



GIRBAU
INDUSTRIAL™

TBS-50
BATCH WASHER
Continuous batch washing system



CONTINUOUS BATCH WASHER
KEY TO PRODUCTIVITY, EFFICIENCY AND RESULTS

TBS-50



The TBS-50 Batch Washer processes over 3,000 pounds of laundry per hour—offering high-volume laundries a modular, adaptable laundry solution that integrates seamlessly with the SPR-50 Press and ST-100 Dryer. The automated batch washer brings the ultimate in productivity, efficiency and ease of use to laundries. Thanks to a convenient dual-drum modular design, the TBS-50 is less costly and simpler to install than comparable machines on the market, uses less water and energy, runs quietly and delivers a quality wash for any fabric type. Available in five- to 12-modules, the TBS-50 is an extremely flexible tunnel washer that can be configured according to the needs of any high-volume laundry—today and tomorrow.

THE COMPLETE LAUNDRY SOLUTION

Girbau Industrial delivers the total laundry solution to high-volume laundries. With a proven line of batch tunnel washers, presses, dryers, ironers and loading and unloading systems, Girbau Industrial serves the complete laundry production and efficiency needs of virtually any application. Durable and reliable, Girbau Industrial laundry systems are in place at hospitals, hotels, casinos, resorts and industrial laundries across the globe.

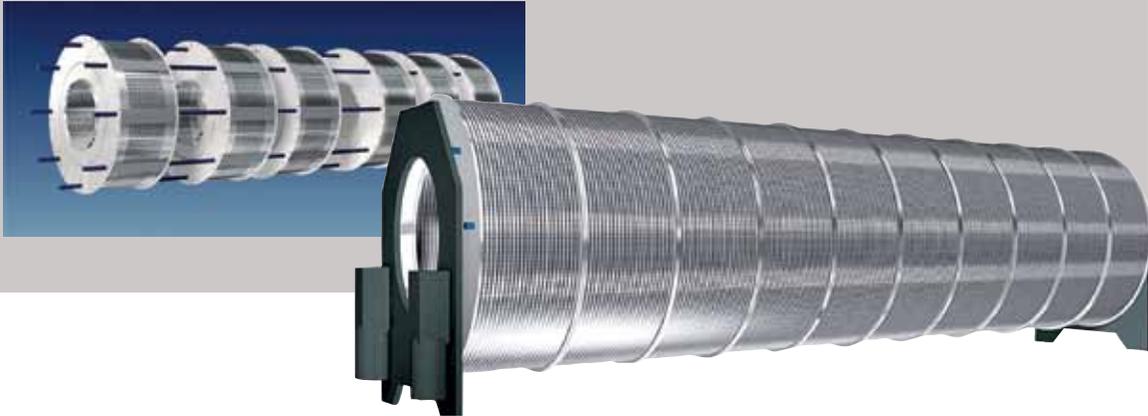
FLEXIBLE TO MEET ANY LAUNDRY NEED

The earmark of the TBS-50 is its infinite flexibility. Superior programmability along with its series of identical, highly flexible wash modules, allows for configurability to meet very specific laundry needs. Girbau Industrial's engineering team can custom configure every tunnel system at the time of order, or months or years after installation, to meet future facility needs. Steam inlets and chemical ports can also be added after installation as processing needs change.



MODULAR DESIGN WITH INNER & OUTER DRUM

The TBS-50 Batch Washer features a modular inner and outer drum system with separate baths for each module—providing great efficiency and wash process flexibility. The inner-outer drum construction of every module allows for total control over water temperature and levels, duration of the wash cycle, mechanical action, bath partitions, rapid draining, chemical injection, dosing parameters and more. Moreover, each module is programmable to perform a complete bath exchange when necessary. Unlike the TBS-50 Batch Washer, single-drum batch washers require more space and modules to properly wash laundry. Single-drum washers also require preheating and do not allow for total control of chemicals, steam, baths and drainage.



TOP TRANSFER ELIMINATES MIXING OF BATHS FROM MODULE TO MODULE

The TBS-50 Batch Washer features a wide top-transfer opening at every module. This assures laundry passes from one module to another without mixing baths. During transfers, sensors monitor and confirm conditions are met for transferring the load without jams. Laundry progresses through each of the washer's identical 110-pound capacity modules, where it is soaked, pre-washed, washed and rinsed according to each precisely programmed module.

