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SCHEDA PROGETTO

Codice	**10-002**	**Centro servizi**
Titolo	Presentazione di un modello di Centro Servizi: *Consulting to the Multi-skilled Development Center (MSDC) at Kanpur*	
Data inizio	Dicembre 2010	
Data fine	In attesa di seguito	
Area Geografica coinvolta	Asia	
Paese coinvolto	India	
Area-Località di svolgimento	Kampur	
Settore	Calzatura	
Tipo di Progetto	MSDC, Centro di formazione multisettoriale: consulto per l'orientamento dei corsi e delle metodologie organizzative	
Idea Progetto	Presentazione di un modello di Centro Servizi	
Obiettivi generali	Proposta di collaborazione per l'avviamento di MSDC in India	
Obiettivi specifici	Un rapporto dettagliato su tecnologia e centri servizi	
Tipo di attività svolte	Indagine locale e presentazione di un rapporto propositivo	
Valore del progetto	€.10.000,00	
Finanziatori	IL&FS Cluster Development Initiative Limited	
Esecutori	PISIE	
Partner	IL&FS	
Beneficiari	Multi-skilled Development Center (MSDC), gli imprenditori ed I lavoratori della calzatura di Kampur	
Risorse umane	2 esperti	

I. Introduction

(1) The Indian Leather Sector

(a) The Indian Leather Sector occupies a very important place in the Indian economy on account of substantial export earnings, potential for creation of employment opportunities and favourable factor conditions for its sustained growth. The exports of leather & leather products increased from US$2.2 billion in 2003-04 to about US$ 3.5 billion in 2007-08. The industry ranks 8th in terms of foreign exchange earnings of the country. It employs about 2.5 million people, of which, about 1.77 million persons are employed directly and a majority are from vulnerable sections of society

(b) The sector has registered a compound annual growth rate of (CAGR) of 8.61 percent in exports over 2002-07. Simultaneously, the composition of exports has been changing, with an increasing share of value added products in the export basket, from 7 per cent in 1956-57 to around 80 percent, in 2007-08. Footwear is the largest value added product exported, constituting about 42% of total leather and leather product exports form the country (2007-08). India accounts for a share of 2.62% in the global leather trade during 2007. It is estimated by Council for Leather Exports (CLE) that India has the capacity to meet nearly 10 per cent of global leather requirement and would double its leather exports over the next 5 years

(c) The industry is clustered in pockets spread all over the country. While tanning is mainly concentrated in Tamil Nadu, Kanpur, Kolkata and Jallandhar, the footwear industry is concentrated in Agra, Kanpur, Noida, Chennai, Ambur and Ranipet. In the past, Mumbai and Kolhapur used to be strong in some types of footwear, known as Horachis and Kolhapuris; but of late, their importance as production centres has declined. Kolkata and surrounding areas produce a sizeable volume of footwear for the domestic market. Leather garments are concentrated in Delhi and Chennai; leather goods are dominant in Kolkata, with Chennai and Kanpur also producing some volumes. Saddlery manufacturing is concentrated in Kanpur alone

(2) Kanpur Leather Cluster

(a) Kanpur is one of the leading clusters for leather and leather product production and exports in the country. It contributes about 20% of total leather and leather products exports from the country. The table below gives the status of Kanpur's exports vis-à-vis the leading leather clusters in the country:

Region	Major Clusters	Exports in 2006-07 (Rs crores)	% Share in Total Exports
South	Chennai	5506.53	38.78
North	Agra, Jallandhar	3048.75	21.48
Central	**Kanpur**	**2776.00**	**19.36**
East	Kolkata	2032.33	14.30
West	Mumbai	862.94	6.08
Total		**14,200.01**	**100.00**

Source: Council for Leather Exports

(b) The cluster comprises of about 1600 units engaged in activities along the leather value chain producing semi-finished / finished leather, footwear, saddlery and other leather products, with direct / in-direct employment of more than 1 lakh persons. There has been a phenomenal growth in exports of Kanpur cluster from Rs.1274 crores in 2001-02 to Rs.2776 crores in 2006-07

(c) The industry in Kanpur comprises different sub sectors and the major sub-sectors are:

(i) **Tanning:** There are about 300 units of varying sizes and operating on different value chains. There are 30 large units with production capacity of 1000 hides per day, and about 100 small units with capacity of 30-150 hides per day. About 50 units are only into processing raw hides to wet blue 70 units are doing mainly job work

(ii) **Footwear:** In footwear and component sub sector there are about 1100 units, constituting the largest segment in terms of number of SME units in the cluster. There are about 100 big units out of which, 50 organized units make safety and fashion footwear with a production of 1000 pairs per day. The other 50 units are involved in making shoe-uppers which are largely being exported. The remaining 1000 are house hold units with a capacity of 50 pairs per day

(iii) **Saddlery:** There are 25 organized and 175 house hold units making saddler items and almost the entire production is exported

(iv) **Leather Garments and Gloves:** The presence of units manufacturing leather goods, garments and gloves sub sector is also increasing with about 40 units

(v) The table below gives a Snapshot of the performance of Kanpur Leather Cluster:

Sub Sector	Estimated number of Units	Estimated Turnover (Rs. Cr)	Exports (2005-06) Rs. Cr.	Exports (2006-07) Rs. Cr.	Growth YoY (%)	Kanpur's share in India's Exports
Finished Leather	300	1500	751	1186	58	26%
Footwear	1050	901	614	785	28	20%
Footwear Components	50	276	191	257	35	23%
Saddlery	200	408	365	408	12	95%
Other Products	40	164	116	140	21	5.68%
Total			**2037**	**2776**	**36**	**20%**

II. Project Background

(1) Context

(a) The leather industry is expected to grow significantly due to favorable conditions in export as well as the growth in the domestic markets. Besides, the conditions are quite appropriate for increased share of value added products, as evidenced by the past trends. However for sustaining the growth potential, particularly in the value added segment, the industry requires a large pool of skilled workforce. Apart from demand for new workers, there is a great need for capacity building of existing workers in order to improve productivity and competitiveness

(b) The demand for labor and capacity building of existing labour force is felt across the value chain both within the industry as well as its various segments. While maximum number of jobs would be created at the shop floor level, there is also a matching demand for skilled supervisors, designers, production managers, etc

(c) The existing institutional capacity for skill development is limited. Further many of the institutions do not cater the dynamism in the industry; many of the courses do not lay the needed emphasis on the practical aspects and thus do not focus on "employability" aspects. There is a large gap in quantitative as well as qualitative aspects among the existing training infrastructure. The proposed project aims at meeting these gaps and thus assists the industry in terms of provision of employable labor besides improving labor productivity through appropriate capacity building

(2) Project Scope

(a) The project targets an output of about 12,000 trained youth who will be placed in the industry in various positions across the value chain during the Eleventh Five Year Plan. A Multi Skill Development Center (MSDC) will be established with state of the art training infrastructure to achieve the target

(3) Project Sponsors

(a) Leading exporters from the industry have established a Special Purpose Vehicle (SPV) company called Kanpur-Unnao Leather Cluster Development Company Limited (KLC) to collectively address various common competitiveness challenges including skill development and infrastructure. KLC has identified skill development, among others, as a vital focus area for the actualization of the growth opportunities. KLC would take the lead in establishing MSDC, which will be a centre of excellence in Human Resource Development (HRD), offering multiple

courses and programmes to benefit the entire Kanpur leather cluster. Initially the focus would be to provide market led courses linked to placement in the local firms in the industry. Going forward, KLC aims to promote the institute to include various industry led events, seminars, conferences that will not only benefit players in the Kanpur cluster, but also the entire industry

(4) Kanpur-Unnao Leather Cluster Development Company Ltd

(a) Kanpur-Unnao Leather Cluster Development Company Limited (KLC) has been formed as Special Purpose Vehicle Company (SPV) in collaboration with IL&FS Cluster Development Initiative Ltd (IL&FS-CDI). KLC represents the industry leadership in bringing about the needed improvements in the hard and soft infrastructure for the industry, to address various competitiveness issues. IL&FS-CDI has partnered with the industry to share its experience and expertise in managing and implementing Public private partnerships and provide its advice to the industry I implementing the various projects identified by KLC

(b) KLC aims primarily at developing infrastructure projects that address the needs of the Kanpur leather cluster. Some of the pressing needs that affect the competitiveness and growth prospects of the cluster are: availability of uninterrupted and good quality power, effluent treatment infrastructure, testing facilities, skilled manpower shortage, etc. KLC aims to address these constraints through cluster based collaboration so that the common needs of the cluster participants are met. KLC has identified setting up of common effluent treatment plant, power plant, common testing lab and skill development as priority areas

(c) KLC proposes to establish a vocational education institute in Kanpur that will be an international centre of excellence aimed at imparting professional education in leather industry, particularly for the benefit of the footwear industry. This would enable industry to sustain growth and also create tremendous employment opportunities, many of which will lead to poverty alleviation The Centre would establish global partnerships with institutes of excellence to enable global knowledge sharing and bring in best practices in vocational education and establish global benchmarks in performance

(d) IL&FS CDI the co promoter of KLC, brings with it, a rich experience of conceiving and implementing several PPP projects in physical and social infrastructure. IL&FS CDI provides commercially sustainable integrated business and institutional framework and solutions for the development of micro, small and medium enterprise clusters on PPP basis that would enable them to become globally competitive. IL&FS CDI has been working in various employment intensive sectors such as textiles &

apparels, footwear, food processing, engineering, etc. on a cluster concept, providing services related to project development, financing, engineering & designing of infrastructure, technology & market linkages and skill development

(e) With the objective of providing employable labor to industries which experience shortages in skilled manpower, skill development initiatives are being undertaken by IL&FS CDI across various sectors. Projects on vocational training, linked with placement, are being implemented by IL&FS CDI in sectors such as apparel, leather, services, etc. It has set a target of imparting employable skills to 5 lakh unemployed youth within 5 years. Named "Skills PRogramme for Inclusive Growth (SPRING), this program has twin objectives: to meet the skill requirements of the industry and in the process, also enable inclusive growth. Within a short period of 13 months, IL&FS CDI has set up 50 training centres under the PPP model and has trained about 14,000 persons, of which 13,000 have been placed in industry. In its skill development programs IL&FS uses cutting-edge, indigenous and affordable solutions in technology, training, content creation, and delivery services. It has delivered training mandate to a large number of varied clients such as the Central Government Ministry, State Governments, schools, banks, CRPF, and the International Labour Organization (ILO)

III. Manpower Requirement & Institutional Capacities for Training

a) At the national level, CLE has estimated that the industry has the potential to register impressive growth from about $3 billion to over $7 billion. With the increasing share of value added products in the production, it is expected that the footwear and product segments will have a significant share of this projected growth. Among the various value added products, footwear is expected to register rapid growth with its share in overall leather exports expected to increase from 38% currently to 56% by 2011. The value of footwear exports is projected to be US $ 4.3 billion out of the total US $ 7 billion in 2011. Kanpur is expected to be a major contributor towards achieving this target given that it is the largest center for safety footwear outside China and has a very fast growing formal footwear segment

b) The Kanpur cluster, which accounts for 20% of the country's exports, is also expected to experience rapid growth in at least retaining its overall share in the growth. The cluster currently provides direct and indirect employment to over 100,000 people. This is expected to grow significantly with the expected growth opportunities in the value added products segment in general and leather footwear / products segment in particular

c) Within the footwear and products segment, the need for skilled manpower is the largest at the operator level, namely for stitchers, clickers and lasting operators. There will also be a matching need for skilled supervisors, designers, merchandisers, etc. The Footwear sector in Kanpur is the fastest growing sub-segment and employing maximum number of skilled workforce. The growth of this sector calls for increased demand of the skilled manpower. As per a study conducted by IL&FS-CDI, based on a conservative estimate of continuation of current growth trends, it is estimated that the footwear segment alone will need about 30,000 trained youth during the next 4 years

d) The availability of cheap and growing work force in the country, which is often referred to as the country's "demographic dividend" has ironically failed to cater to the increasing demands of the industry, due to lack of sufficient efforts at imparting employable skills. The insufficient number of people with appropriate employable skills and the lack of required infrastructure in skill development limit the growth potential of the industry

e) There are currently about 53 institutions engaged in imparting leather related education and skills training in the country. Of these about 4 institutes are located in Kanpur. These institutes offer certificate, diploma, degree and postgraduate diploma courses in leather and footwear technology. The duration of the courses varies from 1 year to 4 years

f) The Central Leather Research Institute (CLRI), Hartcourt Butler Technology Institute (HBTI) Kanpur, and Government Leather Institute are engaged in

providing tertiary level education. International Institute for Saddlery Technology and export Management (IISTEM) offers diploma and operator level training modules, mainly with a focus on saddler industry. The current institutional infrastructure for training across various levels of skills does not adequately address the requirement of manpower of the industry. The capacity for operator level training, which is likely to generate maximum demand, is just about 200 as against demand for about 8000 persons annually. Besides, at the qualitative level, the courses being offered are not in tune with the practical needs of the industry

g) The current institutional infrastructure in and around Kanpur cannot fulfill the increasing demand for the skilled and semi skilled workforce. Thus there is a large gap between the demand and supply of manpower. The emerging skill shortage, due to the mismatch between the demands for specific skills and available supply, is a constraint to the possibility of actualizing the robust growth potential of the industry and has, in fact, emerged also as a critical factor impacting the competitiveness of the industry

h) As mentioned above, exports of footwear and footwear components are expected to register maximum growth. The tables below estimate manpower requirement in this segment based on growth trend:

