



A SPECIAL PNEUMATIC ACTUATOR FOR PERFECT AND "ENNOBLED" TEXTILES.

EVERY TEXTILE, IN ORDER TO IMPROVE ITS LOOK, THE "HANDLE", THE FEATURES, ALSO IN VIEW OF THE FUTURE FIELDS OF USE, MUST BE SUBJECTED TO TREATMENTS OF FINISHING. THE RENOWN O.E.M. IN BIELLA AREA , T.M.T. MANENTI, HAS FOUND IN BONESI PNEUMATIK A QUALIFIED PNEUMATIC PARTNER TO FURTHER IMPROVE THE QUALITY OF ITS PROCESSES, ON MACHINERIES AND SYSTEMS USED ALL OVER THE WORLD.

Experience, research and development, are the constant bents to satisfy all the needs of its Customers, with the help of the best technologies. This is the mission pursued by T.M.T Manenti in order to offer the highest level of quality in the field of textile machineries, with an activity started in 1981 in Vallemosso, in the Biella area, thanks to the passion of the founder and owner Mr. Angelo Manenti.

A way of growing which result is the wide range of technologies and machineries, from the preparation of the warp up to the finishing of the textiles. Plants and systems that, since the ninety years, are present and used also abroad. "An export, says Miss Monica Manenti, daughter of the owner and Commercial Responsible of the Company, that today represents for us around the 80 % of our turnover. China and India are in a pole position followed by Turkey and by the best references of the Italian Industry. It is in the domestic market that during the last two years the investments raised in this field, with our great satisfaction. On the contrary, if we consider the last thirty years, I can confirm the presence of our machineries almost all around the world, as a result of a commercial activity and a quality of the product well recognised and appreciated".

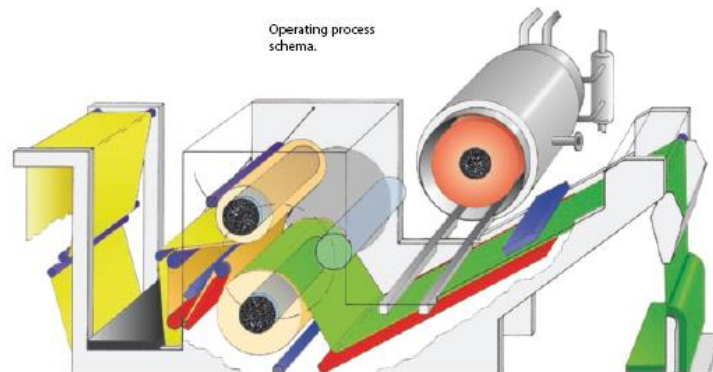


Fulvio Perazio, technical and sales manager of T.M.T. Manenti.

Monica Manenti, commercial responsible of T.M.T. Manenti.

Fabrizio Ghirardi, area sales manager of Bonesi Pneumatik.

The Company produces machineries for the textile field from the dry finishing that means an “ennobling” of the “raw” textile, obtained through specific processes (in which are placed various thermal, mechanical and chemical actions) that have the purpose to give: a final look without impurities and defects, shininess, the said “handle” in order to have a textile suitable for tailoring dresses, textiles for home or other purposes. It is on such machineries of the O.E.M. (base planted in Biella city) that are used standard Bonesi Pneumatik cylinders; more recent it is, on the contrary, the use of some special products studied, developed and realized according precise specifications changing its position from supplier to qualified pneumatic partner.



The process of shrinking.

“Our manufacturing objective - says Mr. Fulvio Perazio, technical and sales manager of T.M.T. Manenti – has been always oriented to a quality without compromises, also as far it concerns the components, standard and/or special. The choice to apply to Bonesi Pneumatik is a fact of continuity, with the added value to have found a qualified partner able to get at the best our requirements and our needs, to evaluate the peculiarities and at the end to realize valid and concrete practical solutions.