TRACEABILITY AND DISINFECTION

The TBS-50 is configurable to properly sanitize linens—critical for laundry processed for hospitals, nursing homes and assisted-living facilities. Steam injectors and intermediate filter tanks work to ensure particles from the rinse cycle aren't reused during the wash process. The washer's independent modules and steam inlets totally permeate linens at the temperatures and conditions required to properly disinfect laundry. Each module has the option for a steam inlet, and the outer drums of each module ensure proper chemical dosing at every stage of the wash process.



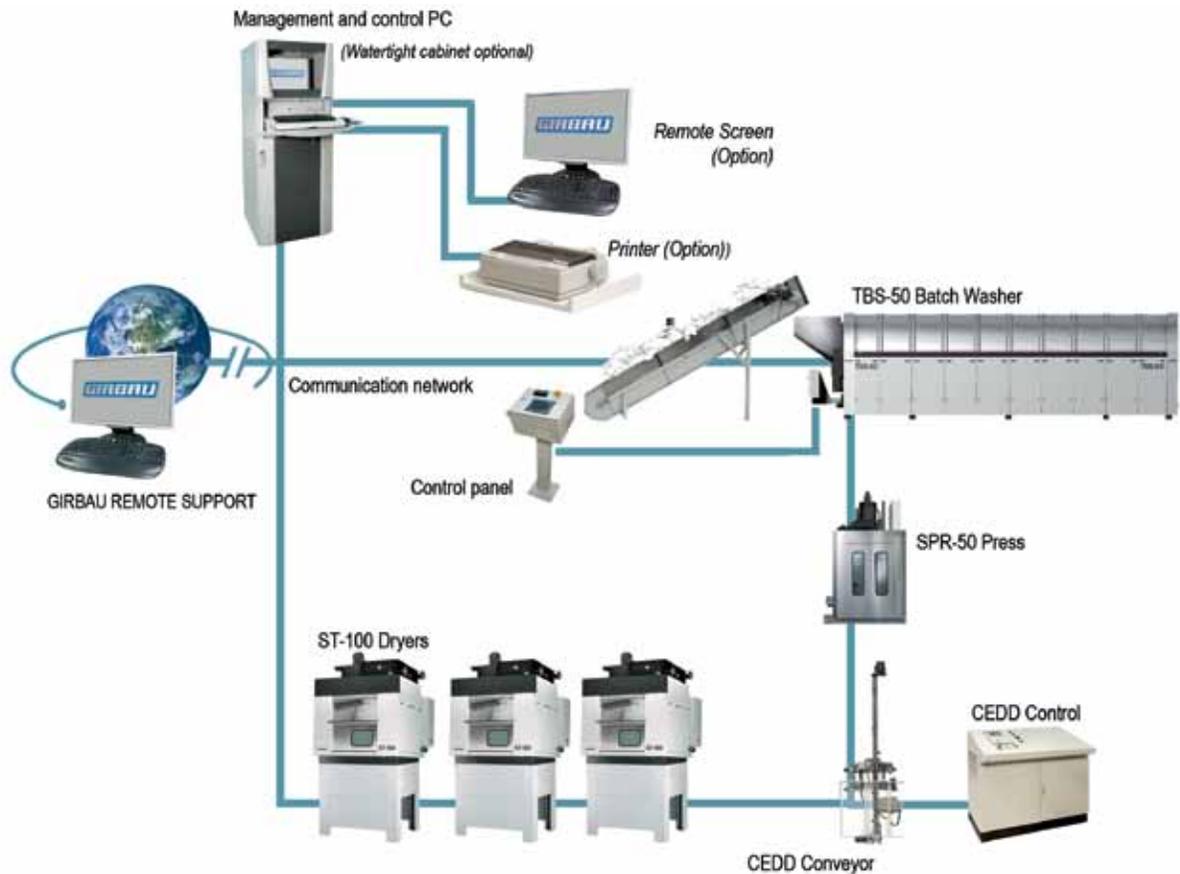
REQUIRES LESS WATER AND ENERGY

The TBS-50 Batch Washer reuses water at specific points during the wash process. The freshest rinse water is used on the cleanest linen to ensure pristine wash results. Once the linens are rinsed, the used rinse water is redirected to a holding tank and used a second time to wash another load of soiled linens.