Export of Footwear from Kanpur cluster

Commodity	2005-2006		2006-2007		2007-2008	
	No. of Pairs in Million	Fob. Value (Rs. Cr)	No. of Pairs in Million	Fob. Value (Rs. Cr)	No. of Pairs in Million	Fob. Value (Rs. Cr)
Footwear	12.1	593	14.8	785	19.2	780
Footwear Comp.	9.5	191	12.8	257	12.8	303
Total	**21.66**	**784**	**27.6**	**1042**	**32.0**	**1083**

(i) The following table provides the current capacity and estimated additional capacities considering the above trend continues:

Current and envisaged production capacities

Product	Present Capacity (2007-08)	Envisaged total capacity in 2011-2012	Envisaged Additional Capacity
Footwear & Component	32 million pairs	56 million pairs	24 million pairs

(j) The table below provides an estimation of present manpower employment in the leather footwear and component (upper stitching) segment of Kanpur leather cluster:

Estimated present employment: 2007-08

Product	Exports (Rs crores / Annum)	No. of Pairs in Million	No. of Operators	Corresponding Estimated Employment (Pairs / day)
Footwear	780	19.20	400 / day / 1000 pairs	25,600
Components (Upper)	303	12.75	325 / day /1000 pairs	13,650
Total Employment				**39,250**

(k) Based on the above projections and the interactions with industry associations, the overall additional manpower demand by the footwear segment of leather industry in Kanpur by 2012 is estimated at about 30,000 as indicated in the table below:

	Present Capacity (2007-08) /	Envisaged Additional Capacity	Envisaged total capacity in 2011-2012
Footwear & Component / Annum	32 million pairs	24 million pairs	56 million pairs
Footwear and Components / day @ 300 days working	1,06,677 pairs	80,000 pairs	1,86,667 pairs
Employment	**39,250**	**29,430**	**68,680**

(l) The following table provides a break up of skilled manpower required for each of the departments in footwear fabrication:

Product	Unit (Pairs)	Clicking	Closing	Lasting	Finishing	Supervisors	Others
Footwear	1000	42	252	60	15	16	15
Total		**400**					

(m) Accordingly, the table below provides skill wise manpower requirement of leather footwear and component industry in Kanpur by 2012 for various skills:

Employment	Present Employment 2007-08	Expected Total Employment 2011-12	Additional Manpower Requirement
Clicking	4121	7211	3090
Closing	24728	43268	18541
Sub Total	**28849**	**50480**	**21631**
Lasting	5888	10302	4415
Finishing	1472	2576	1104
Supervisors	1570	2747	1177
Others	1472	2576	1104
Grand Total	**39250**	**68680**	**29430**

Note: The spread of manpower across different processes is based on discussions with the industry

IV. Project Proposal

a) KLC proposes to establish a MSDC in Kanpur that will be an international Centre of Excellence aimed at imparting vocational training in leather industry, improving productivity and sharing global best practices in the leather processing and manufacturing

b) Initially, the institute will cater to the immediate needs of the Kanpur leather cluster, particularly in meeting the large skill gaps currently being felt in product segments. Currently, the shop floor work force constitutes about 90% of the total workforce. So the demand for skilled manpower at the operator level is the highest, with a matching need for good supervisors, designers and those at middle management levels. Keeping in mind the above need, the Project will initially focus on training at three levels; shop floor, supervisors and middle management

c) The Institute will also be positioned as a service provider in various related areas. These would take the form of conferences, seminars, executive development programmes, consultancy on productivity improvement, technology upgradation and so on

(1) Training Courses

(a) The centre will focus on HRD, which will lead to improved productivity in the leather industry. Accordingly, the centre would offer courses relevant to the industry across the value chain, across most segments of the industry. The courses would be tailored to address gaps in training facilities for improved productivity on shop floor, besides enhancement of capacities in supervisory, managerial and support areas

(b) A large part of the programmes would cater mainly to the operations such as clicking and closing, and related supervisory and managerial courses. These skills are required in the footwear, apparel and products segments. Considering the importance of Saddlery in Kanpur, there will be emphasis on introducing programmes aimed at bringing about professionalism in the segment as well. Given its potential for rapid growth as compared to other segments, footwear segment is expected to be the largest clientele for the Institute. Based on needs and the emerging opportunities, the focus of courses would also expand to include other areas such as tanning, generic support services such as computer operation, retail activities and so on

(c) The training courses would be structured in such a way that the needs of industry are met. Since the courses are highly skill oriented a large component of the course emphasis will be on practical training in the form of different exposure visits to the industry and the guest lecturers by industry professionals

(d) **Course Objectives**

(i) To provide knowledge and skills to work as a professional in the occupation according to the requirements of the potential employers in the industry

(ii) To develop abilities to operate and use equipment, tools and instruments used in the trade

(iii) To develop soft skills and attitudes to integrate smoothly in the employment environment

(e) The initial list of courses to be offered by the institutes are as follows:

Sr. No	Courses Offered	Duration	Batch Size
1	Clicking Operator	6 weeks	30
2	Closing Operator	6 weeks	30
3	Supervisory Course in footwear technology	6 months	25
4	Supervisory course in machine maintenance	6 months	25
5	Supervisory course in footwear technology	6 months	25
6	Training course in Quality Control	6 months	25
7	Training course in merchandizing	6 months	25
8	Training Course in Export Management	6 months	25
9	Training course in footwear manufacturing technology	1 year	50
10	Training course for creative designing	1 year	50

(f) The training program will have 30 trainees per batch for Clicking and Closing operation. The duration for the course will be 6 weeks. The syllabus will include basic training; machine operation and key performance points followed by periodical assessment tests. The total number of persons to be trained is more than 3000 every year.

(2) **Training Methodology & Design**

(a) Training would be so designed to take into account, the special needs of a range of beneficiaries with varying profiles, such as person with varying levels of literacy, education, skill, economic status, cultural differences, occupational aspirations, gender sensitivities etc.

(b) The training techniques for imparting skills to the targeted beneficiaries would be different from the traditional approach of training in a formalized training programme. It is essential to integrate theory, practical and attitudinal experiences and relate them to the occupational standards for motivation. Trainers will have freedom to use their judgment, ingenuity and innovative efforts in designing instructions, which produce the best results. More than 80% of total course duration would essentially be hands-on-practice

(c) The training would be based on specially designed competence based curricula taking into account the aptitude of the prospective beneficiaries and needs of the potential employers. The training methods and modes to be adopted are:

(i) Demonstrations
(ii) Tutorials (individualized attention)
(iii) Small projects
(iv) Mini-lectures, assisted with models and multimedia aids
(v) Self learning materials, material already available in training institutions
(vi) Workshop/ Laboratories
(vii) Visits to sites, industries

(d) Course delivery would be supported by need based use of multi-media and innovative teaching aids. The use of multi–media technology in addition to providing audio-visual content will also provide the following advantanges:

(i) Standardization of content
(ii) Increase in number of people that can be trained at a time
(iii) Candidates can learn at their own speed thus offering them flexibility
(iv) Shortage of trainers, if any, can be suitably addressed
(v) Intricate techniques and 'difficult to teach' topics can be simulated
(vi) Flexibility and improved learning experience for the trainees

(e) Considering the low communication skills of a majority of the target segments that will be trained on shop floor operations, a multi-media approach of the programme can help the trainers communicate the concepts in a better manner and enable faster acquisition of skills

(f) For introducing flexibility and to make training effective and interesting, the content will be broken down into short modules

(g) Trainee manuals with training material will also be provided to the trainees. The trainers will also be provided a comprehensive manual for standardised and effective delivery of the course content

(h) Training Strategy for Adult Learning: Majority of the participants in the programme will be young adult learners, many of whom might be from marginalized and deprived communities, who have a typical learning style and behavioural profile. The programme would therefore address the following issues:

(i) Young adult learners tend to decide for themselves what is important to learn. As such, learning strategies need to enable them to see an overall picture and then pick-up those parts considered important to their learning

(ii) Young adult learners need to validate the information presented based on their beliefs and experience. Co-operative and Collaborative Group Learning whereby the trainee becomes a resource person is an essential part of the training strategy

(iii) Young adult learners expect that what they are learning will be useful in their long-term future and hence a key focus of the learning outcomes is the acquisition and development of skills that make the learner employable or self-reliant

(iv) Young adult learners from marginalized communities, backward classes and women tend to be inhibited in formal training sessions facing a trainer. Technology enables the trainer to be a facilitator and guide on their side rather than reinforce the superior-subordinate relationship

(3) Life / Soft Skills

(a) As the project is targeted at the underprivileged segment of the society with little exposure to the emerging opportunities in the market place, it is felt necessary to provide additional training to make the trainees self confident and capable of integrating smoothly in the industry work environment and meet industry's requirements. Accordingly, special emphasis would need to be laid on developing soft skills and provide supplementary inputs to the trainees

(b) Emphasis will be laid on developing skills like basic oral communication, teamwork, etc. Besides candidates would also be made aware of how they can contribute to the success of the enterprise, the possible challenges to the enterprise, including job redundancy, so that they constantly strive to upgrade their skills after obtaining placement. A soft skills module called Life Skills and Knowledge (LINK), developed and used effectively by IL&FS-CDI in similar programmes, will be imparted to the trainees to improve the overall self esteem of the students. LINK would cover

essential life skills such as hygiene, maternal health, savings, insurance, workplace etiquette, group behaviour, etc.

(c) The above initiatives of developing soft skills, innovative training inputs and pre and post-training counseling would serve the aim of providing the industry with manpower that will not just use the jobs as a means of livelihood, but will also be motivated and willing to move up the value chain and contribute to innovations in the job. Also it will reduce the likelihood of high employee attrition

(4) Supplementary Training Inputs

(a) In order to enhance the effectiveness of the trainees for prospective jobs, the training programme would include additional training inputs. It is envisaged that these additional inputs would enable condition their attitudes and adapt themselves to the workplace. These additional inputs would come in the form of:

Factory Visits: To enable the trainees to get a feel of the actual working environment

Guest Lectures: By industry professionals, particularly for supervisory level courses

(5) Trainers

(a) To run various programs simultaneously and ensure optimum utilization of infrastructure, it is proposed to deploy skilled and adequate resources for conducting the training programmes. These resources would be specialists in areas required for training the youth and carefully chosen. On need basis, support staff would also be deployed to assist in the smooth conduct of the program

(b) The success of the training programme would depend on the trainers and the quality of training. To ensure quality and standardized delivery of the programme across the country, the trainers would undergo a specially designed "train the trainer" (TOT) programme on an ongoing basis. The course content for TOT would be developed by IL&FS-CDI, which has extensive experience in that regard. This programme would enable the trainers to effectively use multi-media for delivery of the course; impart pedagogic skills; appreciate the needs of the trainees; improve their own soft skills; and orient themselves to the needs of the industry. The programme would also instruct the trainers on the best practices in production worldwide. The TOT would also include special modules on objective assessment methods and assessment criteria, besides providing orientation in soft skills. Subsequently, a refresher course would be

planned to introduce course corrections to the content, delivery, administration, etc

(6) Guidance

(a) Guidance should be considered as a continuous process spanning the entire training programme. It should ensure that individuals are provided with prerequisites to pursue courses of training designed to realize their potential and fulfill their life plans, to facilitate transitions back and forth as needed between training and the world of work, their occupations for developing a satisfying career

(b) Guidance system should help the trainees to choose the training programme best suited to their needs & interest and enable them to make effective choices.