A recent example of the said co-operation is the realization of the PF 3000 STAR, machinery for dry finishing, very important in order to give dimensional stability to the textile. “The machinery – explains Mr. Perazio, shrinks under pressure the textile in autoclave, discontinuous process similar to quenching of any element. In other words, the textile, wrapped on a big holed cylinder, must be put and stay for a defined period of time at fixed values of temperature and humidity and then cooled down and unloaded from the plant”. Such conditions, that cannot be obtained all together in nature, permit to the textile to keep its features when it will be used for the final tailoring of dresses and during its consequent daily use. Three are the main parts completely integrated and automated composing the system: the first, in which the textile is wrapped and coupled as “sandwich” with the textile technically named “satin” and where, after the thermal treatment the roll is unwrapped, cooled and unloaded; a robotized system that alternate in sequence the position of the rolls and provide to their carry to autoclave; the last, that includes the chamber under pressure and all the hydraulic system to eliminate, by pressure or vacuum according fixed sequences, the steam and the air through

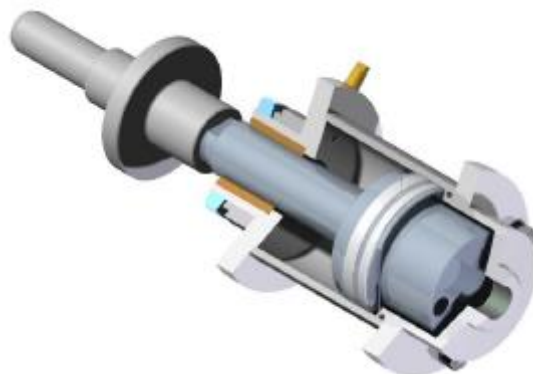
the roll to be treated. "The machine - says Mr. Perazio - discontinuous type, allows to obtain thermal cycles in the autoclave with pressures up to 2 bar, with the possibility to treat wool and also polyesters and viscose, giving an "handle" effect very aesthetic and permanent according the single specifics of the customer to whom the textile is addressed". Important and critical element in this process is the autoclave itself with its door with automatic opening (realized in diameter also higher than two meters, for volumes that can reach up to 13thousands litres). Both for the point of view of security (mechanical) and of the compliance to the various standards of the Countries where the machinery will be used the best sensitivity and duration must be guaranteed (to insure that the opening can be in the right condition of absence of pressure inside the chamber). "Very often the textiles and also the steam - underlines Mr. Perazio - can be treated with additives, acids, or substances that can react in the autoclave compromising the seals of the safety valve making necessary frequent maintenance". This is a problem that, thanks to the co-operation with Bonesi Pneumatik, has been solved with a valid solution. Active and important actor in order to achieve such result has been Mr. Fabrizio Ghirardi, area sales manager of Bonesi Pneumatik, that has coordinated the activities among the various offices involved.

The solution accepted.

After the examination of the specific matter, a special actuator has been developed, with the function of safety valve for the door of the autoclave, able to insure good features and duration of the system. For the machine in question, a cylinder of 100 mm bore with stroke of 70 mm has been realized, with piston rod and piston itself in stainless steel AISI 304 and the caps in anodized aluminium. "Previously - explains Mr. Perazio - for such kind of application seals of various materials have been used, for some aspects not the best for the rigid working conditions considering humidity, vacuum, condensation and so on. Continue cycles that in the time could degrade faster than expected the features of the materials, forcing to an extra maintenance often not foreseen".

On the other hands, considering the wide possible options (textile to be finished coming from various different origins, without the knowledge of possible additives during the production) it is very difficult or impossible to foresee all the alterations. In this scenery Bonesi Pneumatik, thanks to the know-how acquired during more than sixty years of activity, has realized an actuator with barrel internally chromium plated steel and, important, with a special piston seal in energized PTFE, with guide also in PTFE, added with graphite. The result is a product (mounted in vertical with the piston rod moving towards the top), single acting, operating with steam for the forward of the piston rod (with minimum starting pressure of 0,1 bar) and return by gravity (weight of piston rod and piston), that has been able to solve positively all the mentioned critical points. This is confirmed by the data concerning the time passed from the installation and the working cycles effected. "This special actuator - concludes Mr. Perazio - is not the sole component of Bonesi Pneumatik present in our machineries. For example, in the closure of the autoclave operates several standard cylinders, and also in other functions.

The solution for the function of security valve allowed us to further improve the reliability of this machinery and of others in our range".



