow the Universal to be adapted to suit special requirements such as the washing of work wear, dust mats and so on. The Universal is available with 5-20 compartments, depending on batch sizes.

Design of the drum

The heart of the Universal is its drum, with a (patented) eccentric Archimedian helix that makes the fullest possible use of the drum volume and thus produces a highly efficient wash action while securely transporting the linen batch. This unique design, plus the fact that the helix is fully welded to the inner drum throughout (with no vertical bulkheads), gives the drum an extraordinary degree of strength and stability. The Universal therefore does not need any oversized drum plates, with their comparatively high weight and

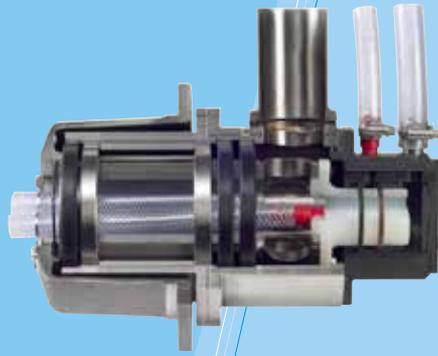
consequently greater consumption of drive power. The eccentric design of the helix makes far better use of the drum volume than is the case in other machines with drums of similar diameter and depth. Deep beaters ensure that the linen and process water are thoroughly mixed together and the outstanding washing action is made even more efficient by the washboard-like profile of the helix. The drum is driven by a frequency-controlled geared motor and an extremely robust and durable toothed chain. This design of drive has proved reliable a thousand times over under the most severe conditions.

The frequency-controlled drive is very smooth-running and protects all the drive components. An automatic electronically monitored system ensures that the chain is always perfectly lubricated. Specially designed drain valves on the double drums ensure that solid matter such as sand or metal swarf from work wear etc. is always removed

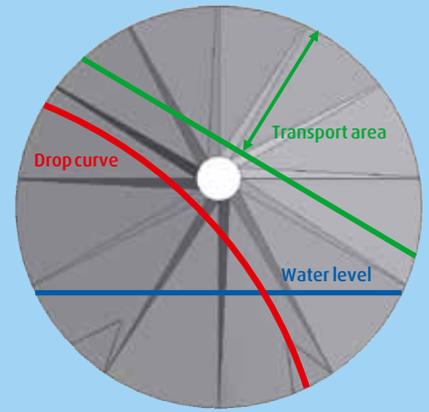
from the compartment and damage due to catalysis is safely avoided. Generously designed rapid drain outlets with ball valves that open up the entire opening ensure that drain times are very short, bath exchange is efficient and there is no risk of lint accumulating. The specially designed wash beaters assist rapid bath exchange and the efficient transport of the linen batch. All the drain valves also have clamp fasteners for ease of maintenance and can be opened without tools for inspection purposes. The correct function of the drain valve can be checked through an inspection window in the discharge nozzle. Specially designed steam nozzles are ideally adapted to the drum geometry. Their position on the bottom of the double drums means that the steam very rapidly enters the process water and ensures very short heating stages even when cycle times are short and a perfect heat distribution within the batch. A time loss like on conventional machines with simple heating boxes below the drum is avoided.



Drain valve with quick-release fastener and sight glass



Rotating head (section)



Archimedian helix

To adapt to different types of linen, and to optimise media consumption even further, the Universal can be fitted with the following options from our range:

- Pre-rinsing with excess press/centrifuge process water to reduce fresh water consumption
- Integral „Spiraliser“ heat exchanger to preheat fresh water
- Version for steam-free operation (JENSEN CleanTech) that includes a gas-operated heating system
- Additional lint filter combined with specially designed lint catch boxes on the double drums.
- Senking AutoFilter (fully automatically controlled disc filter with regeneration function integrated in the wash tunnel, with stainless steel housing)
- modular cascade filter system
- Automatically controlled cooldown and 4 heightened wash beaters e.g. for processing polycotton uniforms