(c) Guidance will take into account the requirements of the employment, the individual and the family. It will ensure that all necessary information concerning the work and career opportunities is available and actively disseminated

(d) Particular attention will be given to guidance for girls to ensure that:
   (i) Guidance is gender-inclusive and gender sensitive to take into account the psychological, social and personal problems.
   (ii) Girls are encouraged and motivated to take advantage of the opportunities available

(7) Assessment, Evaluation & Certification

(a) Assessment / Evaluation will be the integral part of the learning process. An efficient system of assessment and evaluation of skills or vocational competence is one, which identifies an individual who fits into the job for which he/ she is trained. Such a system has to be systematic, objective, transparent and reliable. Continuous evaluation of the teaching and learning process including formative assessment will be undertaken with participation of faculty, learners and external assessors to ensure that the programme is effective

(b) **Certification**: Every student will be awarded a certificate evidencing completion of the course. The certificate will be based on third party assessment satisfactory to the industry. Based on industry feedback, the centre will consider options for award of certificates by National Council for Vocational Training, FDDI or CLRI. The Centre will issue the certificate, which will list the competencies acquired by the trainees

(8) **Organisational Structure**: The Centre would be managed by a Director, who is well versed in the sector, with a passion for academic excellence, research, innovation and industrial productivity issues. The Director will report to the Board of Directors of KLC. In order to ensure that the Director's energies are not dissipated in routine administrative matters, he will be supported by the Project management team of IL&FS-CDI, which has extensive experience in managing large scale skill development programmes. The Centre would be supported by professionals discharging their respective responsibilities as the heads of the following cells:

(a) **Training Cell:** Head-Training cell, supported by technical faculty, would be appointed during construction stage and would continue during the operations stage and would have the following responsibilities:

(i) Pre-Training Phase:
- (AA) Planning and development of Course Curriculum
- (BB) Employing core faculty for each sector
- (CC) Planning and Development of Capacity building for faculty

(ii) Training Phase:
- (AA) Training
- (BB) Mentoring
- (CC) Preparation of candidates for next stage of employment
- (DD) Arranging faculties

(iii) Post Training Phase
- (AA) Co-ordination with placement cell
- (BB) Mentoring and advise on trouble-shooting for induction in industry working environment
- (CC) Course examination and certification

(b) **Candidate Sourcing, Placement & Corporate Communication Cell**

This Cell would be led by a senior professional responsible for the following activities:

(i) Pre-Training Phase
- (AA) Outreach programme formulation and rollout
- (BB) Development of soft skills and other foundation course modules
- (CC) Establishing Industry Linkage

(ii) Training Phase
- (AA) Enrolment of the candidates
- (BB) Mentoring

(CC) Coordinate with Training Cell for conduct of soft skill courses

(DD) Obtaining firm commitments from industry for placement

(iii) **Post Training Phase**

(AA) Mentoring and advise on trouble-shooting for induction in industry working environment

(BB) Handholding for self employment

(c) **Administration Cell**

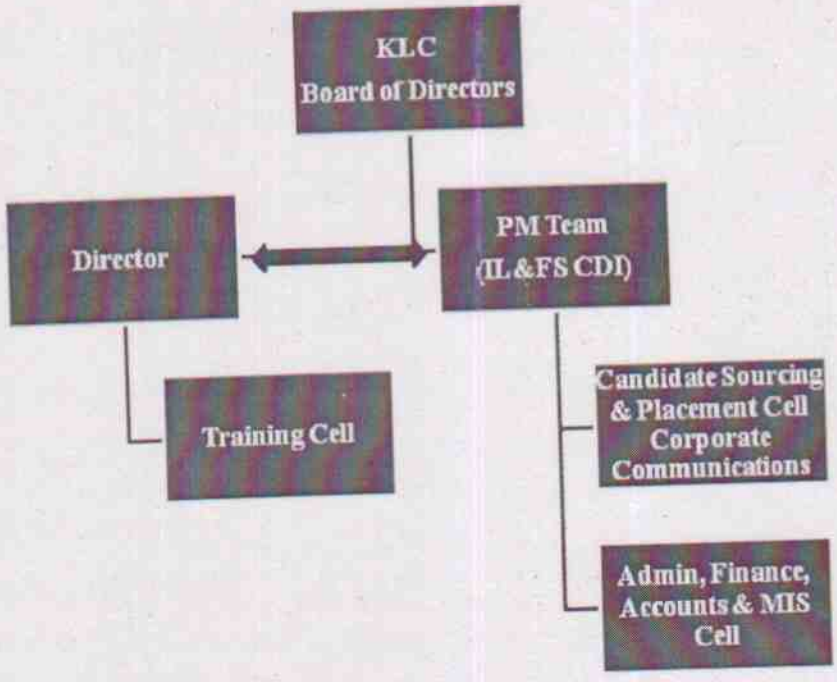
Administration Cell would comprise of an Administration Officer with required support staff to perform the following operations:

(i) Maintenance of the Training Center
(ii) House Keeping
(iii) Daily IT Operations
(iv) Employee Management
(v) Material Procurement
(vi) Electricity / Water Supply

(d) **Finance, Accounts & MIS Cell**

This Cell would take care of the day-to-day accounting operations, submission of compliance reports to EPB-GoUP, MIS, impact assessment and related functions

(e) **Suggested Management & Organisational Structure is as under:**



(9) Infrastructure Requirement

(a) The Skill Development Centre is conceived as a centre of excellence in HRD. It would have complete infrastructure facilities comprising institutional building, class rooms, staff rooms, workshop, laboratory, library, computer centre, stores, etc. required for providing job oriented training leading to increased productivity and employment. In addition, the centre would also have administrative building to support the training activities. Conference hall and meeting rooms would also be provided for conducting seminars, workshops and international conferences, aimed at exchange of information on the state of the art technology changes in the industry.

(b) **Land and Building:** It is proposed to acquire land admeasuring 3 acres to house the entire facility. The exact location would be closed to the industry cluster in and around Kanpur. The total built up area for institutional, administration and other buildings is estimated to be 61,440 sq. feet (**Annexure I**). The balance land would enable expansion of HRD facilities as well as provision of hostel facilities as per needs, in future

(c) **The machinery equipment and other infrastructure:** The centre would focus largely on hands-on practices, with a large component of training in the workshop and laboratory. State-of-the-art equipment as used on industry shop floors would be installed in the Centre, so that the training is imparted according to the needs of the industry. In addition to the main equipment used in production, training aids and equipment comprising computers, projectors, etc. will also be provided in sufficient number to enable students to learn effectively. Support infrastructure in the form of tables, desks and similar furniture, tools, black boards and such other support infrastructure would also be provided. The detailed list of equipment needed for the various courses is provided in **Annexure II-IV**

(d) A key feature of training will be the extensive use of technology to deliver the training. The training material will be converted into multimedia format to provide an audio-visual aspect to the training. These would take one or more of the following forms, viz., film translation of instructional material into multimedia content, films, power point projection etc.

(e) The multimedia courses will be delivered by trained faculty with the help of K-YAN, an innovative teaching aid that will eliminate the need for traditional teaching aids such as computers, projectors, etc. The K-YAN, developed and patented by IL&FS, is a fully integrated unit – high-performance computer, projector, CD/DVD writer and audio system all rolled into one. It is ideal for class-room instruction and enables collaborative learning and with a K-YAN, the training centre will not

require a computer lab setup. It has been deployed by over 1500 institutions at more than 150 locations in India and abroad

(f) **Utilities:** Power supply would be required for the operation of machinery, appropriate lighting and ventilation at the training centre. Besides wherever there are power shortages and load shedding, to ensure uninterrupted training, gensets are to be provided. Water would also be needed for use of trainees, trainers and other staff at the training centre

(g) **Soft Infrastructure:**

These would include development of:

i) IT software required for CAD/CAM and similar automated machines
ii) IT software for a robust MIS, virtual placement centre etc.
iii) Soft skills programmes comprising life skills, motivation, etc.
iv) Syllabus and detailed course curriculum and their continual revisions and improvements
v) 'ToT curriculum

POLITECNICO INTERNAZIONALE PER LO SVILUPPO INDUSTRIALE ED ECONOMICO

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DM Esteri 1999/128/004384
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To the Kind Att. Of Messrs.

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Vigevano, February 27, 2011

Ref. Agreement 23/12/10 ILFS/PISIE

Object: Pre-Feasibility Outline of a MSDC (Multi Skill Development Centre) for making youth skilled for employment in the Leather industry.

Project Ref/PISIE n°10002

Deliveries:

Annex 1

Service supply for proposed MSDC

Annex 2

Collection of drawings

Annex 3

Useful institutions and certification bodies and Guidelines for exporting footwear to the EU

www.pisie.org

Annex 1

Collection of drawings Service supply for proposed MSDC

www.pisie.org

ANNEX 1

PROJECT FOR THE OPERATIVE SETTLEMENT, INSTALLATION AND SETTING UP OF A FOOTWEAR SERVICE CENTRE

Project 10002 ILFS_ Kanpur 20/12/2010

TABLE OF CONTENTS

1. INTRODUCTION

The following research presents in detail a project for the realization of a footwear service and training centre, supplied with **the most up-to-date CAD / CAM equipments** and with **the most appropriate production technologies** aimed at providing the footwear enterprises with a complete range of services, at training their technical staff and at spreading **the knowledge and the use of the most advanced technologies for the development of the product and for its production** among them**.**

1.1 MARKET AND CONTEXT GROUNDS

The main objective of the service centre is to act as an incubator of competences upon the most modern planning and productive technologies. It will then supply detailed and updated information about them, take care of the transfer of knowledge as regards product, technology, work organization and marketing. Such transfer process will be carried out through the supply of a series of services like the subcontractors' working, the studies for product's innovation, the directions upon stylistic trends and the definition of strategies for the international promotion of footwear system products in which the centre is located.

The staff training, at all levels, will constitute a further relevant part of the profile of centre's activity as well as the supply of business advice for the management also of organizational aspects. All these aspects will be treated in detail in the different parts of this report.

The creation of a footwear service centre like the one proposed in this project finds its grounds in factors of general nature, in factors connected to the market of reference to which the centre turns and to factors of context, related to the specific economic/environmental conditions in which it fits in.

a) Grounds of general nature

The creation of a footwear service centre is founded on a series of grounds of general nature ascribable to three "guiding principles" of content that can be traced back to the following main themes:

- **create knowledge and professionalism**

  The service centre will first of all qualify either as a basic or as an advanced training centre for the personnel of the footwear sector, representing its catchment area. The training supplied will be first of all aimed at making most of all enterprises know the most up-to-date techniques of product and production development, with the purpose, through this kind of transfer of knowledge towards the factory personnel at all levels, of raising its competences and, by means of them, raising the competitiveness of the footwear industrial system of the Country. Knowledge and information on one side, must not be separated, on the other side, from the creation of a proper skill in such a number to satisfy the needs of enterprises to which the service centre turns. In the end, the training activity, representing one of the most important items among the services provided by the centre, will be aimed not only at conveying knowledge but also the most suitable working methods, so that the subsequent and desirable adoption of the most modern technologies in the factories is be followed by the use of the most up-to-date and efficient organizational schemes.

- **sustain the local productive sector**

  The centre will be supplied with a suitable technological and productive infrastructure to support the local footwear enterprises within all a series of activities connected either to the product development cycle or to its production. From this point of view, it places itself beside the local companies, representing for them a productive safety valve and a particular "supplier" to rely upon for the realization of drawings or of the series of manufactured articles during the productive peak or to simply try out the reaction capabilities of the technologies at centre's disposal.
  It is not a traditional subcontractor, but a technological partner for which the subcontractor's activity is not the purpose but the means to reach the real reasons of its existence: transferring the knowledge and the use of the most up-to-date technologies to sector companies.

- **facilitate technology transfer**

This is actually the most relevant explanation, under which the centre is proposed to be supplied with up-to-date and dimensioned planning and productive infrastructures, in order to carry out productive campaigns, even of a certain substance. The crucial aspect of this activity is that people operating on the machineries and the systems of the centre will be the workers of companies themselves, which will use its resources under the strict observance and monitoring of the experts of the centre. Right this direct experience made on centre's machineries and systems completes that training cycle begun with the former training activity. Thanks to such activity, it is possible to transfer to customers the awareness of the importance of the new technologies, of the most up-to-date working methods, of the "best practices" to be used. The conviction of taking possession of them therefore ripens as well as the stimulus of adopting them inside company itself.

- **create a centre of excellence for the companies of the sector**

The proposed structure is intended to put itself as a "centre of excellence" for the footwear companies of the sector, either at a local or at a national level; such will be the technological equipment of the structure, its organizational methodologies and the high level of eligibility of its staff, to warrant that the service centre should be taken as a model either inside the domestic section of abroad. For the footwear companies of the Country it will represent a model to imitate, didactic gym for the teachings of technological and organizational nature imparted by the trainers of the centre to companies that will enter its services. At an international level, it will represent the ultimate quality of reference for the footwear products of the Country and will promote its capabilities and valence in the global market.

b) Market grounds

Market grounds refer to the positioning of Country footwear sector in the world panorama of footwear manufacturers as well as to its competitive position; competitiveness aspects are analysed either in the light of quantitative factors (the total productive capacity of Country footwear system) or of qualitative factors, linked to the type of shoes mostly manufactured in the Country as well as to their average quality. Such quantitative and qualitative aspects are analysed in connection to the world productive scenario as well as to the positioning of the Country in such scenario.

The first part of this analysis is aimed at assessing the impact of the centre on the sector and how such presence is expected to be useful to improve the competitive position of Country's footwear system at overall level. Such impact will be analysed in detail as regards the aspects linked to training, to supplied services and to the general activity of technological transfer the centre will be asked to perform.

A detailed analysis of the related competitive positioning will therefore be carried out for each country.

c) Context grounds

On the contrary, context grounds refer to the particular structuring of Country's footwear division, to its geographic and organizational placing in areas and/or productive districts; such grounds and analysis give rise to very precise indications about the geographical collocation of the service centre and about structures' dimensioning, either in terms of human or of instrumental resources. A very significant aspect, deepened in this part of the study, is the "average technological level" of Country's footwear companies; its right definition is very important for the choice of centre's technological equipment, which must be proportionate to sector's average technological level, to avoid to offer solutions and services which wouldn't find, by virtue of the average situation of Country's footwear sector, the appropriate possibility of spreading.

A detailed analysis of the footwear section, with particular care to its structure and technological level will therefore be carried out for each country.

1.2 STUDY ARTICULATION

Under the introductory remarks and the grounds explained the previous chapter, the study has been divided into the following sections:

- **Services' supply,** describing in detail the services offered by the centre to sector enterprises as well as the modalities of their supply
- **Equipments,** belonging to the centre to make it perform its own tasks, included training
- **Human resources,** working in the centre, inclusive of their professional starting profiles and of their training routes
- **Implementation plan,** that is to say the modalities to make the centre become operative, as well as their time planning.

