

PBW[™] TUNNEL

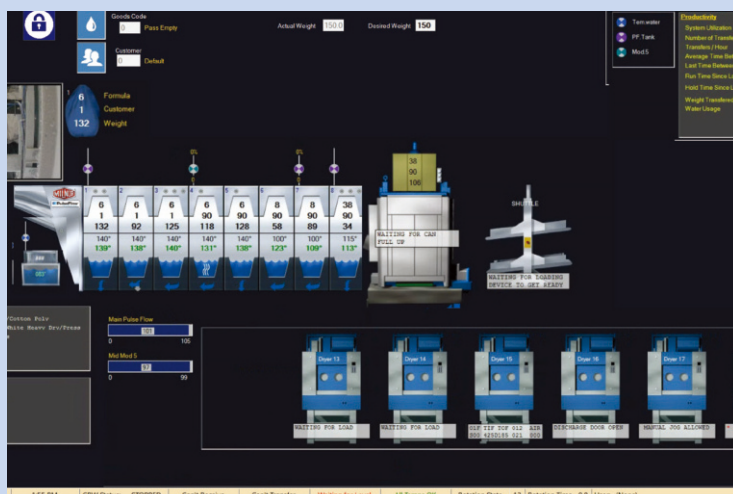
PROVEN TECHNOLOGY • HIGH PRODUCTION • SMALL FOOTPRINT



PBW™ TUNNEL

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Proven Technology



The Milnor PBW™ tunnel is ideal for laundries with limited space and with at least 1,000~2500 kgs hourly production.

The PulseFlow® system is equipped with the touchscreen Mentor® control for unprecedented visibility and programming.

Proven Technology for Your Small Laundry Needs

The Milnor solution for all of your laundry needs. The compact design gives smaller laundries (with limited space) the ability to install a tunnel washing system based on the proven design and technology of the Milnor tunnel washers. This allows both small and large laundries to process their lower volume production in an automated fashion. The PBW™ tunnel has a 55 or 70kg capacity with individual compartments, allowing different types of goods to be processed simultaneously. Laundries processing every goods classification have enjoyed unprecedented savings thanks to PulseFlow® Technology – in a small footprint.

What Laundries Need Today

For the highest return on investment, the reliability and cost efficiency of our laundry machinery allows a laundry to be more profitable by reducing energy, fresh water consumption (as low as 2.5 liters per kg), and the necessary labor force in your laundry. The PBW™ is not a new design. Customers around the world have seen unprecedented water, utility, and labor savings since installation.

Laundry System Components Needed for Optimal Performance:

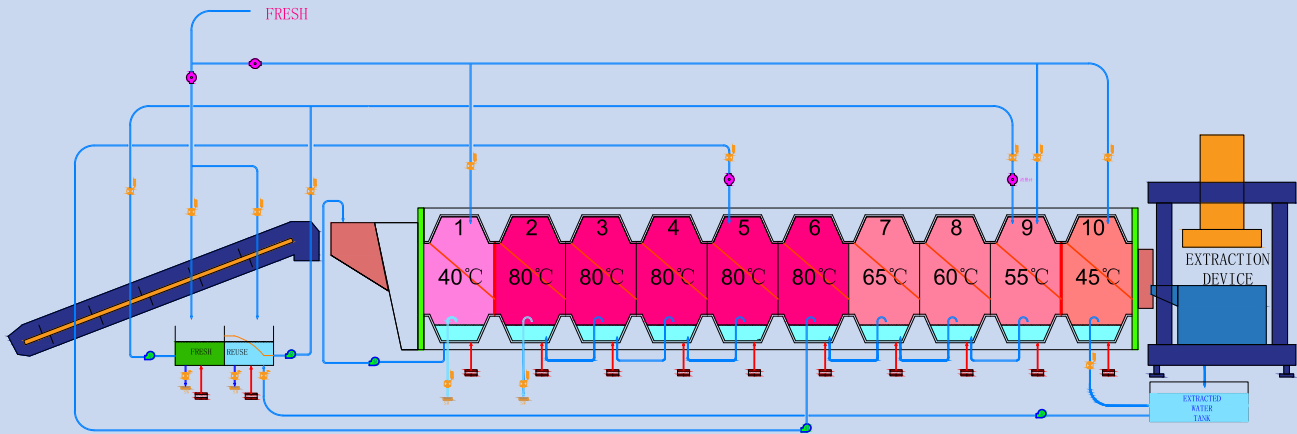
- Loading device available as a conveyor, shuttle, or bag system
- Extraction of device, either centrifugal extractor or the matching single stage press
- Our proven PBW™ tunnel – up to 55 kg or 70 kg batch size
- Automated pass-through dryers or several manually loaded/unloaded dryers