REDUCED MAINTENANCE & INSTALLATION COSTS

Not only is it less expensive to install than other models on the market, the TBS-50 requires less maintenance thanks to its unique design. The washer is transportable fully assembled within a single standard container or trailer—lowering shipping costs. Because it's pre-assembled, installation is completed in considerably less time—saving money. Its dual-drum design means it properly cleans using less space than single-drum models which require more modules to accomplish the same process.

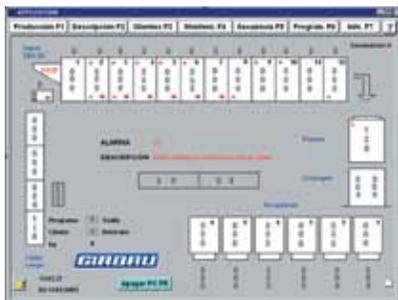
Thanks to straightforward engineering, the TBS-50 is a proven performer requiring less maintenance—reducing downtime and production loss. The vortex-type pumps have no filters and do not, as a result, require filter cleaning like most batch washers. Additionally, the washer's transmission features a centralized lubrication system, minimizing maintenance, and the motor drive is externally located away from moist areas to eliminate the risk of breakdowns.



SUPERIOR CONTROL & PROGRAMMABILITY

Every facet of the TBS-50's automated system is programmed from a central control, which allows for 99 individual programs and detailed adjustments of different operations of every component of the laundry processing system. This central control oversees the operation of every laundry system component, including conveyors, batch washers, presses, transfer shuttles and dryers.

An Ethernet-type industrial network centralizes the information from all system components – conveyor, batch washer, press and dryer – and details the information on a computer display for easy management and control.



PRODUCTION MANAGEMENT IN A GRAPHIC ENVIRONMENT

The control's graphic management system allows operators to select different management options with a simple click of the mouse—providing quick and easy control over every facet of the laundry system. The central control's computer can be located in a remote location away from equipment, such as in a manager's office. That control allows the manager to make changes to equipment formulas and save those changes to apply at a later time.

PROCESSING REPORTS/DATA IN REAL TIME

The control's computer system allows users to run control reports detailing production, summaries, temperature, dosing, pump flow, mechanical action/cycle, press pressure, drying programs, customer screens descriptions, diagnostics, records of alarms and more. All data is exportable in spreadsheet form using MS Excel.

REMOTE TECHNICAL SUPPORT FROM GIRBAU INDUSTRIAL

It's easier than ever to troubleshoot technical problems thanks to Girbau Industrial's new remote support. Through an ADSL connection with any machine of the washing system – batch washer, press, dryers or conveyors – Girbau Industrial can troubleshoot problems and provide technical assistance. This service helps reduce downtime and lost productivity by getting your equipment up and running more quickly.



ADVANCED PROGRAMMABILITY OF THE BATCH WASHER

Individually, the Batch Washer is programmable by module for water temperature, duration of the wash cycle, mechanical action, bath partitions, rapid draining, chemical dosing, water levels, closing parameters and more. Offering detailed management over the wash process, the control is easy to use and offers a clear graphic display showing real-time data. It allows users to manage more than 999 client accounts and offers 99 washing programs.

- Control system display screen and printer available
- Control system electrical wiring is designed to fit the type of signal transmitted to avoid interferences
- Central control manages operations of every component of the laundry system (batch washers, presses, dryers and conveyors).
- Simple-to-use graphic display allows for efficient management with a click of a mouse
- Connection with technical assistance
- Maintenance program instructions and logs inspection dates
- Dosing of detergents and chemicals
- Management of up to 99 washing programs and 999 client accounts
- Programmable by module for water temperature, water levels, chemical dosing, mechanical action, closing parameters, duration of wash cycle, bath partitions and more

**The TBS-Batch Washer
Tactile Control**

Clearly illustrated graphic icons make it easy to use the TBS-Batch Washer Tactile Control. With a click of the mouse, users can select and control every variable of the wash process by module.