A detailed description of every section will be provided in the following pages, underlining their most relevant aspects.

2. SERVICES' SUPPLY

2.1. SERVICES SUPPLIED BY THE CENTRE

The centre has been designed and structured to supply the following range of services

a) Stylistic drawings
b) Product's engineering
c) Rapid prototyping
d) Times and costs' assessment
e) Prototyping, sampling and production
f) Quality control on materials and finished product
g) Style and fashion trends monitoring
h) Training

Such services form centre's complete "offer" and represent the primary source of proceeds to cover its structuring costs. In detail, the listed services consist in:

a) stylistic drawings

The services of the stylistic drawings are related to the detection of style tendencies, to their elaboration in the drawings, to the development of the drawings in the field of data processing. Starting from fashion trends' monitoring data (included as integrant part of centre's regular activities) and after product's briefing received from customer enterprises, the first stylistic "concept" of the new footwear models can be elaborated; it will be elaborated with the computerized graphic instruments available at the centre. Once the last has been detected, either among the ones available in centre's digital database or starting from a physical model, the stylistic 3D drawings is elaborated, using style CAD 3D programme. The drawings is supplied with documentary evidence, virtual images, film clips and animation, photographic-type rendering.

b) product's engineering

This second module of services refers to the passing from the stylistic drawings to the 3D drawings of the last, of the upper and of the components, to the related 2D drawings and to the technical pattern-making; it therefore covers all the phase of footwear "engineering" which allows the passage from its stylistic conception to its production. The starting point of this phase is last (already available on digital support or CAD with digitalization instruments) and the above mentioned stylistic drawings; it becomes a concrete reality in the detailed planning of all the components of upper, lining, structural components (insole, toe, stiffener and heel) and of the sole (in leather or in plastics with related moulds). The service offers to the customer company the complete CAD drawings of the shoe in all its parts, in all required sizes/insteps with all related geometric and constructive information.

c) rapid prototyping

This service module refers to the creation of rapid prototypes of lasts, moulds, heels and other components using quick prototyping machineries. The technologies and machineries for the quick creation of prototypes for aesthetic or functional assessment, starting from CAD 3D data, are still relatively complex and expensive and therefore not within single companies' reach. Centre's rapid prototyping equipments are at disposal for the quick realization of models of lasts, heels, sole "maquettes", models of accessories, pilot moulds for tests and production starting campaigns.

d) times and costs' assessment

This item includes the loading service of the drawings in the Product Data Base, the assessment of times and working sequences, the estimate of production costs; thanks to the software instruments available at the centre (PDM), it can manage for its customers the product(s) developed on their behalf in a suitable database where their basic note is produced and kept (afterwards, it will be at customers' disposal either as

a papery card or as a file). Furthermore, thanks to the presence of the prototyping and sampling lab, each product can be set up in the optimal sequence and its working times and costs can be esteemed.

e) prototyping, sampling and production

This service offers to customers, starting from footwear design, the possibility, exploiting centre's structures, of completing its grading phase, produced with the manufacturing of complete footwear samples to be realized (starting from the CAD data if the model is available in such ambient or even starting from the traditional "envelope" of model itself), of planning out its production and of carrying out campaigns of pilot productions or real subcontractors' productions upon company's order, with the modalities described in the following pages. More in detail, the service is articulated upon three levels:

- **prototyping:** realization of single samples (or in number limited to a few units) of new models of shoes; such service is mostly realized in the field of CAD/CAM pattern-making with a limited number of machineries finalized to the simple manufacturing of footwear prototypes.
- **sampling:** realization of test series (of some dozens or a few hundreds of pairs) aimed at setting up the productive series, of assessing and quantifying production costs and of studying the required procedures of quality control
- **production:** manufacturing of series, also in big quantities, on behalf of customer companies, which will have access with centre's staff and production infrastructures, aimed at realizing an effective transfer of knowledge and of the use of the most up-to-date productive technologies to companies themselves.

Such service is supplied exploiting technological "modules" of different levels which depend on one side on project starting time phase (starting phase mostly centred on the use of simple and low-cost machineries; in the advanced phase they are replaced / assisted by more advanced and automated machineries) and on the other side on customer companies' technological level; the choice of the systems, which must be furnished to the centre, is based upon it. There are therefore three options:

I. option (a - traditional): minor equipment based upon traditional machineries

If the customer chooses this option, the activities of prototypes' manufacturing, the sample series and the small production use a manufacturing line based upon simple and mostly manual machineries; from the drawings (CAD or manual according to the option chosen for pattern-making equipments) derive the fibreboards for the manual cutting or for the realization of cutting dies, the working cards and what necessary to start a manual process of prototype / sample series manufacturing and for the production.

II. option (b - advanced): full equipment with advanced machines and CAD / CAM

In this second option, the activities of pre-series / samples manufacturing make use of a working line based upon mostly automatic machineries (cutting machines in particular); the CAD system generates the working paths for the different machines (cutting machine but also other machines of the line). In this case a double objective is reached: the samples and pre-series are realized, but the manufacturing line is also used to make companies collaborating with the Service Centre learn the principles of the automated and integrated production.

The distinctive aspect of subcontractor's production service (carried out either with the machineries of the basic option or with the equipments of the advanced one) is that people operating on the systems and machineries are the same personnel working in the customer companies, under the supervision of centre's technicians. This is the way to complete the learning process for the use of the new technologies and to concretely carry out their transfer towards the customer companies.

f) materials and finished product's quality control

These are the "classical" services of quality control and certification of materials, components and finished product. The service is based on a quality control and certification Lab where all the most common machineries for certification tests are installed, according to the most reliable standards (SATRA) and the most widespread procedures. If necessary, it is even possible to define the procedures for the official crediting of the lab, to make it issue officially and universally recognized certifications.

g) style and fashion trends monitoring

This last service is issued to the customer footwear companies and consists in a monitoring of the fashion trends and in the periodical drawing up of “trend books” at disposal of customers. Such service is realized in collaboration with organizations and institutions at world level, specialized in this specific activity.

h) training

Training is another important item of the services provided by the centre, able to offer specialized training routes for designers, workers, managers, with a rich and articulated programme of “Training Courses”; the courses are differentiated for “professional profiles”, that is they are addressed to the complete training of the personnel that must be inserted in the company to carry out the necessary tasks. For this purpose, the centre structures its own training offer in “training units” that, combined each time according to the exigencies, lead to the complete training of the professional profile needed.

* * *

It is possible to make the profile of the figures listed below clear and detectable in the best possible way through the description of the basic tasks pertinent to the professional figure and of the essential competences as well as the technical professional ones that each one of these figures must have and that make themselves transversally compatible with the activities and interests related to their position. The professional profiles, of primary importance in the field of footwear manufacturing and for which the centre will be able to provide the suitable training, are:

- Footwear stylist;
- Pattern-maker;
- Last technician;
- Cutting department head;
- Stitching department head;
- Lasting department head;
- Finishing department head.

The complementary figures are:

- Cutter;
- Operator of the stitching department;
- Operator of the lasting department;
- Operator of the finishing department.

In detail, the primary and secondary professional profiles in the field of footwear manufacturing are structured as follows:

More in detail, the primary professional figures will be trained according to the following requisites:

2.2. TRAINING

2.2.1 Footwear Stylist

Awarding of the basic tasks

- Catch the fashion trends and, according to them, conceive new products.
- Carry out research on style and materials, to comply with trends.
- Create models and their reproduction into sketches.
- Design models coupling colours and materials.
- Realize sets of samples on purchaser's advice.
- Realize specimens and prototypes.
- Revise models with stylistic and technical interventions.
- Capability of relating with the pattern-makers of the footwear manufacturing companies, communicating with understandable and technically suitable terms.

Main competences

- He knows the stylistic and fashion trends.
- He is able to catch the innovative characteristics of a component, accessory or object.
- He knows the supplying sources for the trends.
- He tries to know elements that can influence fashion in the footwear sector.
- He sufficiently knows the footwear models.
- He knows how to create a set of samples / collection.
- He knows how to structure a collection bent on a given objective.

Techno-professional abilities

- He is able to catch particulars, he knows how to observe, what to see and search to create stylistic ideas;
- He applies himself in the stylistic research and in the choice and study of materials to create trends and style lines.
- He is able to transform the idea into a commercially valid and technically realizable project.
- He is able to use the materials of the footwear sector to get the desired creative result.
- He makes us of technical solutions and materials accurately searched and studied to create new models.
- He is able to creatively choose and couple colours.
- He carries out tests to avoid surprises when the model is launched into production, in particular with new materials.
- He succeeds in revising the models, introducing highly valued cues at a stylistic level and expression of ability from the technical point of view.
- He must, in the role of designer, be able to understand, catalogue and interpret the choice of the segment of destination of the product, designing targeted collections.

Knowledge of transversal competences

- He has sufficient knowledge on the productive economic sector of reference.
- He has sufficient knowledge of market, customer satisfaction and coherence in marketing.
- He is able to profitably relate with customers and purchasers.
- He is able of getting by in meetings with the person in charge of sales, with the person in charge of designing and with the agents.
- He has a sufficient ability in relating with the owners, the pattern-makers and with the working place.
- He tries to anticipate with the person in charge of the production the possible problems of model manufacturing.
- He makes use of the contact with the productive reality making it became a stimulus to creativity through the knowledge of the materials used and the suggested possibilities of innovation.

- He is a creative person and prepares balanced and functional products inducing aesthetic and rationality, together with productive aspects and commercial realities.
- He is able to correctly communicating using the sectional terminology.
- He knows and respects the rules which concern working safety.

2.2.2 Footwear pattern-maker

Awarding of the basic tasks

- Once he receives from the pattern-maker and from the product man all the indications (sketches, samples, photos and other) necessary to define the requisites required, he realizes the patterns.
- Design the pattern on last, providing for the grading of the standard of the basic number on the cardboard.
- Prepare the “pattern holder envelope” with related templates for cutting.
- Fill in the proper “prototype technical card” with pattern identification data: season/year; its code; standard drawing, last, size number, type of manufacture; upper materials and their consumption.
- Study the patterns to be planned, choosing the materials also in line with the trend fashion if required and considering price.
- Plan collections on customers’ demand.
- Carry out tests to check the footwear prototypes’ quality.
- Revise patterns with stylistic and technical interventions.
- Make use of the equipments of the patter-making department (manual, mechanized, computerized, etc).
- Communicate and relate with components’ manufacturers (companies producing insoles, soles, heel, different accessories).

Main competences

- He has a basic knowledge of the stylistic trends.
- He knows the supplying sources for the trends.
- He takes pains to know the competitors.
- He knows how to create a set of samples / collection.
- He knows plain and volume drawing techniques.
- He knows the different shapes of the patterns and the different types of manufacturing processes.
- He knows the manufacturing techniques of all basic patterns and the possible changes.
- He knows last’s manufacturing techniques, the cutting systems and the insteps.
- He knows and is able to assess the materials used in the footwear sector (leathers, soles, components, etc).
- He knows the technical problems of the different materials and the possible solutions.
- He knows foot anatomy and footwear ergonomic aspects.
- He knows the footwear CAD.
- He knows the working phases of the productive process (ideal cemented, sewed, blake, etc) and the different types of footwear construction.
- He knows all that is necessary footwear manufacturing cycle machineries (how they work and their possible solutions).
- He has a basic knowledge of times and methods and on product costs.

Techno-professional abilities

- He designs footwear patterns.
- He plans, in collaboration with heel and sole technicians, heel and sole models.
- He is able, in collaboration with last technician, to change last, according to the different heel height.
- He knows and is able to use the moulding techniques (adjustment of footwear volume to foot volume).
- He realizes the patterns always facing the exigencies of production and of the productive cycle.
- He collaborates to collections’ planning.
- He realizes specimens and footwear prototypes.

- He uses the CAD to get patterns on the computer.
- He knows how to change patterns, with stylistic and technical adjustments
- He is capable to use the equipments of the pattern-making department.
- He is prepared to carry out the grading of sizes' series on fibreboard.
- He draws up patterns' manufacturing cards.

Knowledge of transversal competences

- He takes an interest in knowing the economic productive sector of reference.
- He is able to relate with the colleagues, with the department heads, with the production, with the owner, with the working place in general.
- He can profitably communicate with customers and purchasers.
- He is a creative person and is able to analyse the fashion trends.
- He knows the terminology adopted in the specific sector.
- He knows and respects the rules which concern working safety.

2.2.3. Last technician

Awarding of the basic tasks

- Realize lasts on indications (sketches, samples, pictures, other) of the person in charge of pattern-making and of the product man of the footwear company.
- Design lasts destined to collection on customers' demand.
- Carry out tests to assert the right interpretation of the destination of use.
- Revise last models with stylistic and technical adjustments.
- Draw up last models' working cards.
- Use the equipment of the pattern-making department with competence and skill in the manual, mechanized and computerized versions.
- Deal with customers demonstrating of being competent in understanding their needs.