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Working Principle



(Healthcare) Flow Diagram of a 10-Mod 76039 PulseFlow® System

Features



Meet the current Chinese standards (WS/T508-2016 Technical Specification for Hospital Healthcare Fabrics Washing and Disinfection: 80 °C for 10 minutes)



Only 10 modules are needed to save costs and space



PulseFlow® technology for more efficient washing. The expected water consumption can be as low as 2.5 liters per kg



Steam disinfection during start up



The 9th and 10th modules are isolated for washing, automatically cooled, and do not generate thermal shock when entering the press



Isolated washing (self circulation and self cooling) in the first module, to avoid the formation of protein stains



The 9th and 10th modules are washed with cool fresh water to ensure the washing effect



Optional integrated heat recovery device

Dilution Is Key

The PBW™ tunnel washer has taken true top transfer tunnel washing another step forward. The interrupted counterflow enhances the chemistry's efficiency by allowing more time to work on the goods before dilution. It still lifts and drains the goods before transferring them into the next processing stage.

Dilution, the most essential element in the washing process, is often forgotten. The truth is that we wash with the miracle solvent called water. Water's role is to remove soil from the goods by the process of dilution. Time, temperature, chemical action, and mechanical action are important. They are only catalysts, which enhance water's role to help loosen the most heavily entrenched soil from the goods. Mechanical action helps dissolve or suspend the soil in the water to be removed from the goods by precisely measured high velocity rinsing, followed by true top transfer into cleaner water. Fresh water consumption is minimal in all PulseFlow® tunnels because clean extracted water is pumped to the PulseFlow tank, which is reused later in the washing process.

Top transfer washing, proven to enhance dilution, results in a high level of wash quality for a range of goods – everything from light hospitality linen to heavy soil industrial goods can be laundered in a Milnor PBW™ washer.

What distinguishes a Milnor tunnel washer from the competition is better dilution, higher wash quality, and more rugged construction.

Properly-designed batch washers can wash better, faster, and at a lower cost than any washer-extractor. The Milnor PBW™ is ideal for light to medium soil processing and can be configured with various options to process heavy and industrial soil.

In addition to higher wash quality, other advantages are savings in utilities and labor, as well as faster processing of small batches.



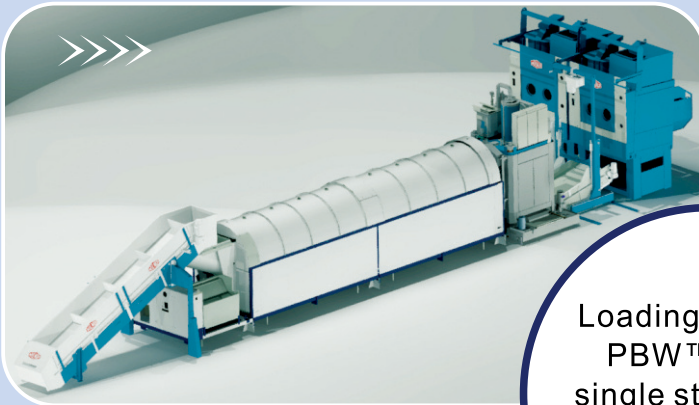
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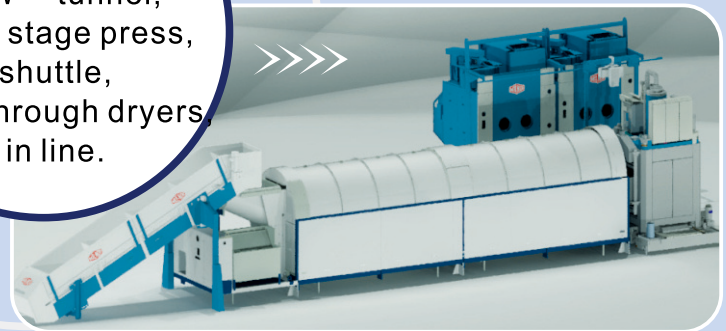
More Flexibility