Real time data regarding the wash process can be viewed from the main screen of the control, and from easily accessed sub-screens. View program, customer, loads, water temperatures, chemical injection, cycle time and productions.



ADVANCED ENGINEERING = MECHANICAL INNOVATION & SUPERIOR EFFICIENCY

Thanks to innovative engineering, the TBS-50 Batch Washer cuts water and energy usage, and bolsters productivity using short wash cycles. Reliable, durable and easy to use, the Batch Washer operates silently, while offering an unmatched dilution factor and cleaning results.



The motor drive is located externally, away from moist areas to prevent damage. The transmission drive crown and sprocket are internally lubricated with no need for ongoing maintenance.

Transfer of the load from one module to the next is seamless, thanks to the wide diameter of the transfer opening. With each transfer, the washer carries out an auto-verification to avoid linen tie-ups.



An independent computer displays the control in real time—showing every laundry batch in process, the temperature of every bath and each chemical dosing.

The independent outer drum at every module allows complete configurability of the process and total control over water temperature and chemical injection.

DURABLE CONSTRUCTION

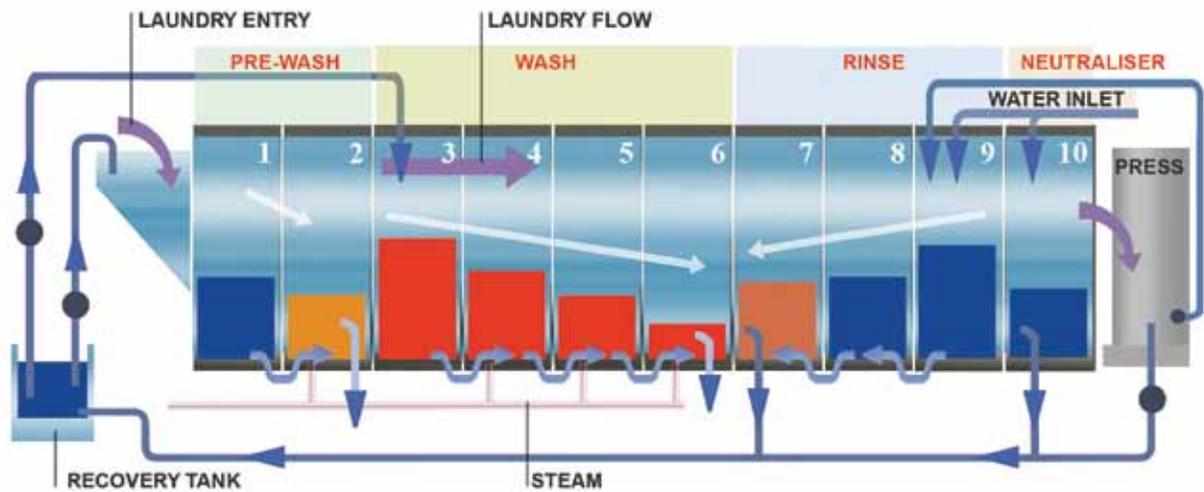
Durability of construction characterizes the TBS-Batch Washer. The chassis is constructed with steel profiles finished in durable epoxy paint. Additionally, any materials that come in contact with laundry consist of AISI-304 stainless steel. No wonder the washer is backed by a limited 2 year manufacturer's warranty.



The mono-block system—the set of inner and outer drums—delivers unmatched installation versatility and control over the wash process by module.

- Available in five- to 12-module configurations; each module has a capacity of 110 pounds.
- Constructed of inner and outer drums to form an integrated mono-block system.
- An inverter-controlled motor drive allows for variable rotation speeds.
- Washer drums are joined without welds, using a patented system.
- Baths are separated by two long-lasting EPDM gaskets.
- Easy, less costly installation—the machines are fully assembled and transported via standard container or trailer.
- Batch washer drums are constructed of perforated stainless steel, seven wash beaters, and top transfer to obtain unequalled mechanical action and an excellent dilution factor.
- Steam inlets are optional for proper disinfection of laundry.
- Programmable by module for water temperature and levels, duration of the wash cycle, mechanical action, bath partitions, rapid draining, chemical injection, closing parameters and more.
- Designed to operate with less negative impact on the environment, the press water and rinse water are reused, and the washer itself is engineered to use less energy.