Main competences

- He knows the two-dimensional and three-dimensional techniques.
- He sufficiently knows the different types of lasts to couple with the different models of shoes and the different manufacturing processes.
- He knows the working techniques and the manufacturing cycle of the different kinds of lasts as well as possible instep changes.
- He knows and is able to assess the behaviour of materials used for last's manufacturing.
- He knows foot anatomy, its behaviour under static and dynamic load, even in case of crash.
- He knows last's designing cycle with the traditional method and with the three-dimensional CAD.
- He knows how to create a set of samples or a collection.
- He has a basic knowledge on the footwear manufacturing process.

Techno-professional abilities

- He designs lasts
- He can provide technical and stylistic solutions during last's configuration.
- He is able to change last according to the different heel heights.
- He creates last's models always considering the exigencies of production and of the manufacturing cycle.
- He cooperates to collections' planning.
- He realizes last specimens and prototypes.
- He uses CAD to get last models by means of the computer.
- He revises last models, with stylistic and technical adjustments.
- He uses the equipments of last's pattern-making department.
- He is able to grade last's sizes series.

- He realizes the last models' working cards.
- He actively cooperates with the footwear stylist in order to assess the effective stylistic and technical correspondence of lasts to the expectations and exigencies of footwear models of destination.

Knowledge of transversal competences

- He takes an interest in knowing the economic productive sector of reference.
- He is able to relate with the colleagues, with the department heads, with the production, with the owner, with the working place in general.
- He is able to profitably communicate with customers and purchasers.
- He is a creative person and is able to analyse the fashion trends.
- He knows the terminology adopted in the specific sector.
- He knows and respects the rules which concern working safety.

2.2.4. Head of the cutting department

Awarding of the basic tasks

- Organize, manage and supervise cutting department's work.
- Correctly interpret the information on model and article reading the working card and the packing list of the production batch.
- Analyse leather and the other materials to submit to cutting, checking the characteristics and the conformity to the specific requests.
- Control final product's consumptions, quality and quantity.
- Check working times and intervene where required.
- Coordinate the activities of the cutters.
- Solve possible problems of the cutting department.
- Create interactive relationships with pattern-making and with the other heads.
- Manage department's human resources.

Main competences

- He sufficiently know the materials used in the different departments of the footwear company (lasts, uppers, linings, stiffeners, insoles, soles and heels, etc).
- He knows the characteristics of the different models.
- He knows sizes and the symbology used for their recognition.
- He knows how the models in the different sizes are realized on fibreboard.
- He knows the materials and the working tools (shoeknives, punching machines, through-feed cutting tables, silver pencils, etc)
- He knows the production cycle of the cutting department.
- He knows the equipments and machineries of the footwear company department and their setting.
- He knows the characteristics of the working card and of the working bill.
- He knows the working phases of the cutting department, in their characteristics and chronological sequence.
- He knows the work organization of the cutting department.
- He knows the main issues that may occur in the cutting department.
- He knows the techniques of problem solving.
- He knows the fundamental techniques of communication and human resources management.

Techno-professional abilities

- He is able to read the working card.
- He efficiently organizes the department in collaboration with the subordinate personnel.
- He is able to manage and coordinate the human resources of the cutting department.
- He is able to solve the productive issues of the department.
- He manages work in order to maximize product's quality and quantity, respecting delivery times.

- He is able to manage the different materials.
- He is able to identify leather and to assess the type of treatment adopted by tannery, as well as quality level.
- He is able to place the real or virtual templates on leather, according to the quality and type of the model to be produced, with an optimal exploitation of leather itself.
- He is able to cut uppers on leathers or non-embossed fabrics, on uniform or not uniform embossed fabrics, through-feed and placed printings and on precious leathers.
- He uses the cutting shoeknife, the swing arm cutting press, the travelling head clicking press, the cutting table.
- He is able to insert new personnel, to assess and motivate subordinates, to create a positive atmosphere of cooperation.

Knowledge of transversal competences

- He has transversal knowledge as regards the general outline from an economic productive point of view of the sector of reference.
- He has interpersonal communication abilities.
- He has organizational capabilities.
- He works in keeping with working safety rules.
- He is able to profitably communicate with the subordinate workers and with the other department heads.
- He knows the terminology adopted in the specific sector.

2.2.5. Head of the stitching department

Awarding of the basic tasks

- Organize, manage and supervise stitching department's work.
- Correctly interpret the information on model and article reading the working card and the packing list of the production batch.
- Check the consumption of department's products (glues, yarns, needles and others), quality and quantity of the product obtained.
- Check working times and intervene if necessary.
- Coordinate the activity of workers in charge of stitching.
- Solve production issues of the stitching department.
- Prepare the materials used in the manufacturing process before and after stitching.
- Create interactive relationships with the pattern-making department and with the other department heads.
- Manage department's human resources.

Main competences

- He sufficiently know the materials used in the different departments of the footwear company (lasts, uppers, linings, stiffeners, insoles, soles and heels, etc).
- He knows the characteristics of the different models from manufacturing point of view and specifically where the single intervention can condition the previous work.
- He knows the sizes and the symbology used for their detection.
- He knows the working materials (mastics, sewing yarns, needles, etc).
- He knows the equipments and machines of the stitching department (scissors, shoeknife, stitching hammer, sewing machines, etc).
- He knows the different production cycles required by the wide range of models of the stitching department).
- He knows the characteristics of the working card and of the working bill.
- He knows the manufacturing phases of the stitching department, in their characteristics and chronological sequence.
- He knows the work organization of the stitching department.
- He knows the main issues that may occur in the stitching department.

- He knows the techniques of problem solving to avoid inefficiencies in the continuity of production and to warrant the respect of the prearranged quality requisites.
- He knows the fundamental techniques of communication and human resources management.

Techno-professional abilities

- He is able to read the working card.
- He efficiently organizes the department in collaboration with the subordinate personnel.
- He is able to manage and coordinate the human resources of the stitching department.
- He is able to solve the productive issues of the department, involving people working there.
- He manages work in order to maximize product's quality and quantity, respecting delivery times.
- He is able to manage the different materials, in particular during coupling phases with different fabrics.
- He is able to use the techniques to manually or mechanically fold, to insert different types of reinforcements, to sew linings and uppers in the different parts of the components, in order to stitch lining and upper, to trim linings.
- He is able to use the equipments and machines of the stitching department.
- He is able to insert new personnel, to assess and motivate subordinates, to create a positive atmosphere of cooperation.

Knowledge of transversal competences

- He has knowledge as regards the general outline from an economic productive point of view of the sector of reference.
- He has interpersonal communication abilities.
- He has multidirectional organizational capabilities.
- He works and makes subordinates work in keeping with working safety rules.
- He is able to profitably communicate with the subordinates and with the other department heads.
- He knows the terminology adopted in the specific sector.

2.2.6. Head of the lasting department

Awarding of the basic tasks

- Organize, manage and supervise lasting department's work.
- Correctly interpret the information on model and article reading the working card and the packing list of the production batch.
- Check the consumption of department's products, quality and quantity of the product obtained.
- Check working times and intervene if necessary.
- Coordinate the activity of workers in charge of lasting.
- Solve production issues of the lasting department.
- Prepare the materials used in the lasting department and perform all the activities of this phase of the manufacturing cycle.
- Create interactive relationships with the pattern-making department and with the other department heads.
- Manage department's human resources.

Main competences

- He sufficiently know the materials used in the different departments of the footwear company (lasts, uppers, linings, stiffeners, insoles, soles and heels, etc).
- He knows the characteristics of the different models from manufacturing point of view and how to treat the different leathers during pulling-over and lasting.
- He knows the sizes and the symbology used for their detection.
- He knows the working materials (mastics, sewing yarns, needles, etc).

- He knows the equipments and machines of the lasting department (mastic pumps, shoeknives, lasting pliers and hammers, pulling-over and lasting, insole trimming machine, back.-part moulding machine, etc).
- He knows the different production cycles of the lasting department bound to the different workings used by the footwear company.
- He knows the characteristics of the working card and of the working bill.
- He knows the manufacturing phases of the lasting department, in their characteristics and chronological sequence.
- He knows the work organization of the lasting department.
- He knows the main issues that may occur in the cutting department.
- He knows the techniques of problem solving to avoid inefficiencies in the continuity of production and to warrant the respect of the prearranged quality requisites.
- He knows the fundamental techniques of communication and human resources management.

Techno-professional abilities

- He is able to read the working card.
- He efficiently organizes the department in collaboration with the subordinate personnel.
- He is able to manage and coordinate the human resources of the lasting department.
- He is able to solve the productive issues of the department, involving people working there.
- He manages work in order to maximize product's quality and quantity, respecting delivery times.
- He is able to manage lasting materials and to carry out all the operations required by the different processes and footwear models.
- He is able to use the equipments and machines of the lasting department.
- He is able to insert new personnel, to assess and motivate subordinates, to create a positive atmosphere of cooperation.

Knowledge of transversal competences

- He has knowledge as regards the general outline from an economic productive point of view of the sector of reference.
- He has interpersonal communication abilities.
- He has multidirectional organizational capabilities.
- He works and makes subordinates work in keeping with working safety rules.
- He is able to profitably communicate with the subordinates and with the other department heads.
- He knows the terminology adopted in the specific sector.

2.2.7. Head of the finishing department

Awarding of the basic tasks

- Organize, manage and supervise finishing department's work.
- Correctly interpret the information on model and article reading the working card and the packing list of the production batch.
- Check the consumption of department's products, quality and quantity of the product obtained.
- Check working times and intervene if necessary.
- Coordinate the activity of workers in charge of finishing.
- Solve production issues of the finishing department.
- Perform all the activities of this phase of the manufacturing cycle, up to the final retouching.
- Create interactive relationships with the pattern-making department and with the other department heads.
- Manage department's human resources.

Main competences

- He sufficiently know the materials used in the different departments of the footwear company (lasts, uppers, linings, stiffeners, insoles, soles and heels, etc).
- He knows the characteristics of the different models from manufacturing point of view and how to treat the different leathers to exalt their natural properties.
- He knows the sizes and the symbology used for their detection.
- He knows the working materials (mastics, nails, creams, waxes, etc).
- He knows the equipments and machines of the finishing department (mastic pumps, shoeknives, lasting pliers and hammers, tool to spread glue, heel nailing, brushes, last pullers, etc).
- He knows the different production cycles of the finishing department.
- He knows the characteristics of the working card and of the working bill.
- He knows the manufacturing phases of the lasting department, in their characteristics and chronological sequence.
- He knows the work organization of the finishing department.
- He knows the main issues that may occur in the finishing department.
- He knows the techniques of problem solving to avoid inefficiencies in the continuity of production and to warrant the respect of the prearranged quality requisites.
- He knows the fundamental techniques of communication and human resources management.
- He cooperates with the suppliers to get the most specific products for their exigencies.

Techno-professional abilities

- He is able to read the working card.
- He efficiently organizes the department in collaboration with the subordinate personnel.
- He is able to manage and coordinate the human resources of the finishing department.
- He is able to solve the productive issues of the department, involving people working there.
- He manages work in order to maximize product's quality and quantity, respecting delivery times.
- He is able to perform all the operations necessary to finishing, completing and packing the product exalting the qualities of the materials used and giving a touch of high craft professionalism.
- He is able to check and value the results of the productive cycle and is able to make the necessary touch up if necessary.
- He is able to use the equipments and machines of the finishing department.
- He is able to insert new personnel, to assess and motivate subordinates, to create a positive atmosphere of cooperation.

Knowledge of transversal competences

- He has knowledge as regards the general outline from an economic productive point of view of the sector of reference.
- He has interpersonal communication abilities.
- He has multidirectional organizational capabilities.
- He works and makes subordinates work in keeping with working safety rules.
- He is able to profitably communicate with the subordinates and with the other department heads.
- He knows the terminology adopted in the specific sector.

2.2.8. Cutter (Operator of the cutting phase)

Awarding of the basic tasks

- Correctly interpret the information on model and article reading the working card and the packing list.
- Analyse leather and the other materials to be cut, checking their characteristics to correctly place the templates or virtually cast them.
- Place or cast the templates on leather or on other materials, considering the quality of the final product and minimizing wastes.
- Carry out the cut, according to the type of product and leather.
- Check consumptions, quality and quantity of the product obtained.

- Check working times.

Main competences

- He knows the materials used in the footwear sector (leathers, and other reinforcing materials).
- He knows the characteristics of the different models.
- He knows the sizes and the symbology used for their recognition.
- He knows how patterns and sizes are realized on fibreboard.
- He knows the use and maintenance of the shoeknife and of the clicking presses of the through-feed cutting table.
- He sufficiently knows footwear production cycle and equipments.
- He knows the structure and modalities to correctly read the working card and the working bill.
- He knows the manufacturing phases of the cutting department, in their characteristics and in the chronological sequence.
- He has knowledge of the organization of his own working place, attuned to the whole department.

Techno-professional abilities

- He is able to read the working card as regards cutting.
- He knows how to manage the different materials.
- He is able to read leather.
- He ids able to place or cast templates on leather, according to leather quality and type and according to the model to be produced.
- He knows how to optimally exploit leather and the other upper materials (avoiding mistakes, minimizing wastes, respecting leather giving-up lines).
- He is able to cut linings.
- He is able to cut uppers on leather or non-embossed fabrics.
- He is able to cut uppers on embossed leathers with uniform printings.
- He is able to cut uppers on leathers with non-uniform printings.
- He is able to cut uppers on fabrics with through-feed printings.
- He is able to cut uppers on fabrics with placed printings.
- He is able to cut uppers on precious leathers.
- He uses the cutting shoeknife.
- He uses the swing arm cutting press, the travelling head clicking press, the beam clicking press, the through-feed cutting tables.
- He efficiently organizes work, operating in an orderly way.

