

GEYSER

the power of steam

PENTEK
TEXTILE MACHINERY





Pentek manufacturing plant located in Prato, Italy

GEYSER

THE STEAMING POWER TO THE NEXT LEVEL



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Why Geyser?

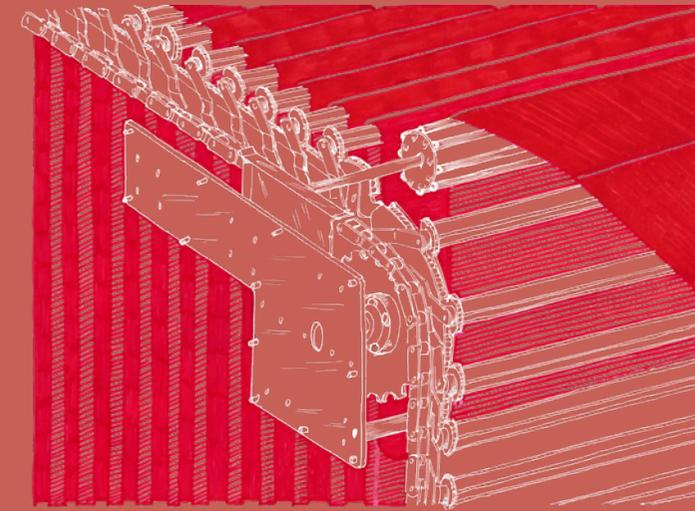
GeySer is the result of a working team of engineers and technologists with more than 30 years of experience in the designing and manufacturing steam agers for the textile industry.

GeySer is the definite answer for the discerning textile printing manufacturing company, aiming to set their products at a different level, escaping the pure price-battle competition and providing a textile product with excellent performances and sustainability in line with current market's requirements.

Suitable for all the types of steaming and curing applications currently available in the textile printing industry, GeySer already includes in the standard configuration the possibility to process traditionally printed or digitally printed fabrics.

The higher fabric content given by the new patented loop formation system, the improved air circulation fans and their placement within the various chambers, the fresh air inlet system, the innovative multiple entry are only some of the major factors for reaching and maintaining a constant temperature and steam quality during the entire process and provide the best possible color development.

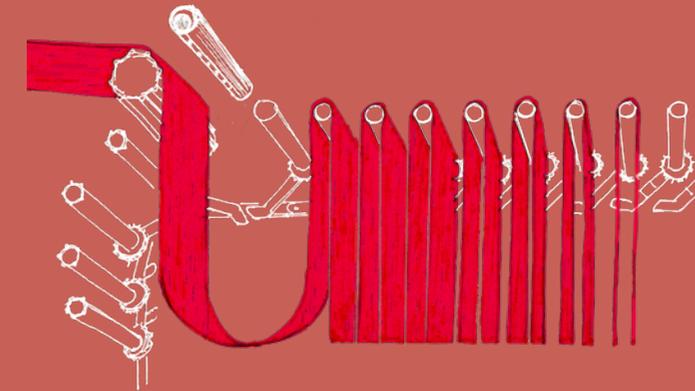
Savings in operation are not only related to the impressive reduction of steam requirement, but they are also extended to the process before and after the steaming step. From the lesser need to utilize urea in the printing paste during printing to the less water and chemical consumptions during washing after steaming, whenever it applies.



FOLD FORMATION

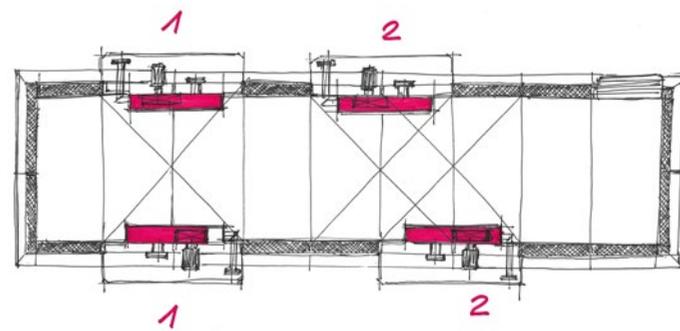
(new patent)

Geysier introduces a new designed system for the fold formation, which implies the lifting of the fold right after the feeding roller by the sticks in a clockwise motion, that is following the direction of the sticks. This design offers the great advantage of bringing the stick with the fabric almost at the same height of the main feeder, thus determining a natural fabric fall by gravity, without any slipping risk or dangerous oscillation of the folds, even with wider fold formation.