TBS – MULTI BATCH WASHER



Sand Removal

If this function is activated, module 1 is periodically emptied to facilitate the removal of sand residue.

Termostop

With this function activated, the transfer of laundry is not permitted until the programmed temperature of the indicated module is obtained

TBS - MULTI/10

Production Example

Process time: 20 minutes

Loads per hour: 30

Production: 3307 lbs/h

RESOURCES USED PER POUND OF LAUNDRY

Water*: 1.19 gal.

Steam*: 0.66 lbs.

Electricity: 0.014 kW/h

Detergent: Depending on wash program

* Depending on the actual variables of the wash process

A PROFESSIONAL SOLUTION FOR MULTIPLE PURPOSES

Girbau Industrial has designed the TBS – MULTI Batch Washer to solve the large production needs of laundry. This example above is available for seven- to 10-module batch washers.

SOAK AND PRE-WASH

The soak and pre-wash phase is carried out with water recovered from the subsequent phases and flows in the direction of the current. A large part of the dirt from the laundry is removed in this phase.

The temperature control in the recovery tank guarantees that the water temperature in this phase does not surpass the temperature programmed.

WASH

The water, coming from the recovery tank, flows in the direction of the current, assuring the maximum washing efficiency and minimizing the contamination between adjoining modules. Each module in this phase has a steam injectors system thermostatically controlled to guarantee the programmed temperature.

The great density of perforation of the drum and the good mechanical action of the wash beaters assure an excellent washing process.

RINSE

The water recovered from the press and a small quantity of water from the water supply flow counter current to guarantee an efficient rinse and an optimum use of resources.

NEUTRALIZER

The neutralizing phase is done in the last module, with water coming from the supply network.

EXAMPLES OF WASHING SYSTEMS

EXAMPLE OF STANDARD WASHING

The installation is ideal for industrial washing of large quantities of laundry.

EQUIPMENT:

- 1 ICP-4 Loading conveyor
- 1 TBS-10 Batch Washer
- 1 SPR-50-AD Press
- 1 CEED-4 Distribution conveyor
- 4 ST-100 Tumble Dryers

SPACE:

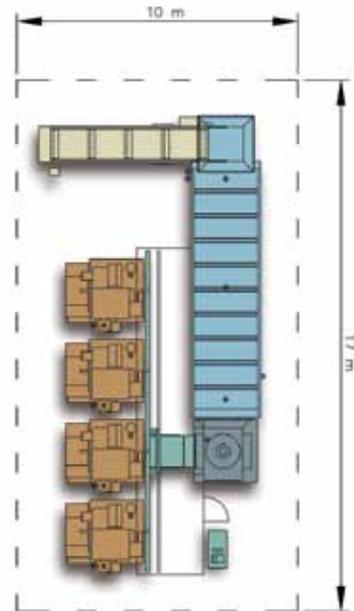
- The mechanical area occupies a space of 1,838 sq. ft.
- Minimum height required 12.5 ft.

REQUIRED STAFF:

- 2 operators in the loading area
- 1 operator in the unloading and control area

With this installation a wash process is done in 20 minutes. It has a minimum capacity to dry 4 towel cakes per hour in 220 pound loads.

The total laundry production is 3,307 lbs/h*, of which approximately 50 percent being towelling completely dry, and the remaining 50 percent flat laundry prepared for ironing.



* Depending on the actual variables of the wash process.

EXAMPLE OF INTENSIVE WASHING

The installation is ideal for washing laundry requiring intensive washing.

EQUIPMENT:

- 1 ICP-4 Loading conveyor
- 1 TBS-12 Batch Washer
- 1 SPR-50-L Press
- 1 CEED-2 Distribution conveyor
- 3 ST-100 Tumble Dryers

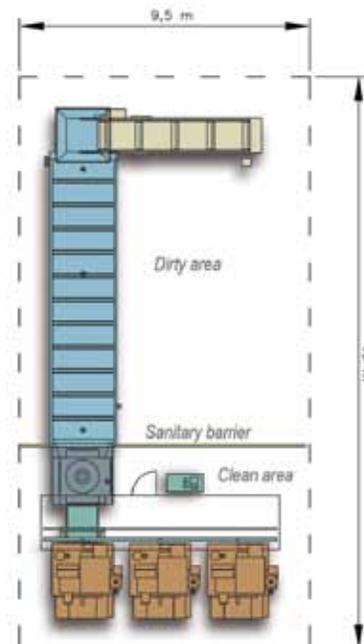
SPACE:

- The mechanical area occupies a space of 1,943 sq. ft.
- Minimum height required 12.5 ft.

