

# Recent Developments in Tunnel Technology May Offer Laundries New Options and Savings

By Norvin L. Pellerin

NEW ORLEANS—Recent developments now bring the benefits of tunnel washing to many smaller laundries in the 500 to 1500 pounds-per-hour range.

The same can be said for plants which use large tunnels to process linens and washer/extractors for small lots and specialty items.

Cost savings and production flow advantages have now gained worldwide



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acceptance for tunnel washers, especially when the workload is more than 1500 pounds per hour. Below this volume level, however, work was normally done in washer-extractors. That's the way it's always been. But it's changing.

## SMALL-BATCH TECHNOLOGY

Several manufacturers now offer tunnels which process smaller batches, usually in the 50- to 75-pound range, some even smaller. These machines are naturally better suited to lower production levels. Some manufacturers downsize their tunnel washer by decreasing both the length and diameter of the individual wash compartment. Smaller diameters can reduce the washing action.

Other manufacturers, however, change only the length of the wash module, leaving the diameter the same as their larger 110-pound units. This allows them to maintain the high mechanical action of the larger machines. Thus, reducing the batch size does not compromise the washing function.

## USING FEWER MODULES

In other cases, reduced production can be achieved economically by merely using

fewer full-size (110-pound) modules. With earlier tunnels, reducing the number of modules eventually reached a minimum level (somewhere between six and nine modules, depending on the type of goods and transfer employed by the washer), at which the washing process simply could not be sub-divided into enough properly sized zones.

However, significant developments have helped to overcome this problem. New techniques allow using individual modules for multiple functions—such as both sour and rinsing, or rinsing and washing.

To accomplish this, a double drum machine, with an absolute bath separation between each module or chamber, is required. By piping the counterflow outside the fixed drum, appropriate valving can direct the water flow to *either* the preceding module (counterflow) or the drain. This Flow/No Flow system allows a module to be used for one function early in the transfer cycle and another function later.

Thus, one module can do the work of two. In top-transfer washers—which by their nature require fewer modules because of enhanced dilution—efficient machines can be offered with the Flow/No Flow concept using as few as three modules.

## CENTRIFUGAL EXTRACTION

With lower production rates, we are normally talking much longer transfer rates, probably in the four-to-six minute range, or longer. This suddenly allows the use of an automated centrifugal extractor, which, because of acceleration and deceleration time, cannot operate as quickly as an extraction press, which typically can cycle as fast as every 1.5 minutes. (However, with poly/cotton goods, a centrifugal extractor can achieve cycle times as low as 3.5 minutes, or about 17 loads per hour.)

The centrifugal extractor offers two distinct advantages to plants with lower production volume.

First, it is usually less expensive than the typical extraction press.

Second, the centrifugal extractor can remove water more gently and efficiently from some fabrics. For instance, 100 percent polyester textiles—including napery and the new mono-filament barrier cloth for operating rooms—can usually be extracted much more efficiently in a centrifugal extractor. Many polyester-blended garments are processed more efficiently in a centrifugal extractor, too. And mats are always done more efficiently in a centrifu-

gal extractor.

In the past, it usually has been necessary to include some washer/extractors in a tunnel-equipped plant, just to process these special goods. With a centrifugal extractor, *all* these items can be done in a tunnel washer—saving the added investment in washer-extractors. That helps bring the capital cost into line with the small user's needs.

## SPECIAL NEEDS OF LAUNDRIES

In some cases, it may be that a smaller tunnel washer system is simply the only way to accomplish the task.

For instance, space requirements may necessitate a tunnel, which needs much less floor area to produce equal amounts of linen. Or a tunnel washer may be the only way for a particular hospital to effectively meet a staph barrier requirement, while maintaining a proper work flow.

Other criteria, such as limited water availability or drainage capacity, may force laundry managers to use a small tunnel where otherwise they would use washer/extractors.

Sometimes, too, it is necessary to design for future growth (such as a planned second tower on a hotel or hospital), and purchase a small tunnel washer now with plans to expand it later. This locks in the ability to achieve the labor, water and fuel savings a batch washer offers, so it is available when the laundry does go to higher production levels. (Remember, only some of the batch washers now available are modular in design and thus can be readily extended later. Others are not.)

## AN INCREMENTAL INVESTMENT

Where some type of washing equipment is going to be purchased anyway, a smaller tunnel can often make the greatest sense. In these instances, a batch washer's operating cost savings do not have to be weighed against its total cost—but only against the added cost of a tunnel over washer/extractors. And this may not be as great as laundry managers might believe, especially considering just the purchase of a tunnel washer and an extractor (i.e., not an automated dryer system). Extracted work can be carried manually to small dryers.

Furthermore, in new construction, total installed cost must be considered. Unlike washer/extractors, a tunnel washer

needs only small pipes because of lower water and steam usage. And the water runs continuously, not in the fast fills washer/ extractors require. Often, costly water-heating systems can be completely eliminated (water is heated by steam injection in the tunnel washer itself). No heavy foundations are needed, either. And laundry managers might be surprised how little more a small tunnel costs compared to washer/extractors.

It's well known that some *large* tunnels have proven they can wash well, wash

quickly, and streamline production flow, while using less water, fuel, and labor than washer/extractors. With the development of small tunnel systems—including centrifugal extractors—the production requirements have dropped a few notches for many types of laundries.

Those laundry managers who looked at purchasing a tunnel several years ago and decided that their laundry was too small—or those managers who have a big tunnel but use washer/extractors for odd lots and specialty work—might find it's

well worth taking a serious look at replacing their washer/extractors with a small tunnel.

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# Laundry News

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B22SL92013/92344