PULSE STEAM JET

Another novelty introduced by Geysier is a Steam Jet system - continuous or pulsed - which facilitates the formation of the first fold without creating noticeable oscillations. Depending on the weight and characteristics of the fabric, the function of the steam can be determined with a continuous jet of steam, or with intermittent and timed pulses or without any steam jet.



NEW MODULAR CONFIGURATION

The innovative modularity of the equipment ensures an excellent and uniform fabric exposure to steam in all configurations of Geyser. Two steaming modules are now available according to the unit content:

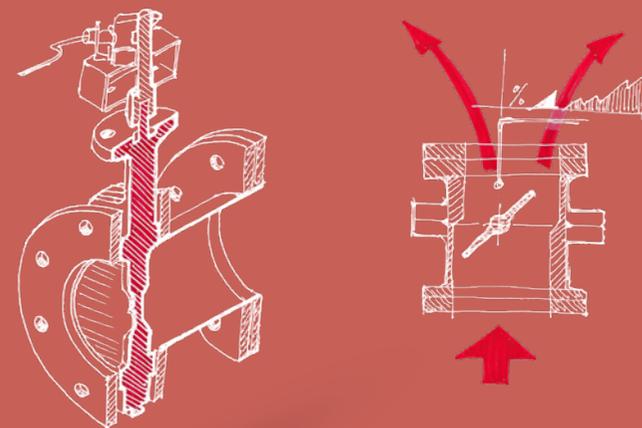
1. **Intensive steaming:** (260 cm module) with double steaming units, symmetrically placed one in front of the other for maximum steaming intensity. Designed for first steaming action.
2. **Extended steaming:** (390 cm module) for bigger fabric content, composed by the same double steaming units, placed one in front of the other, but not symmetrically, in order to enable a uniform distribution of the steam. Indicated for bigger fabric content.

Ventilators will blow the steam from the top side of the chamber, through communicating ducts to ensure a constant uniformity of steam all over the whole content of fabrics.

EASIER MAINTENANCE

A specific attention has been posed on the operation and maintenance care, and particularly:

- A. The use of 15 cm fixed pitch among sticks with single chain enable maximum stability of the sticks and no synchro among multiple chains (23 cm pitch is anyway predisposed to be implemented mechanically).
- B. Two movable platform (one per each door), sliding along the machine enable to reach any side of the chamber for any maintenance operation. The two platform can be linked together to form a wider base, but during the process they are blocked on the two extremities of the steaming chamber (in and out) in correspondence to the entry doors.



NEW FRESH AIR INTAKE

Fresh air intake is more and more required to fulfill the double task:

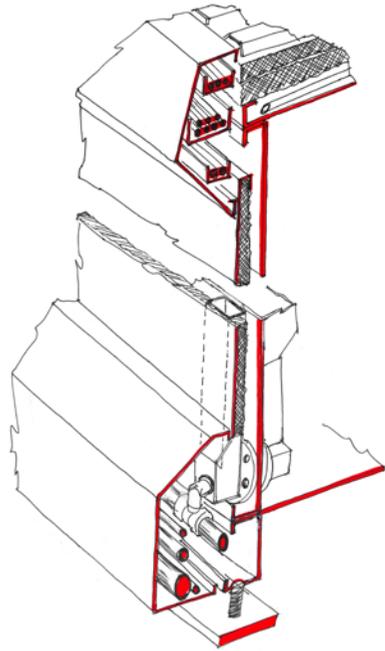
- A. Improve the color development in case of particular tone of colors (like cyan) which requires a higher oxidation value (particularly on digital printing dyestuff)
- B. Lower the temperature together with the atomized water to face the natural exothermic phenomenon of reactive dyestuffs.

Fresh air can be thus digitally controlled through the touch screen panel, in percentage of the amount of steam flow.