REQUIRED STAFF:

- 2 operators in the loading area
- 1 operator in the unloading and control area

With this installation a wash process is done in 30 minutes. It has a minimum capacity to dry 4 towel cakes per hour in 220 pound loads. The total laundry production for hospital laundry is 2,646 lbs/h*, of which 33 percent being toweling completely dry.



* Depending on the actual variables of the wash process.

GIRBAU INDUSTRIAL'S FAMILY OF PRODUCTS A COMPLETE LAUNDRY SYSTEM SOLUTION



CONTINUOUS WASHING SYSTEM



loading conveyor

LOADING CONVEYORS (WEIGHT CONTROLLED)

Girbau Industrial loading conveyers load laundry batches by precise load volume.



batch washer

BATCH WASHERS

Designed to meet any laundry need, Girbau Industrial Batch Washers deliver the ultimate flexibility, efficiency and wash quality. Thanks to a convenient mono-block design, the TBS-50 Batch Washer is less costly and simpler to install than comparable machines on the market, uses less water and energy, runs quietly and delivers a quality wash for any fabric type. Designed for today and tomorrow, the TBS-50 is an extremely flexible tunnel washer that can be configured according to the unique needs of any high-volume laundry.



water extraction press

WATER EXTRACTION PRESSES

Designed to press laundry batches processed in any type of batch washer, the press optimizes subsequent drying and ironing – making them less time-consuming and more efficient. The press forms a round cake of laundry with a flat base. With high-capacity drainage facilities, water is extracted quickly and gently from all types of linen. The SPR-50 single-stage press is available in three different positioning options at the batch washer outlet: in-line, turns to the right, or turns to the left.

The SPR-50 water extraction press is delivered completely assembled and factory tested which facilitates problem-free installation. Most of the SPR-50 press electrical components are the same as those used in the TBS-50 Batch Washer and ST-100 Batch Dryer and are interchangeable, facilitating easy and convenient servicing.



unloading conveyor

CONVEYORS

Girbau Industrial unloading conveyers distribute laundry batches to and from various pieces of laundry equipment. The CEDD shuttle-lifting conveyor is the appropriate machine to distribute laundry batches coming from a press installed at the outlet of a batch washer. It is provided with two loading tables of 43.3 inches in width and 50.4 inches in length. Horizontal and inclined conveyers are also available.



dryers

DRYERS

Girbau Industrial dryers are engineered to separate and condition a variety of linen types, efficiently and quickly.

The 220-pound capacity ST-100 dryer – in steam, oil or gas – is designed with SPIROTILT-GIRBAU, a revolutionary system that optimizes the drying process and facilitates the unloading of laundry. With the slight drum inclination of only 2.5 degrees and the incorporation of inclined blades, the best drying process is obtained along with the best unloading system. The ST-100 dryer has 16 different drying programs. Each program includes 8 phases.



FINISHING SYSTEM

FEEDERS

Feeders automatically and quickly situate items of laundry on a belt and feed it into the flatwork ironer. The feeder and ironer are designed to work together seamlessly. The DRF is a highly versatile feeder that adapts to the production needs of the moment. So, it can work on 1 lane, 2 lanes or on 1 or 2 lanes without distinction at 2, 3 or 4 working stations. The DRF automatically identifies the width of a fed item and centers it on the lanes used.



multi-station feeder

HEATED CHEST FLATWORK IRONERS

Girbau Industrial heated chest flatwork ironers — in steam or oil and a combination of natural gas and thermal oil — are available in multiple finishing widths and up to three 32- or 48-inch diameter rolls. As rolls are added to the ironer, fabric moves across the machine's heated bed at greater speeds — drying and finishing linens faster. The ironers enable one-pass finishing without dryer conditioning. Perforated cylinders and a polished steel ironing bed provide uniform pressure to achieve quality ironing results and optimum production.