To Fit Any Laundry

There are many layout variations to meet your production, space and budget allocations. Milnor's Applications Engineering Department and CSM's Applications Engineering Department have decades of experience in finding the best layout for our customers' unique laundries – both new construction and replacement projects.



Loading conveyor,
PBW™ tunnel,
single stage press,
shuttle,
pass-through dryers
in line.



To Achieve All True Top Transfer, a Tunnel Washer Must Include:

- ★ A scoop that lifts each batch out of the water that transfers it to the next module
- ★ Perforations in the lifting scoop that allow almost all of the “free water”(the water not trapped in the goods) to flow back into the original module and not be carried forward with the load
- ★ A solid partition between modules to completely separate chemical baths
- ★ No perforations in the partitions so bath integrity is maintained at all times
- ★ The partition should be fixed to the outer drum so that no sliding seals are required to completely separate baths
- ★ All flow between modules should be external, so flows can be changed on command when necessary and proper water levels can be maintained



Compare Real-Time Operations to Pre-Set Benchmarks

Mildata MilMetrix® Software allows you to see, at a glance, if you're keeping up with expected performance throughout your laundry or on a machine-by-machine basis. This allows you to address any machine issues (like a low pressure error message) before it affects your daily numbers.



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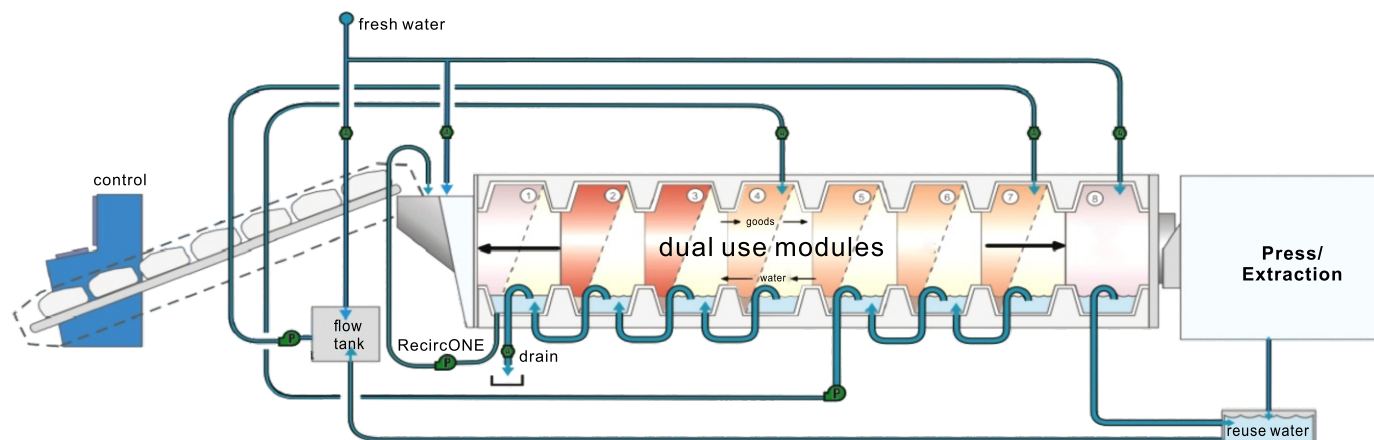
Technical Parameter				
Output	1.3ton/hour	1.6ton/hour	1.6ton/hour	2.1ton/hour
Model	76032-8	76032-10	76039-8	76039-10
PulseFlow				
	76032		76039	
Cylinder				
Rated Capacity*	121lbs.	55kg	155lbs.	70kg
Diameter	76"	1930mm	76"	1930mm
Depth	32"	813mm	39"	990mm
Approx. Dimensions	ft["]ins["]	mm	ft["]ins["]	mm
Width	91"	2310	91"	2310
Height	110"	2798	110"	2798
Length of Modules				
5 modules	27'4"	8378	30'4"	9268
6 modules	31'1"	9488	34'6"	10556
7 modules	34'7"	10598	38'8"	11844
8 modules	38'4"	11708	43'1"	13132
9 modules	42'1"	12818	47'3"	14420
10 modules	45'7"	13928	51'5"	15708
11 modules	49'3"	15038	55'8"	16996
12 modules	53'	16148	60'	18284
Connections	ft["]ins["]	mm	ft["]ins["]	mm
Water Manifold Inlet(s) +	NPT2"	G2"	NPT2"	G2"
Quick Drain Valve	NPT8"	190.5mm	NPT8"	190.5mm
Steam	NPT2"	G2"	NPT2"	G2"
Compressed Air Flow	NPT1/2"	G1/2"	NPT1/2"	G1/2"
Water				
Water Consumption++as low as	3gal/lb	2.5L/kg	3gal/lb	2.5L/kg