Special actuator with function of "door safety valve" realized by Bonesi Pneumatik for T.M.T. Manenti.

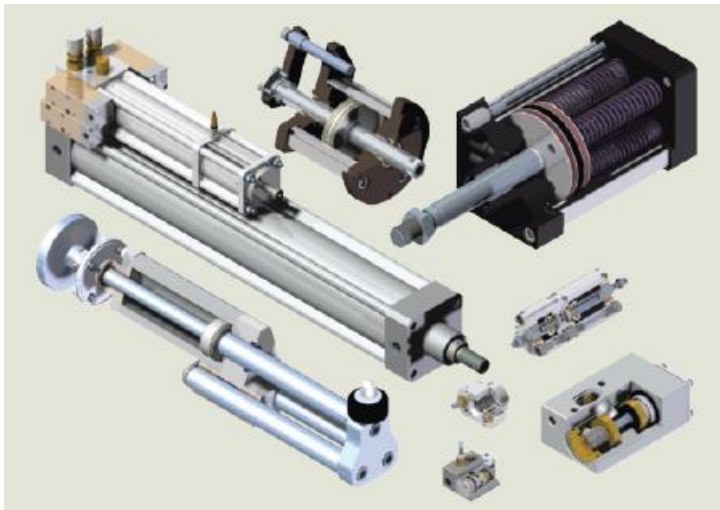
This is the confirmation that the co-operation between the two Companies was a continuous reciprocal attention about the needs, in order to get solutions able to produce benefits and operating advantages and to further increase the quality of the machineries and the plants realized.

From the study of the application to a special product.

In order to always, better attend to the needs of flexibility of the O.E.M., Bonesi Pneumatik since time has implemented the way of the “special product”, evaluating all the possible requirements of special applications and spending all efforts to satisfy them at the best.

Like the success obtained together with the Company T.M.T. Manenti.

This choice is a solution particularly appreciated by the actors in the market and it is possible thanks to the professional and the competence of its sales office able to understand the needs of the Customers and of a technical engineering office able to develop products according to specifics, also in the presence of limited quantities. In detail, the combination of



mechanical solutions very precise with pneumatic actuators, allows the realization of integrated mechanical groups supplied “completely finished”. The fast timing of developing of the products, with the consequent reduction of the time-to-market, is possible thanks to the advanced Cad 3D systems used and to the direct contacts of the Bonesi technicians with the technicians of the Customer. This is also possible thanks to the potentiality of the Production Unit of Bonesi Pneumatik in which operates 25 CNC some of them subservient by anthropomorphous robots and many other machine tools. There are also not less important tools for assembling and testing and printing laser machineries for the useful finishing of the products and their more correct and complete vision of the data, always more requested. Bonesi Pneumatik in Legnano (MI) develops, produces and distributes its products to the domestic and to the international markets considering the Made in Italy one of its strengths.

The best of the mechanical-textile technology speaks Italian.



The series PF 3000 includes n° 4 models with autodave from 1.200 to 2.200 mm of diameter.

With headquarters in Vallemosso (BI), T.M.T. Manenti was established in 1981, specializing since the beginning of its activity in the development and the realization of a range always more wide of technologies and machineries: from the preparation of the warp, up to the dry finishing of the textile. Established by the present owner Mr. Angelo Manenti, the Company, thanks to its location in the district more important in the word for the wool, together the direct experience of the final users, has reached in a short period of time a leading position, recognised all over the word for its reliability.

A constant and continuous grow that allowed the constitution of a Group to which today belong also Cimi Textile Machines, acquired in 2010 with

headquarters in the nearby Cerreto Castello (BI) operating in development of textile machineries for the wet finishing and Mat, a Brand from the Brescia area (from which also the know-how for the wet finishing has been got and the relevant machineries are today still developed in Cimi). A staff of around fifty people is dedicated to the mechanical, electrical and pneumatic engineering. A Made in Italy production that represents today for the Group the possibility to produce in the area of the finishing a big part of the necessary technologies.



Detail of autoclave with its door of automatic opening (realized in diameters also higher than two meters, for volumes that can reach up to 13thousands litres).