deep chest flatwork ironer

FOLDERS

Girbau Industrial folders can accomplish lane and cross folds according to item size. All folders are synchronized to work seamlessly with the flatwork ironers to improve laundry finishing and productivity.



folder

STACKERS

Girbau Industrial stackers quickly and automatically stack laundry items. Once the number of items is reached, the stacked laundry advances on a removable belt. Single- or double-sort configurations are available.



dual stacker and outlet conveyor

intelligent multi-sort folding technology



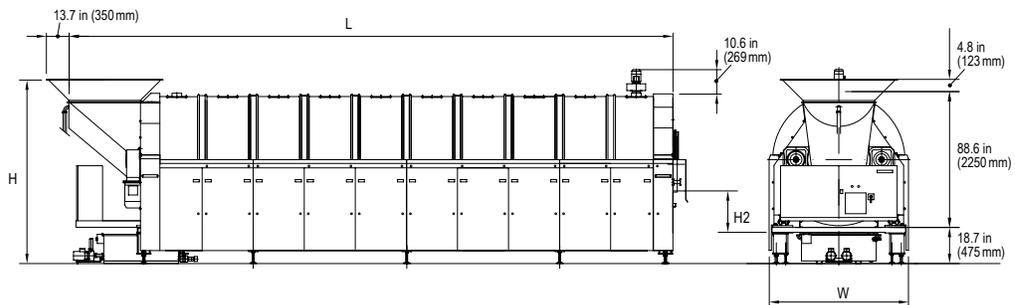
customized delivery conveyor options



high production small piece folding



MODEL		TBS-50/5	TBS-50/6	TBS-50/7	TBS-50/8	TBS-50/9	TBS-50/10	TBS-50/11	TBS-50/12
Capacity (per cylinder)	lbs. (kg.)	110.2 (50)							
Outer Cylinder Diameter	in. (mm.)	76.8 (1950)							
Inner Cylinder Diameter	in. (mm.)	72.8 (1850)							
Cylinder Depth	in. (mm.)	30.7 (780)							
Cylinder Volume	cu. ft. (dm. ³)	74.2 (2100)							
Number of Wash Lifters		7							
Washing Angle		270°							
Transfer Diameter	in. (mm.)	33.5 (850)							
Transfer Angle		450°							
Net Weight	lbs. (kg.)	12,677 (5750)	13,889 (6300)	15,101 (6850)	16,314 (7400)	17,526 (7950)	18,739 (8500)	19,951 (9050)	21,164 (9600)
Max. Working Weight	lbs. (kg.)	19,841 (9000)	22,487 (10,200)	25,132 (11,400)	27,778 (12,600)	30,423 (13,800)	33,069 (15,000)	35,714 (16,200)	38,360 (17,400)
Machine Width W	in. (mm.)	85 (2160)							
Machine Length L	in. (mm.)	214.5 (5448)	245.4 (6232)	276.2 (7016)	307.1 (7800)	338 (8584)	368.8 (9368)	399.7 (10,152)	430.6 (10,936)
Machine Height H	in. (mm.)	112.1 (2848)							
Opening Height H2	in. (mm.)	30.6 (777)							
Washing Speed	rpm	2-8							
Max. Pressure to Floor	PSI (kg./cm. ²)	313 (22)	341 (24)	370 (26)	412 (29)	441 (31)	469 (33)	498 (35)	526 (37)



ENVIRONMENTALLY FRIENDLY

Girbau S.A. laundry products meet rigorous environmental and safety standards established by the International Organization for Standardization (ISO). With the utmost concern for the environment, the TBS-50 Batch Washer optimizes water usage during large-volume laundry processing by reusing extracted water and rinse water. Developed to reduce noise pollution as well, the TBS-50 Batch Washer is extremely quiet thanks to inverter-controlled motors and gentle progressive movements. Additionally, the transmission system gear is quiet and the steam inlets are equipped with silencers – making for a more appealing work environment for users of the system.

Ever focused on laundry efficiency, Continental Girbau, the North American subsidiary of Girbau S.A., is a member of the U.S. Green Building Council (USGB), a 501(c)(3) nonprofit that developed the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.



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