Specifications and appearance subject to change without notice.

*Depending on several factors including type of goods, soil content, etc.

+Additional 3" for linen supply.

++Depending on wash program





PRESS

Press for Milnor tunnel systems! Milnor's single-stage membrane press makes it even easier to tailor a continuous batch system to your needs. You can meet production and space requirements in the way that suits you best. Stainless steel press basket accomodates up to 50 kg, 70 kg, or 120 kg of standard cotton sheets. It's productive and efficient.

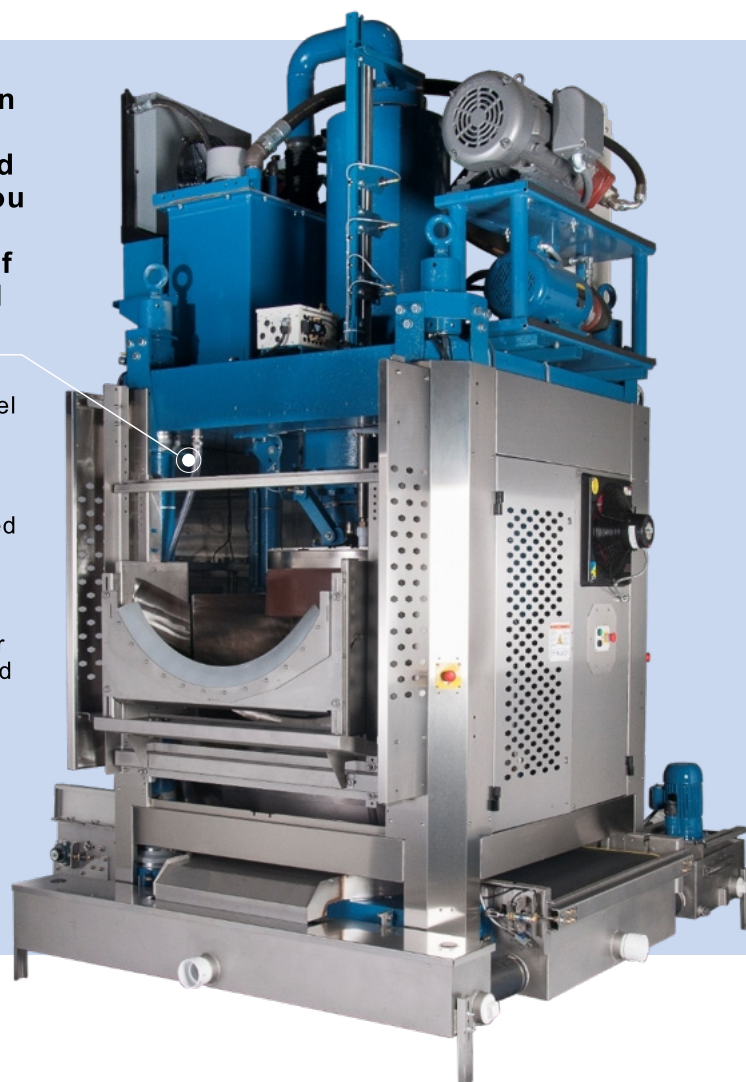
*The maximum pressure can reach 56 bar. A pressure of 40 bar can achieve a moisture content of 50% for towel fabrics in just 75 seconds, while a water press of 56 bar can reduce the moisture content by 2% -3% in the same situation.