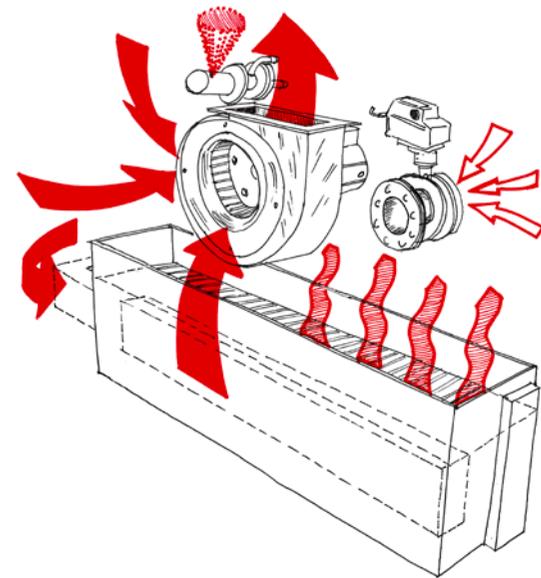
INDUSTRY 4.0 KIT

Our SIEMENS PLC and touch screen system can provide real-time power consumption, steam (both direct for steaming and indirect for anti-condensation system) and gas consumption to provide a cost per process meter. These data can be interfaced with a station to remotely view the operation of the machine, including system efficiency, ordinary and extraordinary maintenance requests, complete with alarm lists. The machine is equipped with a LAN connection and remote monitoring for diagnostic operations and software updates.



HYDRAULIC AND THERMAL PIPINGS

All water, steam, diathermic oil and compressed air supply systems are conveniently hidden by easily removable protection frameworks to ensure a totally linear and clean appearance of the system. At the same time this solution enables an easy access for extraordinary maintenance operations.



STEAM SATURATION FLOW BOXES

One of the main secrets of Geysers performance lies in the use of water flow-boxes for maximum steam saturation.

The steam line is subjected to several variables that can alter the uniformity of the steam and its saturation level which has a direct consequence on the development of colors. Geysers provides the injection of line steam into special tanks fed by water in order to bring the steam to its maximum degree of saturation and process efficiency.



INSPECTION WINDOWS

Geysers is equipped with 6 inspection windows with double insulating glass and 4 light fixtures. Each window is equipped with a wipers operated by an external manual control to allow an ideal visibility inside the vaporization chamber for the inspection of the folds and to enable a more accurate process control.



THE IDENTITY OF THE COLOR

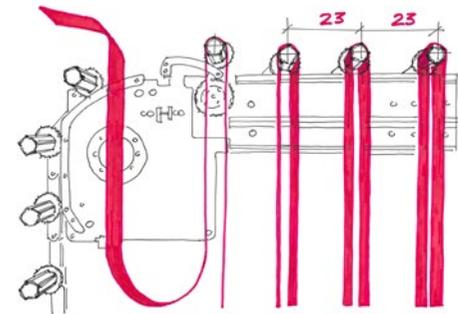
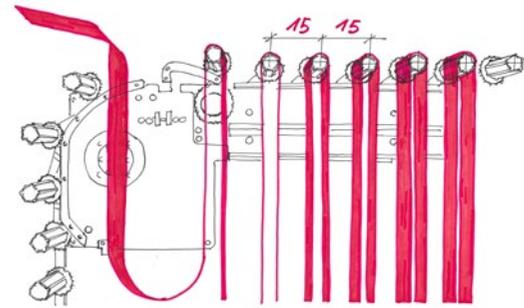
The choice of the combination of colors makes the supply prestigious and immediately recognizable, a true trademark of Pentek's production, giving a fresh and innovative appearance in line with the technical solutions introduced.

A special tag identifies Kromatica's central contribution in designing this new equipment.

The whole system has been designed to offer advanced performances and to ease use and controls, but also the installation, maintenance and utilities (steam, water, gas or diathermic oil and electricity). The cables are supplied together with the machine and cut to size according to the designated position of the electrical panel. Nothing has been left to chance to offer a purchasing and commissioning experience with high standards of quality and satisfaction.

GEYSER





PITCH 15 OR 23

Geyser can be mechanically predisposed for pitch 15 (15 cm distance between sticks interaxle) and pitch 23 (23 cm distance between sticks interaxle). Even when supplied with pitch 23, Geyser can be equipped with additional sticks for a change at any time in pitch 15. Step 15 is an excellent compromise, offering guarantees of sufficient distance for most fabrics and processes. The mechanical transition from step 15 to step 23 takes place by removing one stick every 3. Step 23 reduces the content by one third and therefore ensures in any case excellent production speeds. The absence of a double chain system and a stick storage area greatly reduces the operation risks and mechanical or maintenance problems.

INFRARED HEATING ON EXIT

At the machine exit, an infrared heating system can be optionally provided to allow the fabric to be folded in total safety in the absence of residual moisture. Particularly suitable for digital reactive prints and / or knitted items that tend to retain the humidity absorbed in the steaming chamber. The absence of direct contact between heat and fabric is a further guarantee for the printed product.



The sticks can be supplied indifferently – upon customer choice - with **silicon** strips or **fiberglass** coating.

SILICON COVERING

The **silicon** strips ensure greater grip when transporting and are recommended for knitted or slippery fabrics.