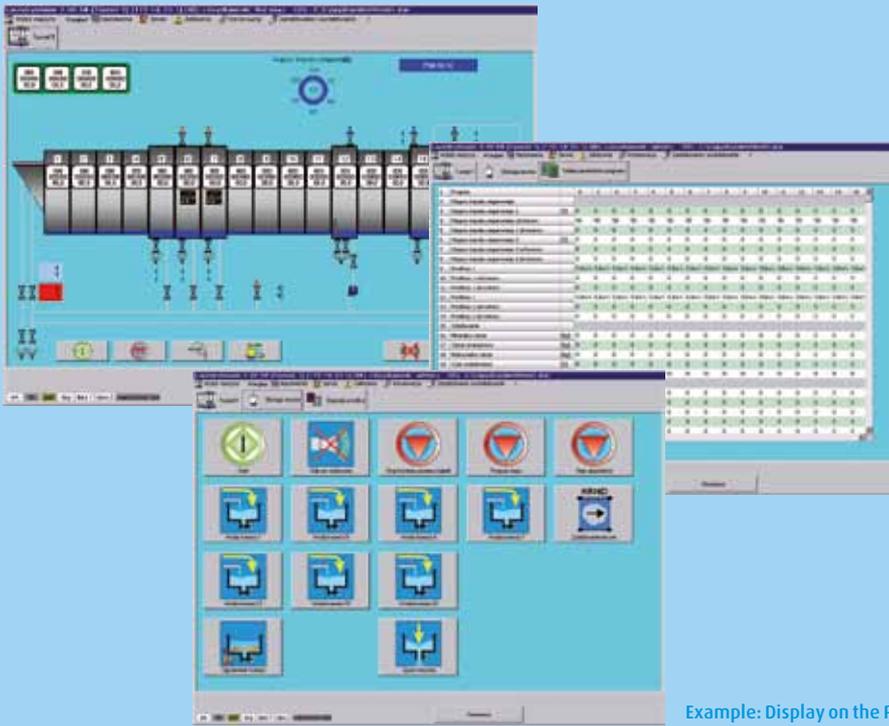
- Specially designed recovery tanks for processing e.g. dust mats
- automatic sliding door for loading chute (e.g. for high pre-wash temperatures)

Modular control design

The recently developed machine control provides the user with a convenient operating interface, together with a high degree of efficiency and safety. Operation is displayed and controlled from an industrial PC with a touch screen. The Interbus design of the modular control enables the entire group of machines to be networked together so that every machine in a full wash line can be viewed and operated from every industrial PC. With conventional controllers, if one operator terminal fails it usually affects the whole system and causes a stoppage. The new control system has the unique advantage that the wash system can then continue to operate from another PC in the network, thus providing secure operation and avoiding a production failure. If, even so, a program-

ming error or data loss occurs, the settings that have been previously saved on a flash card can quickly and easily be restored. Naturally the whole washroom system can be maintained remotely by JENSEN customer service via an Ethernet interface. The new control system offers you the following advantages:

- The whole of the wash process is displayed in real time
- Individual configuration of up to 100 wash programs
- The highest possible standard of security against production failure and data loss
- Allocation of individual access rights for up to 40 users provide a high degree of protection against programming errors or misuse
- Uniform control hardware on all plant components
- Factory customer service performs remote servicing of the whole system via Ethernet
- Convenience of operation thanks to the Windows-based display and the same tabular structure on the individual machines



Example: Display on the PC touch screen



- Quick and simple data backup on modern storage media
- Clear production statistics
- Detailed maintenance program offering the ability to generate a maintenance schedule for individual periods of time in the future.

Installation

JENSEN is pleased to assist you in planning your laundry providing excellent consulting, layouts and technical data. Authorized JENSEN distributors or JENSEN engineers should carry out the installation to ensure the correct performance.

Service

In addition JENSEN provides an extraordinary after sales service through a worldwide network of highly qualified Sales and Service Centers and distributors, all with their own maintenance and spare parts services.

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JENSEN provides a complete range of heavy-duty equipment for the laundry industry, delivered and installed according to your specifications. Please do not hesitate to contact us for further advice and information, or visit www.jensen-group.com

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