*Rigid structure absorbs stress for long life. The patented internal design makes operation and maintenance convenient and worry free.

*Compact design requires less space. The press can be ordered for various installation arrangements – in-line or 90° angle in either direction –to fit your laundry's size and shape.

*Simple computer interface, easy to read and program; The wide LCD screen display facilitates real-time monitoring by the operator.

*The compressed clean water enters the tunnel for recycling, saving energy. Excellent for garments, dust mats, 100% polyester textiles (including surgery and barrier cloth items), plus cottons and blends.



Single Stage Press	CP1540**		CP1640**		MP1556		MP1656		MP1A50	
Batch Size-lbs.(kg)	90-110	41-50	110-150	50-70	90-110	41-50	110-150	50-70	250	115
Nominal Cake Diameter- in.(mm)	35.4	900	39-37	1000	35.4	900	39.37	1000	48	1219
Standard. cycle time- secs	120	120	120	120	120	120	120	120	120	120
Maximum Pressure- psi (bar)	580	40	580	40	812	56	812	56	725	50
Hydraulic Pump Motor- HP (KW)	15	11.18	15	11.18	15	11.18	30	22.4	40	29.8
Booster Pump- HP (KW)	n/a	n/a	11	8.2	11	8.2	11	8.2	11	8.2
Recirculation Motor- HP (KW)	1.5	1.12	1.5	1.12	1.5	1.12	1.5	1.12	1.5	1.12
Conveyor Motor- HP (KW)	1	0.75	1	0.75	1	0.75	1	0.75	1	0.75
Overall Width*- in. (mm)	108	2744	108	2744	108	2744	108	2744	116.5	2959
Overall Depth*- in. (mm)	91.94	2335	91.94	2335	91.94	2335	91.94	2335	115	2921
Overall Height* -in.(mm)	150.25	3816	151.75	3854	150.75	3829	150.75	3829	178.25	4540
Gross Weight*- lbs.(kg)	24,680	11,195	29,140	13,113	28,725	13,030	32,960	14,951	44,360	20,122

Special options required for 90 seconds or faster transfer times.
 Specifications and appearance subject to change without notice.
 Contact factory for acoustics data and exact specifications.
 All dimentionts are center discharge models unless otherwise noted.
 *Approximate, with standard accessories.
 **With standard pedestal base of 190mm high.



CENTRIFUGAL EXTRACTOR

For automated CBW/PBW™ batch washing systems, brings full automation to processing all types of linen, even the most delicate and difficult-to-handle fabrics. The capacity ranges from 30kg to 120kg. The cycle time can be short as 2 minutes, 25-30 batches can be processed per hour based on different linen types and washing programs. Maximum moisture removal reduces drying times and saves fuel.



- *The single motor and inverter produce a full range of speeds.
- *The hydraulic system of Milnor's centrifugal extractor is designed to tilt quickly for fast turnaround between loads.
- *Multiple centrifugal extractors can be used with a single CBW®/PBW™ batch washer in higher-production plants. A combination of centrifugal and membrane press extractors can be configured for mixed-goods plants.
- *Suspension system isolates vibration for high speed operation.
- *Bearing housing supported 360° by massive ring-of-steel design.
- *Links to Mildata® computer system for total plant management.
- *Milnor's centrifugal extractor works especially well with polycotton goods such as uniforms.
- *The machine's ability to remove water gently and efficiently also allows extraction of multifilament for operating rooms, as well as 100% polyester napery.