FIBERGLASS COVERING

The **fiberglass** coating is recommended for very light and high value fabrics.



GENERAL SPECS:

Model		140	180	220	260	300	340	380	420	460	500
MAX fabric content	Step 15	132	173	214	255	296	336	377	418	459	500
	Step 23	88	115	142	170	200	224	251	278	306	333
Working width	mm	2200 x 2000 - 2600 x 2400 - 3600 x 3400									
Loop size	mm	Min 600 – Max 4800									
Mechanical speed	m/min	40		50		60		70			
Dwell time	min	4-40		5-50		6-60		7-70			
Temperature	°C	102 – 185									
Noise level	dB	< 80									

PRODUCTIVITY:

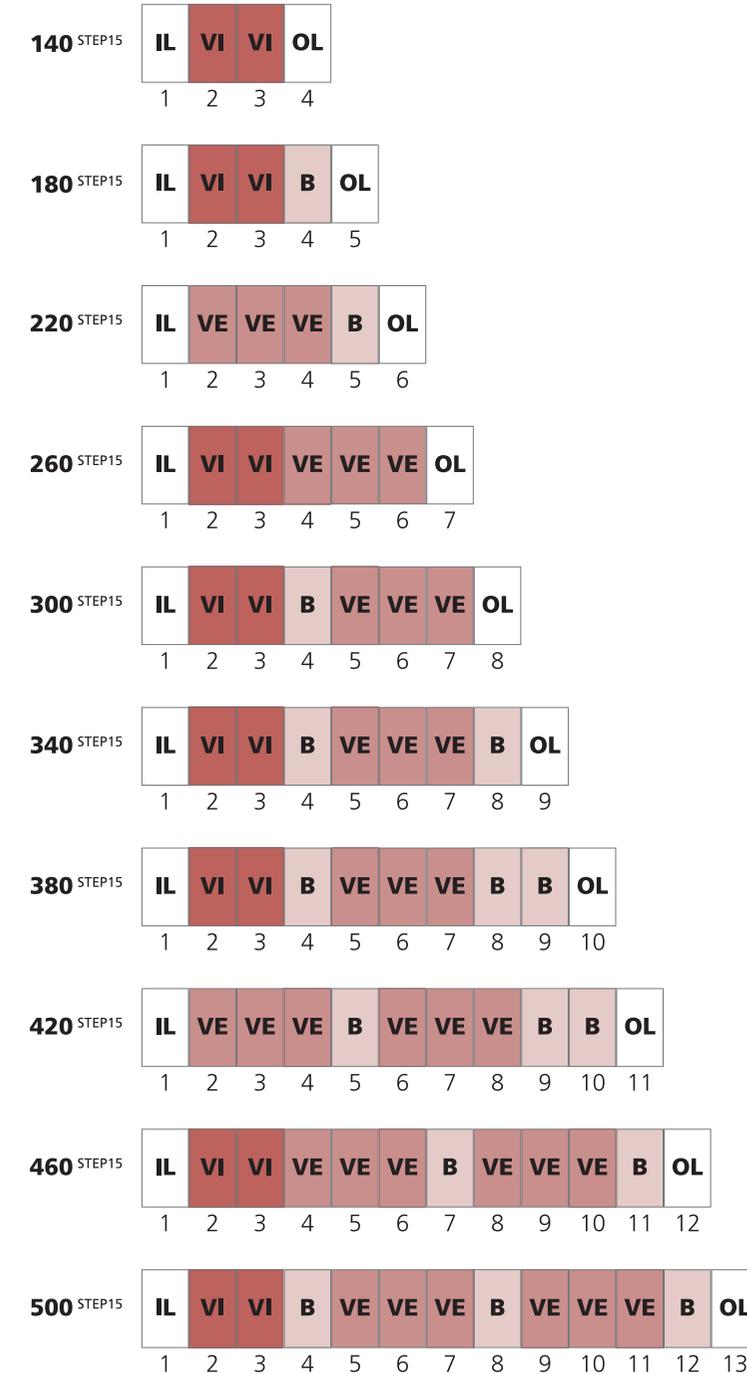
(below figures are purely indicative since speed depends upon composition, print coverage and specific nature of the goods)