Knowledge of transversal competences

- He has sufficient knowledge on the productive economic sector of reference.
- He is able to profitably communicate with the colleagues and with the department head.
- He works in keeping with working safety rules.
- He knows the terminology adopted in the specific sector.

2.2.9. Operator of the stitching department

Awarding of the basic tasks

- Check the presence of the working bill and the correspondence of the cut pieces, colour and quantity of the different sizes, to the required ones.
- Carry out the fundamental operations of upper preparation: leather skiving, mastic application, ornamental punching, insertion of reinforcements, support fabrics for upper parts, toes.
- Sew the lining.
- Sew the upper.
- Couple lining and upper.
- Sew lining and upper where they must be coupled.

- Adjust and carry out the stitch according to length and the characteristics listed in the technical card.
- Insert reinforcements, support fabrics for upper parts, gauze fabrics, waddings, paddings where necessary.
- Finish the seams completing them with interventions of beginning and end, as provided by the technical card.

Techno-professional abilities

- He is able to use the manual or mechanical folding techniques.
- He folds leather or fabric according to the characteristics of the processed material.
- He is able to use the techniques to insert the different types of reinforcements.
- He uses the proper reinforcements in the proper points according to the model.
- He assembles and sews the lining.
- He assembles the upper parts.
- He sews the upper in the heel and inserts the suitable reinforcement, realizing the right smoothing.
- He is able to realize the stitch as provided by the model and technical card.
- He is able to open the seam using the stitching hammer.
- He is able to realize the simple or double seams.
- He is able to carry out shoe top stitching (use of mastic and subsequent coupling of upper and lining).
- He stitches the lining with the upper (leaving some open parts for lasting).
- He is able to stop the threads (tieing them and distributing mastic).
- He trims the lining (by hand or with the trimming machine).
- If provided, he sews the reinforcing row and accurately stops the threads.
- He is able to use the most suitable types of mastic for the different phases of the manufacturing process.
- He uses the skiving machine in its different levels of technological evolution.
- He uses the splitting machine (to even leather thicknesses).
- He uses the glue spreading machine, after having assessed the right operative modalities.
- He uses brushes, stitching shoeknives, stitching hammers.
- He uses the machines for the efficient application and rolling of reinforcements.
- He uses the sewing machines (flat-bed, post-bed, arm sewing machine for boots), intervening to keep them efficient by means of an ordinary maintenance.
- He uses the cutting die to realize shoe-laces holes or suitable equipments.
- He is able to efficiently organize his work, operating with order and accuracy.

Knowledge of transversal competences

- He has sufficient knowledge on the productive economic sector of reference.
- He is able to profitably communicate with the colleagues and with the department head.
- He works in keeping with working safety rules.
- He knows the terminology adopted in the specific sector.

2.2.10. Operator of the lasting department

Awarding of the basic tasks

- Check the presence of the working bill and the correspondence of upper, bottoms, correctly coupled accessories.
- Start materials off to lasting:
  - load the assembly line (uppers, cleaning heel seat lining, insoles, stiffeners, soles, heels or unit soles);
  - iron the uppers;
  - insert the toe (according to the model, to material, softness and thickness) fixing it with the mastic to upper;
  - last the stiffeners and fix them with the stapling machine;
  - insert upper in the back-part moulding machine (to iron upper on stiffener)

- Attach insole on upper, in 2 points.
- If required, trim the insole according to the type of last (in particular to toe).
- Spread the mastic between lining and upper and on upper internal part, to make it adhere to insole or to glue lining and upper with thermoplastic.
- Last footwear on the last to toe (also including the plantar arch), using the pulling-over and lasting machine.
- Complete with footwear lasting one single second intervention.
- Last footwear to heel and close it on insole around the last, using the seat laster.
- Put the shoes in the heat setter and complete their setting with air and saturated steam hot ironing machine.

Main competences

- He knows the materials used in the production cycle (lasts, uppers, stiffeners, insoles, soles and heels, toes, etc).
- He knows the working materials (mastics, nails, nail-rope, etc).
- He knows the working tools and devices (mastic pumps, accessories, shoeknives, insole trimmers, back-part moulding machines, lasting pliers and hammers, pulling-over and lasting machines, seat laster, waist and seat laster, etc).
- He knows the model as regards the manufacturing process.
- He knows the characteristics of the technical card and of the working bill.
- He sufficiently knows footwear production cycle and equipments.
- He knows the manufacturing phases of the lasting department, in their characteristics and chronological sequence for sandal, moccasin, closed shoes and cemented, ideal, goodyear, San Crispino, blake manufacturing.
- He is able to organize his working place, attuned to his department.

Techno-professional characteristics

- He is able to prepare the lasting materials (uppers, toes, stiffeners, insoles, soles, heels or unit soles.)
- He prepares the pulling-over and lasting machine: he chooses Teflon and the plates for model's specific last; he positions the pliers according to the model or simply selects the programme provided for that type and size of shoe.
- He arranges upper on last and inserts last in the machine, subsequently pulling it with pliers.
- He balances machine's draught in the different points if it is not up-to-date.
- He closes footwear front (upper on insole closing).
- After toe has been closed, he fixes upper to last by means of lining and to heel with a nail, in case of lady's high heel and top quality shoes.
- He removes wrinkles from lining and upper, opportunely pulling them with the help of the thermoplastic side-laster.
- He closes footwear at heel.
- He is able to analyse the lasted shoe and assess its correct execution.
- He repeats the operations on the pair, checking that there are equal.
- He puts shoe in heat setter, adjusting heat, humidity, duration of permanence based on materials.
- He uses the machine to provisionally apply insoles.
- He uses insoles' trimming machine.
- He uses the back-part moulding machine to apply stiffeners and to make them become a whole with upper and to provide them with the right shaping.
- He uses the pulling-over and lasting machine, exploiting all its performances.
- He uses the heat setter, adapting the performances basing on footwear composition materials.
- He is able to efficiently organize his work, operating with order and accuracy.

Knowledge of transversal competences

- He has sufficient knowledge on the productive economic sector of reference.
- He is able to profitably communicate with the colleagues and with the department head.
- He works in keeping with working safety rules.
- He knows the terminology adopted in the specific sector.

2.2.11. Operator of the finishing department

Awarding of the basic tasks

- Pound the bottom along the lasted shoe to get a prominent and correct edge along the edge last to fasten sole.
- Sand-paper the lasted upper edge along shoe edge last.
- Distribute glue in this area and on the toe of the sole to couple.
- Precisely matching soles on lasted shoes and arrange them on the press.
- Glue heel and fix it to insole, if required.
- Remove last from footwear.
- Nail heels.
- Trim the lining along the whole line of the superior side of quarters and tongue, if provided.
- Brush shoes, distribute the suitable cream and repeatedly polish.
- Check the product.
- Glue and fasten the cleaning heel seat lining.
- Mark shoe on sole, if not performed before.
- Retouch product if necessary.
- Pack shoes.

Main competences

- He knows the materials used in the production cycle (lasts, uppers, insoles, soles, heels, unit soles, cleaning heel seat linings, etc).
- He knows the working materials (mastics, nails, creams, sizes, waxes, etc).
- He knows the working tools and machines (mastic pumps, shoeknives, pliers and hammers, pounding machine, skiving machine, glue spreading device, press, heel nailing machine, brushes, last puller or mechanized last puller, etc).
- He knows the model as regards the manufacturing process.
- He knows the characteristics of the technical card and of the working bill.
- He sufficiently knows footwear production cycle and equipments.
- He knows the manufacturing phases of the finishing department, in their characteristics and chronological sequence: sandpapering, gluing, sole application, heel nailing, brushing, polishing, buffing, application of sizes and waxes.
- He is able to organize his working place, attuned to his department.

Techno-professional abilities

- He is able to pound the shoe to smooth the lasted shoe on insole and get a prominent and well done edge along edge last.
- After the removal of nails fixing insole to last, he is able to use the roughing machine to remove leather tannery finishing microfilm and level its thickness to prepare sole fastening.
- He is able to spread the glue to bottom and sole, also with the suitable machineries.
- He correctly couples soles, included unit sole versions, and lasted shoes and is able to correctly arrange them on the press.
- If unit sole is not provided, he is able to glue the heel and to fix it to insole.
- He is able to hit or iron leather, if necessary, also with proper equipments.
- He is able to brush footwear and to apply sizes, waxes and creams to get the provided polishing.
- He is able to pull out last using the last puller or the mechanized last puller.
- He is able to trim the lining along quarters and tongue, if provided.
- He is able to check and assess the result of the productive cycle and is able to make the necessary retouches.
- He is able to complete product's realization and packing (applying the cleaning heel seat lining, proceeding with marking, packing the box).
- He uses the traditional sandpaper machine or with computerized machines.
- He uses the pounding machine in the two versions: man and lady.
- He uses glue spreading machine for soles.

- He uses the press in the different versions of technological level.
- He uses the semiautomatic or automatic heel nailing machine equipped programmed to define the number of nails and the application sequence.
- He uses the riveting and screw gun.
- He uses brushes (to clean, spread cream, polish, etc).
- He uses the last pullers or the devices to pull out last.
- He uses the marking machine.
- He efficiently organizes work, operating with rationality and on the same wave-length as group.

Knowledge of transversal competences

- He has sufficient knowledge on the productive economic sector of reference.
- He is able to profitably communicate with the colleagues and with the department head.
- He works in keeping with working safety rules.
- He knows the terminology adopted in the specific sector.

Courses are run by Service Centre's personnel, expressly trained for this purpose with the support, if necessary, of external experts. They are organized basing on seasonal/yearly calendars, according to the number of participants and to the particular exigencies of centre's customer companies.

3. INTRODUCTION

To properly carry out its mission of providing services to the footwear companies, to train its designers and workers and to function as a pole for the technological transfer the centre is asked to be supplied with more complete planning and productive equipments. Centre's most significant equipments are listed in the following pages.

3.1. CAD/3D STATION FOR THE STYLISTIC PLANNING:

CAD 3D station for the stylistic planning (one or more according to the volume of services the centre is asked to supply) is dedicated to the phase of stylistic concept of footwear supported by computer devices. It uses a working station (hardware) supplied with a good computation power and memory; advanced 3D graphics functions are supported by a suitable graphic card.

Besides the traditional system equipments, the software includes a programme of vectorial pictorial graphics, a footwear CAD 3D programme for the stylistic project and an advanced modeller for the modelling of complex 3D objects like soles or other footwear accessories. As input peripheral device, the working station is supplied with a manual 3D digitizer for the acquisition of the points of the surface of lasts or of other objects.

3.2. CAD 2D / 3D STATION FOR THE TECHNICAL DESIGNING:

The CAD 3D station for the technical planning (one or more according to the volume of services the centre is asked to supply) is dedicated to the phase of footwear technical planning (pattern-making), supported by computer devices. It uses a working station (hardware) supplied with a good computation power and memory; advanced 3D graphics functions are supported by a suitable graphic card. Besides the traditional system equipments, the software includes a CAD 2D / 3D programme for the technical designing of footwear, equipped with all the most significant functional characters (2D and 3D style line drawing, flat standard grading, definition/construction of footwear components, their separation, 2D and 3D size grading); the same station is supplied with a CAD / CAM software for the designing and manufacturing of footwear moulds.
As input peripheral device, it is supplied with a 2D digitizer table for the manual introduction of the standards of traditionally graded patterns and to be transferred to CAD and with a 3D manual digitizer to digitize style lines directly from the standard positioned on last. The output occurs, as well as on production machineries of the pattern-making/sample department, if present, (through specific CAM software modules) on a roll plotter for the graphic documentation of 2D projects.

3.3. PDM STATION FOR PRODUCT'S ENGINEERING:

The PDM station for product's engineering (one or more according to the volume of services the centre is asked to supply) is dedicated to the phase of definition and data base management of product's productive information, supported by computer devices. It uses a working station (hardware) supplied with a good computation power and mass memory (suitable hard disks). The installed software is based upon a product data base (PDM) for footwear. It supports the operations of product's information management in general, and, in particular, of definition and management of materials and components' basic note, and of definition and management of the manufacturing cycles, with the subsequent reckoning of times and production costs (the latter combined with the exploited notes allow later the assessment of product's total costs). Its equipment is completed by external units or data back-up and repository internal functions.