Centrifugal Extractor	MXT4232		M9T4840	
Maximum Extract Speed - RPM (G)	1000	600	840	480
Dry Weight Capacity -lbS.(kg)	up to 150	up to 70	up to 260	118
Cylinder Diameter - in.(mm)	42	1067	48	1219
Cylinder Depth - in.(mm)+	32	813	40	1016
Gross Cylinder Volume - cu.ft.(L)	25.7	728	41.9	1186
Drive Motor - HP (KW)	30	22	60	45
Hydraulic Motor - HP(KW) ++	15	11	15	11
Overall Width* - in.(mm)	115.1	2923	116.4	2958
Overall Depth* - in.(mm)	148.7	3776	167.8	4262
Stationary Overall Height* - in.(mm)	100.9	2817	128.2	3255
Maximum Unloading Height* - in.(mm)	135.8	3450	159.71	4055
Approximate Gross Weight*-lbS.(kg)	12,450	5647	19110	8668

Specifications and appearance are subject to change without notice.
 + Add 36 in. (914 mm) for freestanding controls.
 ++Intermittent operation for fast loading of power.
 Specifications are approximate.



PASS-THROUGH DRYER

For automated tunnel washers and other washing systems . Milnor provides various models with basket volumes available from 1280 L to 4800 L accommodating linens from 50kg up to 250kg. High efficiency to reduce drying times and saves fuel.



*Goods circulate freely—as they dry, they move to the upper end; cylinder enhances movement of hot air through the load.

*With about 65% of the perforated side sheet open, hot air flows easily through the basket.

*Unique Energy Saver Seal™ keeps air flowing through the goods without escaping around the outside of the basket. Unique air path means a Milnor dryer gets the most efficient use of hot air.

*Fixed tilt—places the heaviest goods, which are wettest, nearest the heat entry. Fast unloading—no need to wait for mechanized tilting or operator attention, as the basket is always tilted toward the unload end.

*The microprocessor control allows field-programming of up to 32 drying formulas, to handle both full and partial loads for 16 different types of goods. Inlet and outlet temperatures may be programmed to optimize drying times.

*Dryer controls can also be linked to a Mildata® computer system for central programming, system monitoring and production reporting.

Pass-Through Dryer	MT140**		5050		6464		7676	
Capacity range* - lb.(kg)	200-320	91-145	100-150	45-70	230-350	105-158	450-600	204-273
Basket volume – cu.ft.(L)	108	3058	56.8	1608	119	3373	200	5663
Filling Factor @ 1kg : 25L								
lbs.(kg)	269.7	122.3	141	64	297	135	497	226
lbs./cu.ft	2.5		2.5		2.5		2.5	
Filling Factor @ 1kg : 20L								
lbs.(kg)	337.1	152.9	177	80	371	169	620	240
lbs./cu.ft	3.1		3.1		3.1		3.1	
Basket diameter – in.(mm)	64	1626	50	1270	64	1626	76	1930
Basket depth – in.(mm)	58	1473	50	1270	64	1626	76	1930
Blower motor – HP (KW)	25	18.5	7.5	5.59	25	18.64	40	30
Basket drive motor – HP (KW)	3	2.23	1.5	1.1	3	2.23	7.5	5.5
Combustion air motor – HP (KW)	3	2.2	0.5	0.38	2	1.5	1.5	1.1
Approx. overall width* - in.(mm)	85	2159	67	1702	85	2159	108	2743
Approx. overall depth* - in.(mm)	103.2	2626	95.5	2426	109.2	2274	142.5	3618
Approx. overall height* - in.(mm)	159	4039	138.5	3517	158.8	4035	187.8	4767
Approx. net weight* - lb.(kg)	7,938	2431	4,000	1814	5,560	2527	10,000	4536

Specifications and appearance are subject to change without notice. Contact factory for acoustics data.

Capacity depends on type of goods--e.g., ranging from various fabrics/cotton goods to mats and wipers.

*Approximate, with standard accessories.