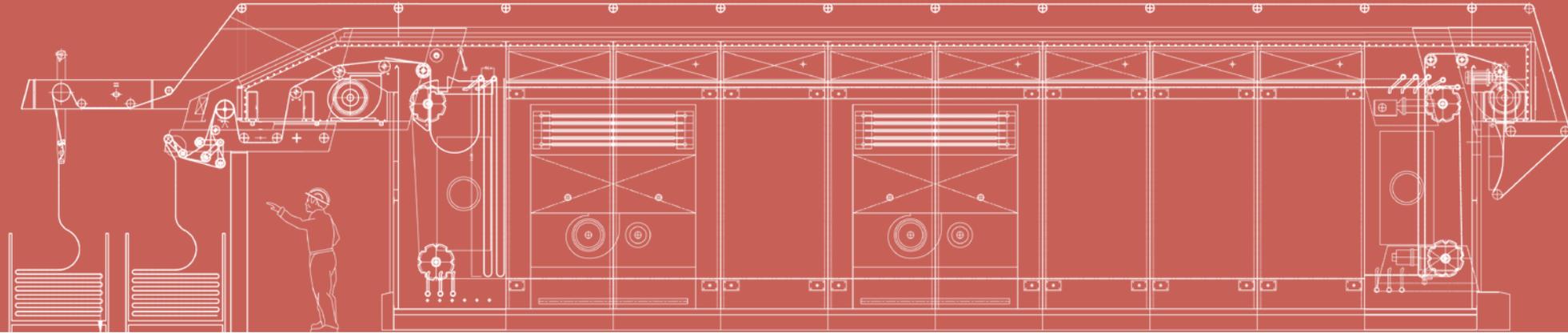
Process type	T°	Time	140	180	220	260	300	340	380	420	460	500
Reactive Prints (Step 15, max loop)	102° C	8 min	16	21	27	32	37	42	47	52	57	62
		12 min	11	14	18	21	24	28	31	35	38	41
Disperse Prints (Step 15, max loop)	180° C	8 min	16	21	27	32	37	42	47	52	57	62
		12 min	11	14	18	21	24	28	31	35	38	41
Acid Prints (Step 15, max loop)	102° C	30 min	4,4	5,7	7	8,5	10	11	13	14	15	16
		45 min	3	3,8	4,7	5,6	6,6	7,4	8,3	9,3	10	11
Pigment Prints (Step 15, max loop)	160° C	5-7 min	26	34	42	50	50	56	60	62	65	70

LINE CONNECTIONS:

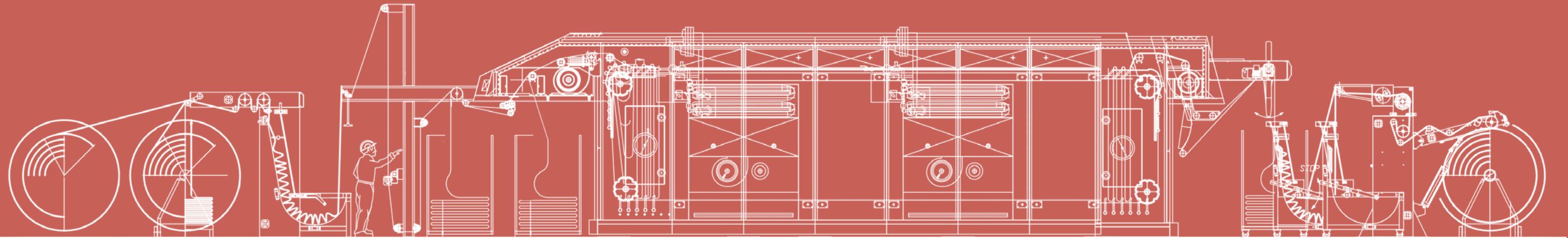
Utilities	Line Specs	140	180	220	260	300	340	380	420	460	500
Direct Steam (kg/h)	151° C 4 bar	220	280	320	400	450	500	550	650	700	750
		300	380	400	500	600	650	700	750	800	850
Thermal Oil	280° C 2-4 bar	160 kW (2 heat exchangers)			320 kW (4 heat exchangers)						
Natural Gas	150-200 mbar	180 kW (2 indirect burners)			360 kW (4 indirect burners)						
Electric Line	400-480 V 50-60 Hz	24 kW (up to 42kW with IR heating)			30 kW (up to 48kW with IR heating)						
Compressed Air	6 bar 1/2"	10-15 NI/h			15-20 NI/h						
Deminerlized Water	2,5-3 bar 1/2"	80-100 I/h			100-125 I/h						

CONFIGURATIONS & MODULARITY:





GEYSER 380



GEYSER 300



PENTEK TEXTILE MACHINERY Srl
Via Enrico Mattei, 10
59013 Montemurlo (PO) ITALY
Tel. +39 0574 871210
Fax +39 0574 871249

info@pentek.it
www.pentek.it