3.4. PATTERN-MAKING EQUIPMENT SUPPLY:

The equipment of support peripheral devices to pattern-making (the operations carried out by CAD stations and listed in the previous paragraphs) is composed by three levels/options:

I. **Starting phase**: it includes the minimum equipment of necessary peripheral devices to support the subsequent phases of prototyping and sampling
II. **Base**: it includes the minimum equipment and completes with other machineries able to make pattern-making operations more efficient
III. **Advanced**; it includes the basic equipment and completes with further machineries able to widen centres' services offer

i) basic level/option:
The basic pattern-making equipment is composed by one **NC punching machine** for the cutting of fibreboards or of other materials either for the creation of templates for the subsequent manual cutting or for the creation of cutting dies for the manual or automatic clicking presses; the punching device can be managed by a control station /CAM (PC) which includes the software required for the creation of working routes starting from CAD 2D data, generated during the designing phase. This must be considered as the minimum equipment indispensable to support pattern-making.

ii) complete option / level:
Pattern-making complete equipment is supplied with the NC punching machine, with the CAD 2D station, already provided by the previous level, and with the CAD 3 D functions, which allow offering complete services of CAD designing either regarding upper components, or last and sole.

iii) advanced option / level:
The advanced equipment adds to the NC punching machine, two further peripheral devices, both dedicated to lasts: **one automatic digitizer for lasts** and **one NC lathe to realize lasts' models** in plastics or other material (wood). These last two peripheral devices, regarding the volume of services to supply, allow on one side to quicken digitizing operations and to promptly produce lasts models without applying to external suppliers; they therefore increase centre's efficiency and flexibility in offering services to its customer companies. The presence of a control station / CAM (PC) with the software necessary for the creation of working routes starting from CAD 3D data generated during planning is also required.

Furthermore, such equipment includes **one or more rapid prototyping machineries.** Their choice, regarding number and working technologies, is based on the exigencies of services centre provided by the centre; low cost and easy machineries are however preferred. With this kind of machineries, the centre is able to extend its offer, providing quick services for the realization of "maquette" and aesthetic and functional prototypes of other components and accessories. Also rapid prototyping machineries require the presence of a PC station for the control and management of machine itself, able to process 3D data generated during planning before being transferred to the machine.

EQUIPMENT'S GENERAL LEVEL	CAD/CAM EQUIPMENTS	PATTERN-MAKING PERIPHERAL DEVICES AND MACHINERIES
STARTING	None	Machines and equipments for manual pattern-making activities
BASE	CAD 2D	NC Punching machine Fibreboard cutting table
COMPLETE	+ CAD 3D	-
ADVANCED	+ CAD 3D soles and moulds + PDM	+ Last digitizer + Last lathe + Rapid prototyping machinery

Summarizing table of the three options of pattern-making equipment

The three levels described in the table are completed by "starting" level (lay-out M-1) equipment which includes a merely manual equipment (no CAD station and mechanical pantograph) of the pattern-making department; such equipment allows the traditional execution of pattern grading (and related services) without the help of computerized systems or automatic machineries. Appendix 1 presents, by way of example, M-3 pattern-making lay-out, corresponding to an option of equipments presented in the table. Appendix 2 reports a complete list and a short description of all equipments provided by this pattern-making version.

3.5. SAMPLING MACHINERIES / SAMPLE SERIES

Also the sampling area /pre-series, and centre's corresponding function proposed to supply such services, may be equipped with machineries corresponding to different technological levels:

i) traditional option / level: traditional manual machineries

In this option, the department is most of all equipped with such traditional machineries to allow the complete footwear manufacturing cycle basing on the selected working techniques (cutting, stitching, lasting and finishing); the dimensioning of the working line is carried out on a minimum capacity starting value (to minimize also the number of workers) and can subsequently be widened in case of growing productive necessities. A list of the machineries provided for this option is reported in the appendix. This configuration includes two lay-outs: the first one (A-1) for the production of prototypes and samples, not over the 100 pairs per day and the second one (A-2) for the production of Prototypes, samples and small series up to 500 pairs per day.

ii) advanced option / level: CAM automatic machineries

On the contrary, in this option the department is supplied with mostly automated machineries able to operate starting from data generated by CAD / CAM systems, at centre's disposal. Machineries are served by a short manual conveyor dimensioned according to required production volumes (samples and pre-series). An indicative list of automatic machineries provided at this level (necessary also in this case for all manufacturing process' phases: cutting, stitching, lasting and finishing) includes at least:

- NC cutting table without cutting die for leather and other materials
- electronic skiving machine
- electronic folding machine
- flat-bed, post-bed and zig – zag sewing machine
- electronic toe laster (pulling-over and lasting machine)
- electronic side and waist laster
- NC bottom pounding machine
- NC roughing/gluing machine
- electronic heel nailing machine

Also this second level of technological equipment includes two possible configurations: the first one (layout B-1) is dimensioned on a daily production of samples and prototypes not overcoming the 100 pairs / day. The second configuration (layout B-2) is dimensioned to sustain also productions of small series, up to about 500 pairs / day.

The following table summarizes the characteristics of the three levels of technological equipment and related dimensioning.

EQUIPMENT'S GENERAL LEVEL	TECHNOLOGY/ CONFIGURATION	JUST PROTOTYPES AND SAMPLES	SAMPLES, PROTOTYPES AND BATCH PRODUCTION
TRADITIONAL	Basic machineries mechanization starting phase (traditional)	<= 100 pairs / day Configuration A-1	About 500 pairs / day Configuration A-2
ADVANCED	Electronic machineries, mostly automatically worked	<= 100 pairs / day Configuration B-1	> 500 pairs / day Configuration B-2

Appendix 1 presents purely a san example, the lay-outs A-1 and B-2 as well as the complete list of related equipments.

3.6. TEST AND QUALITY CONTROL LAB EQUIPMENTS

Equipment, in its wide and great availability, is nowadays transforming the reality of physical-mechanical tests analysis labs, remarkably changing the role of people operating there from operator to controller. As a consequence, there's a change in exigencies – spaces – times. In this context, modular systems with dynamic composition, studied to allow the maximum designing flexibility, have developed.

It was noticed that the lab is the venue where the technical staff spends most of its time. It must therefore be a safe, functional, comfortable place able to provide the best operative conditions for people working there and for equipments.

Such integrated systems provide:

- better space exploitation and organization;
- greater surface for equipments and operator, with an equal surface;
- rational planning of self economic resources;
- possibility of widening the system in the future;
- labs in keeping with users' requirements and expectations;
- quick access to plants in case of maintenance;
- simplified cleaning operations for a better hygiene in the lab;
- possibility of changing, recovering and reusing somewhere else structures and accessories, also some time later, because all elements have unified dimensions.

Equipments and tools belonging to this lab are reported in Appendix 1; their description is deepened in Appendix 2.

* * * * *

Regarding centre's equipments, the two following general considerations are worth:

1. The number of CAD hardware stations depends from the number of services to be supplied; project's starting phase provides for a single station dedicated to every activity; in the following phases and according to the volume of services the centre is asked to supply, their number is expected to increase. Such rise is provided at level of investment budget.

2. All CAD / CAM stations are connected, as well as, if present, the check units of the pattern-making peripheral devices or prototypes/small series department machineries; the item "infrastructures" requires the necessary Ethernet devices; they include at least a switch and a router for internet , as well as all the required cabling.

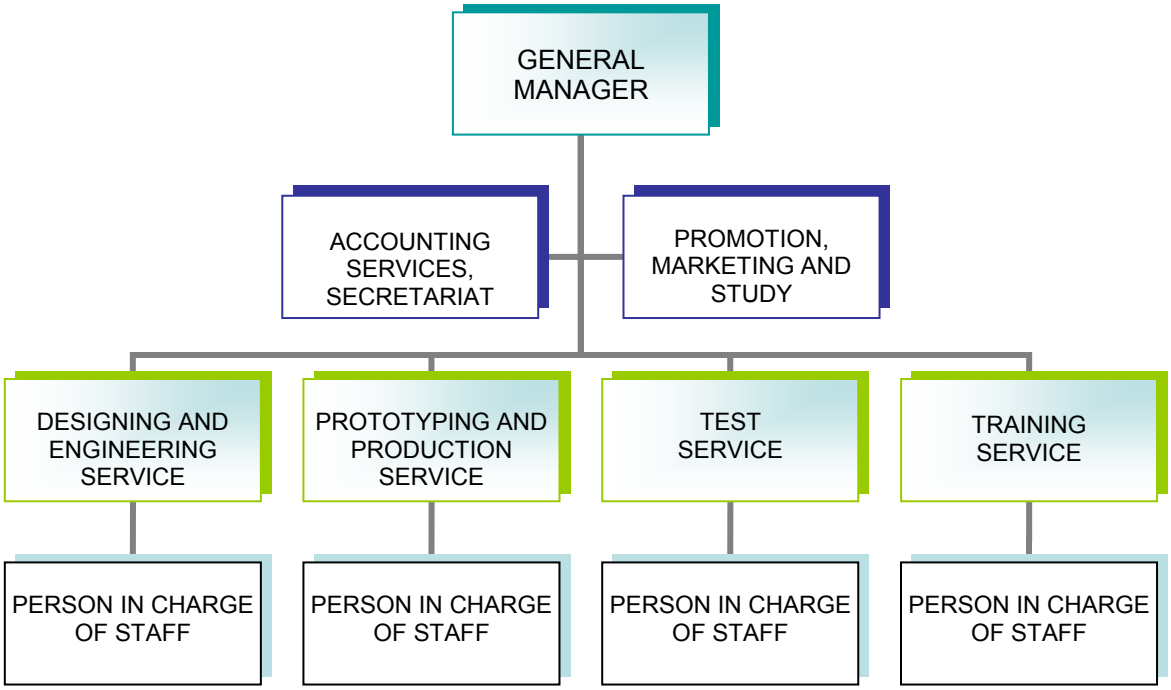
The project for the realization of the Service Centre provides for three different phases (starting phase, basic functionality phase, advanced functionality phase), representing different levels of a progressive increase of Service Centre's functionality, as well as specific moments of its implementation plan according to the expected final technological level (according to the typology and average technical level of companies applying to the centre), the different development phases may all be completed or simply in part carried out; namely, when justified by the context, complete the project with a technological equipment, for example, only STARTING or BASE, providing the development to the subsequent phases only later and basing on sector's technological grow of centre customer companies.

4. DETAIL OF HUMAN RESOURCES

Service centre's management is warranted by a structure run by a General Manager and organized in four main functions:

1. product development designing and engineering service
2. prototyping and samples' production service
3. tests on materials, components and finished products' service
4. training service

Each one of these Functions is directed and coordinated by a Person in charge of Function, responding to centre's General Manager; Accounting Services and Secretariat, responding to the operative functions, are also provided in staff.



4.1. ORGANIZATION CHART AND FUNCTIONS' DETAIL

4.1.1. General Management

(a) General Manager

- *Capacity*
  He coordinates and manages all centre's activities and personnel. He manages the promotion of centre's activities by potential customers and the relationships with local organizations and institutions; he is also in charge of bookkeeping and administrative aspects.

- *Professional profile of reference*
  The ideal candidate must have a consolidated experience in business management, better if in the field of services; the knowledge of the footwear sector is a preferential element (but not indispensable).

- *Training curriculum*

Since the future general manager must have a substantiated professional experience, no specific training procedure is provided; the possibility of management courses or stages for the in-depth technical analysis on centre's equipments, services and project's realization steps are not to be excluded.

Two services are connected in staff to the general management; accounting and secretariat and promotion, marketing and study. The following pages shortly report their functions:

4.1.2. Accounting and secretariat services

This service is asked to perform all the necessary activities connected to secretariat and to centre's administration; its staff will be dimensioned basing on the quantity and nature of the specific services supplied. Secretariat services include the organization of the different activities of the centre, the management of enrolments to training courses, the support to centre's different functions. Administrative services include all bookkeeping, financial, invoicing activities.

4.1.3. Promotion, marketing and study services

This second function is aimed at promoting centre's activities and services, either from a local point of view, by the companies belonging to the sector of reference, or at international level. Besides promotion activities, this function will also deal with aspects linked to the commercialization of centre's services and will serve as study centre of the local footwear sector; these services (promotion, marketing and studies) should be supplied either to centre itself or in particular to customer companies by supporting their internal structures (if present) or like further support connected to the presence of the centre.

4.1.4. Product development designing and engineering service

This function is in charge of supplying the services of designing and product development addressed to companies of the footwear sector and customers of the centre; it is in charge of pattern-making management, of its equipments and machineries.

(a) Person in charge of the service

- *Task*
  The person in charge of this service coordinates its activity, vouching for it with the General Manager; he manages its human resources and is the technical interface of reference for customer companies, with regard to the services supplied by his own function. He is furthermore in charge of maintenance and updating of machines left in charge of this service.

- *Professional profile of reference*
  The ideal candidate must have a basic training as pattern-maker, working experience in the pattern-making department, better if as function head; the knowledge of CAD / CAM instruments is suggested but not indispensable.

- *Training curriculum*
  Since the candidate is asked to already have a specific footwear training, no basic courses are provided; on the contrary, specific courses on designing CAD / CAM are to be provided, only at level of general knowledge.

(b) CAD Stylist

- *Task*
  The CAD stylist operates on the 3D CAD station for the stylistic designing, responding to the person in charge of the service; he interacts with customers with regard to his own area of competence and with his own colleagues operating in the technical pattern-making area.

- *Professional profile of reference*
  The ideal candidate is either a footwear pattern-maker with a stylistic bent, or a stylist or designer coming from other sectors; the specific experience in the field of stylistic designing is appreciated but not indispensable, as well as the knowledge of specific computer devices (a good knowledge of computer instruments is however indispensable).

- *Training curriculum*
  According to the specific curriculum of the candidate a training route is to be provided, which includes the basic and advanced teaching of style pattern-making, as well as specific courses for the use of 3D CAD and computerized graphics systems.