**With standard pedestal base of 1000mm high.



Supporting Equipment

- ★ 4 loading units (sloping), stainless steel structure
- ★ Equipped with a weighing device to record the weight of each batch of linen
- ★ Connect to Mildata® computer system and receive input signals
- ★ Signal warning light, displaying loading status and overload alarm



Loading Conveyor

- ★ Double layer cake holder design, capable of conveying single or double linen cakes from the press to the dryer
- ★ Double chain drive lifting system
- ★ Reliable and accurate laser positioning system
- ★ Equipped with conveyor track and necessary cables
- ★ When any obstacles are detected, the safety pedal and sensors will stop the conveyor belt from moving



Bag System

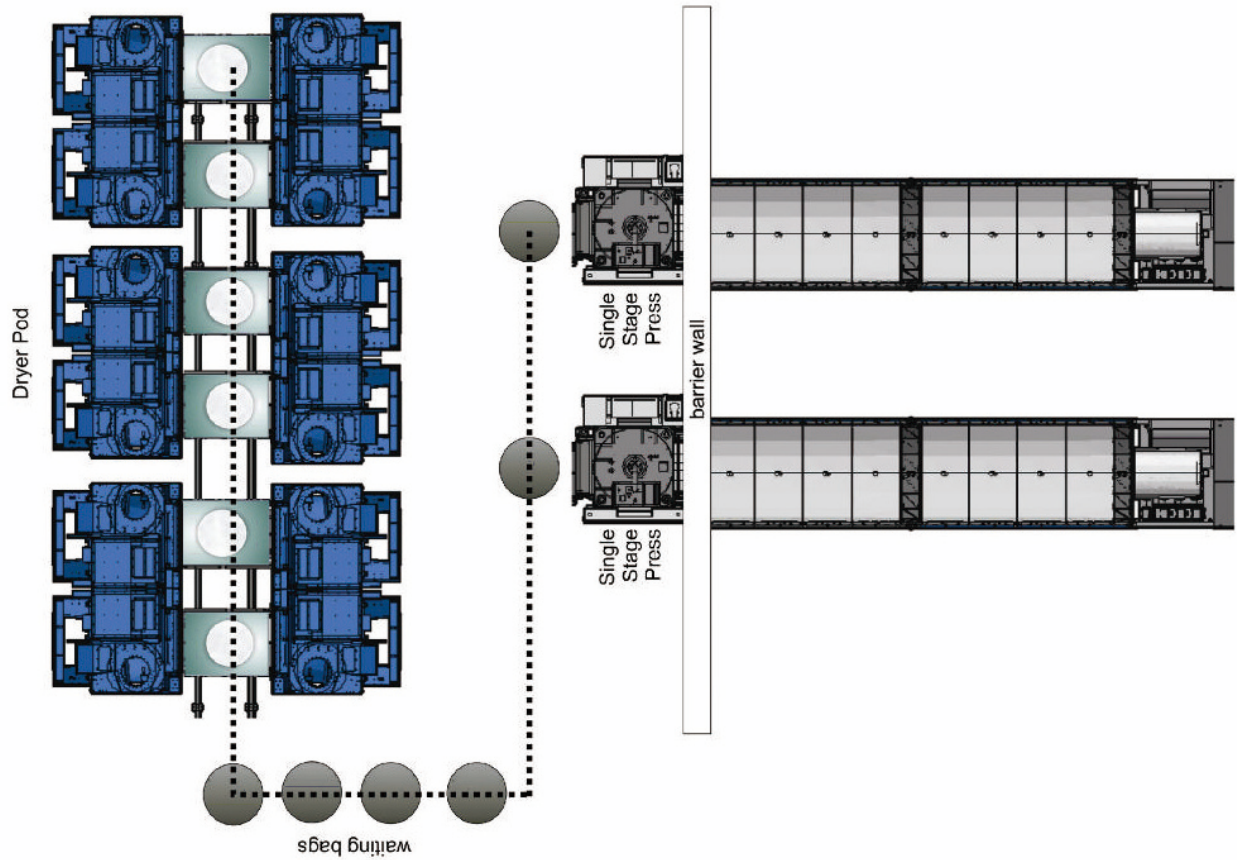
- ★ Equipped with weighing sensor, capable of automatic weighing
- ★ Customized for your specific needs
- ★ Legendary Milnor durability provides structural stability and low maintenance
- ★ Separate opening and closing of the track, anti detachment device
- ★ Seamless connection with the Mildata® computer system



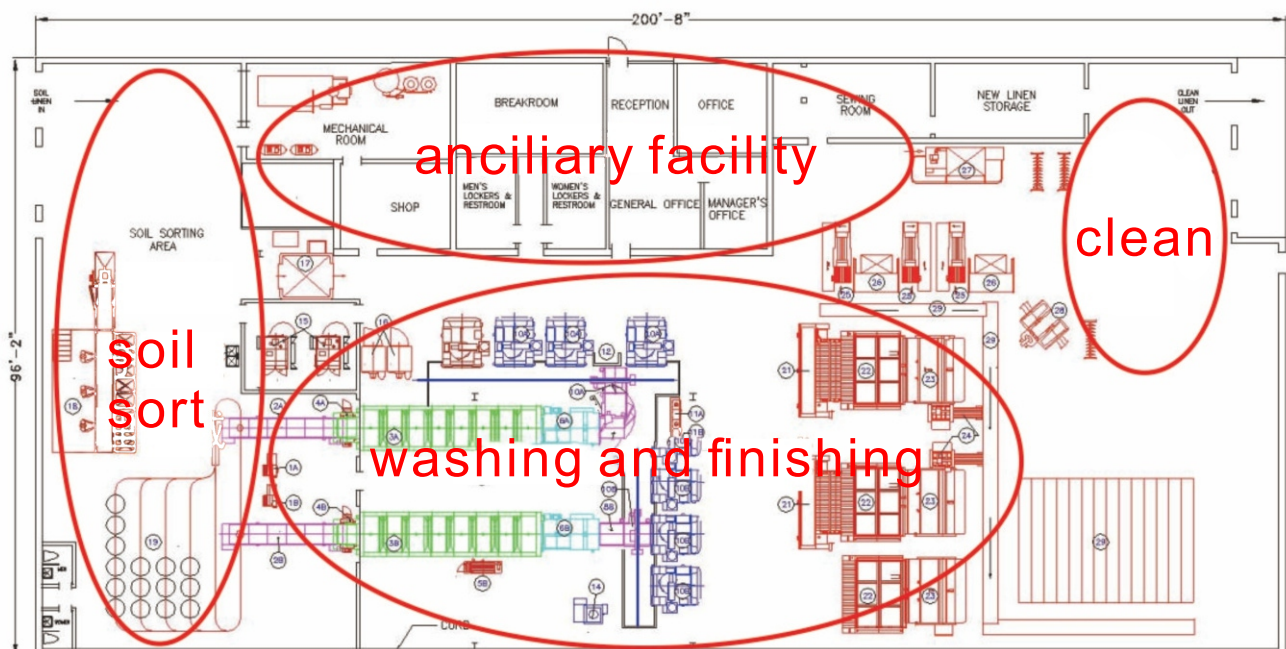
Shuttle



Layout Planning



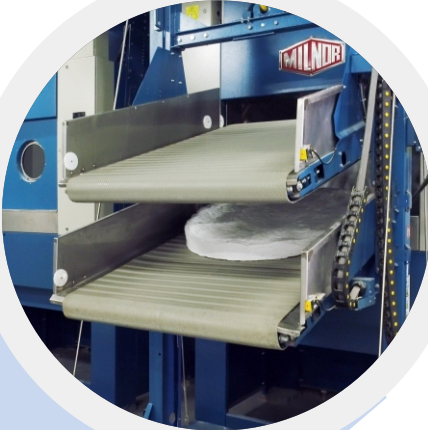
Efficient Bag System



Layout Plan of Factory



Application Cases





CASTIC-SMP Machinery Corp.Ltd.



Textile Care Solutions
That Work For You



CASTIC-SMP Machinery Corp.Ltd.

深圳中施机械设备有限公司
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