(c) CAD Pattern-maker

- *Task*
  The CAD pattern-maker operates on the 3D CAD station for technical designing, responding to the person in charge of the service; he interacts with customers with regards to his area of competence and with his colleagues operating in the stylistic pattern-making department and with prototyping and production services.

- *Professional profile of reference*
  The ideal candidate has experience as a technical pattern-maker acquired in the footwear companies; a deep knowledge of specific CAD / CAM devices is not indispensable (a good knowledge of computer instruments is however indispensable).

- *Training curriculum*
  According to the specific curriculum of the candidate advanced courses of technical pattern-making and specific courses of technical CAD / CAM designing are to be provided.

(d) Production technician

- *Task*
  Production technician operates on the PDM station, responding to the person in charge of service; he interacts with customers with regards to his area of competence and with his colleagues operating in the technical pattern-making department and with prototyping and production services.

- *Professional profile of reference*
  The ideal candidate must have a footwear experience essentially in the field of production, better if specific of product's engineering (basic note and above all manufacturing cycles). No specific knowledge of PDM devices is required, but a good basic competence on computer devices is welcome.

- *Training curriculum*
  According to the specific curriculum of the candidate advanced training modules of footwear technology and specific courses on the use of PDM software instruments are to be provided.

4.1.5. Prototyping service and production of samples

This function is aimed at supplying the service of production of prototypes, samples and small series; it is in charge of the management of machineries and plants for subcontractors' production.

(a) Person in charge of the service

- *Task*
  The person in charge of this service coordinates its activity, responding to the General Manager; he manages the human resources belonging to it and forms the technical interface of reference for customer companies, with regards to the services supplied by his own function. He is furthermore in charge of the maintenance and updating of equipments belonging to his service.

- *Professional profile of reference*
  The ideal candidate of this activity must have a substantiated experience in the field of footwear manufacturing, better if related to sampling and pre-series activities. A good knowledge of the most up-to-date machineries and of computer devices in general is furthermore appreciated.

- *Training curriculum*
  Since this position requires a skilled candidate, no basic training course is provided, but only interventions of investigation and possible retraining: training modules, introductory to the use of CAD / CAM devices and advanced courses of footwear techniques are therefore to be provided.

(b) Export of prototyping machineries

- *Task*
  The expert of prototyping machineries operates on machineries themselves, responding to the person in charge of the service; he is in charge of the use and maintenance of machineries and of the execution of the service activities supplied by the centre on them.

- *Professional profile of reference*
  A specific profile of reference is not required for this figure; the ideal candidate should have a knowledge (it's better if it is close, but the basic one should be enough) of NC computerized control machineries, not necessarily acquired in the footwear sector.

- *Training curriculum*
  His training curriculum is essentially directed to the use of machineries he is asked to use; moreover, an introductory course to footwear technology is provided, in case he doesn't come from this sector. Thus, in this case, a route which includes basic courses on footwear technology, as well as specific training courses for the use of the different machineries at centre's disposal.

(c) Operator of automatic or manual machine

- *Task*
  The capacity of automatic or manual machine's operator is to carry out, with the use of the machineries available for this function, one or more operations on prototype shoes and pre-series. Basing on the required productive dimension and volume, this "macro resource" should be dimensioned in detail and exactly define the single profiles.

- *Professional profile of reference*
  The ideal candidate of this job is a subject with working experience in footwear productive departments; the recruitment (at least for some positions) of people without specific experience is also possible, but against a more intense training effort.

- *Training curriculum*
  This figure doesn't provide any specific course, but rather a training in the field for the execution of the specific productive task and for the use of the suitable machineries; the training should be carried out with the support of external staff sent on the scene.

The number, the task and the detailed qualification of automatic or manual machine's operators depends on the level of technological equipment used and on the configuration, daily production target function (of samples, prototypes and small pre-series) to be reached. Some type-tasks can in any case be fixed beforehand and include:

- cutter/operator of the cutting machine
- person in charge of preparation to stitching operations (skiving)
- person in charge of stitching operations (stitching)
- person in charge of upper profiling (moulding)
- person in charge of lasting operations / lasting machine(s) operator
- person in charge of sole finishing operations

- person in charge of finishing operations

Other more specific tasks may be only defined in the executive phase of centre's creation and starting project.

4.1.6. Tests on materials, components and finished products' service

This service is in charge of all test and certification activities supplied by the centre: it manages the related lab and all machineries included in it.

(a) Person in charge of the service

- *Task*
  The person in charge of this service coordinates its activity, responding to the General Manager; he manages the human resources of his area and constitutes the technical interface of reference for customer companies, with regards to the services supplied by its function. He is furthermore in charge of maintenance and updating of related equipments.

- *Professional profile of reference*
  The ideal candidate must have a basic training in the field of chemistry / materials and, if possible, a working experience ripened in test and analysis labs, not necessarily of the footwear sector. He must furthermore well know the main equipments of the chemical and mechanical analysis used in these labs.

- *Training curriculum*
  Since the ideal candidate is experienced, no specific training routes are provided, but the ones aimed at a possible updating of knowledge and their specialization towards footwear. Provided courses are therefore basic courses of footwear technology and, if necessary, refresher courses on chemical / physical / mechanical footwear analyses.

(b) Lab technician

- *Task*
  The lab technician responds to the person in charge of service itself and operates on materials / components / finished products, physical and mechanical analyses, with particular reference to footwear materials' behaviour

- *Professional profile of reference*
  The candidate must have a basic chemical / physical knowledge and possibly a working experience in test and analysis labs on material and finished products; non necessarily in the footwear field.

- *Training curriculum*
  The training curriculum of this subject substantially provides on one side the updating on the most modern analyses techniques and on the other side their specialization on footwear; the training route includes basic courses of footwear technology, as well as refresher courses on footwear chemical / physical / mechanical analyses.

4.1.7. Training service

This last function is finally in charge of organizing and supplying centre's training activities, offered to customer companies; it is in charge of the infrastructures (equipments and spaces) used for training.

(a) Person in charge of the service

- *Task*
  The person in charge of this service coordinates its activities, responding to the General Manager, manages the human resources and constitutes the technical interface of reference for customer companies with regards to services supplied by its function. He is moreover in

charge of maintenance and updating of the available equipments, of drawing up and updating of training programme offered to customers and of the coordination of possible external trainers.

- *Professional profile of reference*
  The ideal candidate must preferably (but not necessarily) have a previous experience in the field of didactics or professional training, better if with coordination/organization tasks. Or candidatures of people with a deep knowledge of footwear themes should be assessed, also without particular experiences in the field of training, provided that their competence is particularly significant.

- *Training curriculum*
  Since footwear competence is prerequisite of this professional figure, his training curriculum substantially includes an updating on the use of the most modern technologies, which will become the subject of his training courses. That's the reason why he is asked to personally know them. His training course must therefore include either introductory or advanced courses of technical and style designing with CAD / CAM 2D and 3D, courses on the use of PDM instruments as well as advanced courses on footwear technology.

(b) Trainer

- *Task*
  The trainer operates in the field of the corresponding service, under the coordination of the person in charge of it; he is asked to manage the courses he is in charge of, the relationship with course attendants and the management and distribution of related training material.

- *Professional profile of reference*
  The ideal candidate must preferably (but not necessarily) have a previous experience in the field of didactics or professional training. Or candidatures of people with a deep knowledge of footwear themes should be assessed, also without particular experiences in the field of training. Basing on the candidate's specific background (pattern-making, planning, production), he will be given the task of following the specific courses where his basic competence is put to better use.

- *Training curriculum*
  Since footwear competence is prerequisite of this professional figure, his training curriculum substantially includes an updating on the use of the most modern technologies, which will become the subject of his training courses. That's the reason why he is asked to personally know them. His training route is therefore similar to the previous figure.

The previous description outlines the tasks related to the different figures of the organizational chart and related training curricula; the real number of each of these resources concerns the **dimensioning** of the service centre according to the volume of activities (related to its different functions) it is expected to carry out.

The Person in Charge of the Centre will be selected first, and he will cooperate in its creation and starting up, in the selection of the different professional figures. The first figures to be selected will be trainers, who will be engaged ("*teach the teachers"* method) in training the whole staff of the centre, before starting the training services towards outside.

Centre's resources starting up will be carried out in four phases:

- **PHASE 1**: selection of the General Manager and of the first group of trainers
- **PHASE 2**: trainers' training basing on the curriculum outlined in the previous pages and carried out by skilled staff.
- **PHASE 3**: selection and training of centre's staff, carried out by trainers.
- **PHASE 4**: starting of the training service towards outside, with the trainers of the Centre and in collaboration with (if necessary and/or required) skilled trainers.

NOTE 1: The training function doesn't have its own equipments (at least at the beginning), but uses the ones of the other functions (CAD stations, peripheral devices and machineries); such sharing of equipments and

spaces must be managed with care at least in the starting phases of structure's operativeness. When the volume of services will require it (economically justified), other stations/machineries, only dedicated to training, should be installed.

NOTE 2: No detailed description of the secretariat and administrative staff for centre's functioning is provided, since it is reckoned not to belong to this study. If necessary and required, a detail of it can be provided, according to customer's exigencies.

5. SERVICE CENTRE PROJECT IMPLEMENTATION PLAN

The realization of the service centre covers a period of 18 months and includes the following main phases:

I. Starting up
II. Staff selection and training
III. Support for operative start
IV. Continuative support after centre's set up

Implementation plan in detail:

1. Starting up

1.1. space and structures' detection

- objectives
  Detect a building with characteristics and spaces suitable to house the centre, assess adjustment interventions and contractual and prescriptive interventions.

- outcomes
  structure detected, contracts activated, go-ahead to adjustment works

- length: **2 months**

1.2. structures' realization

- objectives
  Carry out on the building all completion / adjustment interventions necessary to house centre itself, included electric plants, motive power, compressed air, data nets, telephone services, Internet, furnishings and other setting ups.

- outcomes
  Centre's venues and infrastructures completed and fit for use, ready to receive equipments.

- length: **4 months**

1.3. equipments' selection and supply

- objectives
  According to the offer of services the centre is asked to provide, detect and selection all equipments (as listed in Appendix 1) at disposal, contact suppliers, agree delivery and installation; delivery of the different equipments for the different starting up phases.

- outcomes
  centre's equipments delivered before for the STARTING level, later for the BASE one and finally for the ADVANCED one.

- length: **13 months** (for the three phases)

1.4. services' installation and starting up – STARTING level

- objectives
  install and activate, with suppliers' collaboration, all equipments provided for the STARTING level/option.

- outcomes
  equipments of the STARTING level/option installed, functioning, tested and accepted.

- length: **3 months**

1.5. services' installation and starting up – BASE level

- objectives
  install and activate, with suppliers' collaboration, all equipments provided for the BASE level/option.

- outcomes
  equipments of the BASE level/option installed, functioning, tested and accepted.

- length: **3 months**

1.6. services' installation and starting up – ADVANCED level

- objectives
  install and activate, with suppliers' collaboration, all equipments provided for the ADVANCED level/option.

- outcomes
  equipments of the ADVANCED level/option installed, functioning, tested and accepted.

- length: **3 months**

2. Staff selection and training

2.1. General Manager selection

- objectives
  Detect and selection, according to the curriculum reported in the previous section, Centre's General Manager.

- outcomes
  Director detected, selected and taken on

- length: **2 months**

2.2. staff selection

- objectives
  Detection and progressive selection of the whole staff initially provided for the centre; the selection will occur per groups/functions, according to a selection plan elaborated with the General Manager; as soon as the staff for a service/function is available, he will begin his training. The first group to be selected will however be trainers' one.

- outcomes
  All personnel provided for the centre selected and taken on (progressively and up to the end of this activity).

- length: **4 months**

2.3. staff specific training

- objectives
  Progressive training of the whole staff of the centre, according to the curricula detected, carried out by centre's trainers group.

- Outcomes
  All centre's staff trained for all services and able to operate in the different tasks.

- length: **7 months**

3. Support for operative start

3.1. organization of functions

- objectives
  Detailed definition in cooperation with the General Manager and with the Persons in charge of Services of centre's functions, of their operative modalities, of the procedures and services' commercial offer.

- outcomes
  All centre's functions/services defined and structured; detailed operative procedures approved by managers.

- length: **3 months**

3.2. functions' operativeness

- objectives
  Start of functions operativeness, internal test of procedures, quality assessment of services, equipment operativeness

- outcomes
  All centre's functions/services operative and tested.

- length: **2 months**

3.3. support for the first campaign of services

- objectives
  Gradually make centre's operativeness run regularly in all provided levels and with the complete range of services; consolidate and test the commercial and offer documentation as well as the training material.

- outcomes
  Service Centre running regularly, open to customer companies, ready to offer its own services.

- length: **3 months**

Implementation project includes two significant check points (milestones):

- the first one **at the end of month 10** coincides with a first level of centre's operativeness; its infrastructures are fit for use, the equipments of the STARTING level installed and functioning, a first group of employees is available and trained; the centre can start its test providing a first series of (promotional) services to companies.

- the second one **at the end of month 18** (and of the project) marks the full centre's operativeness at all implementation levels, with all services, staff and functions activated and ready to use.

4. Continuative support after centre's set up

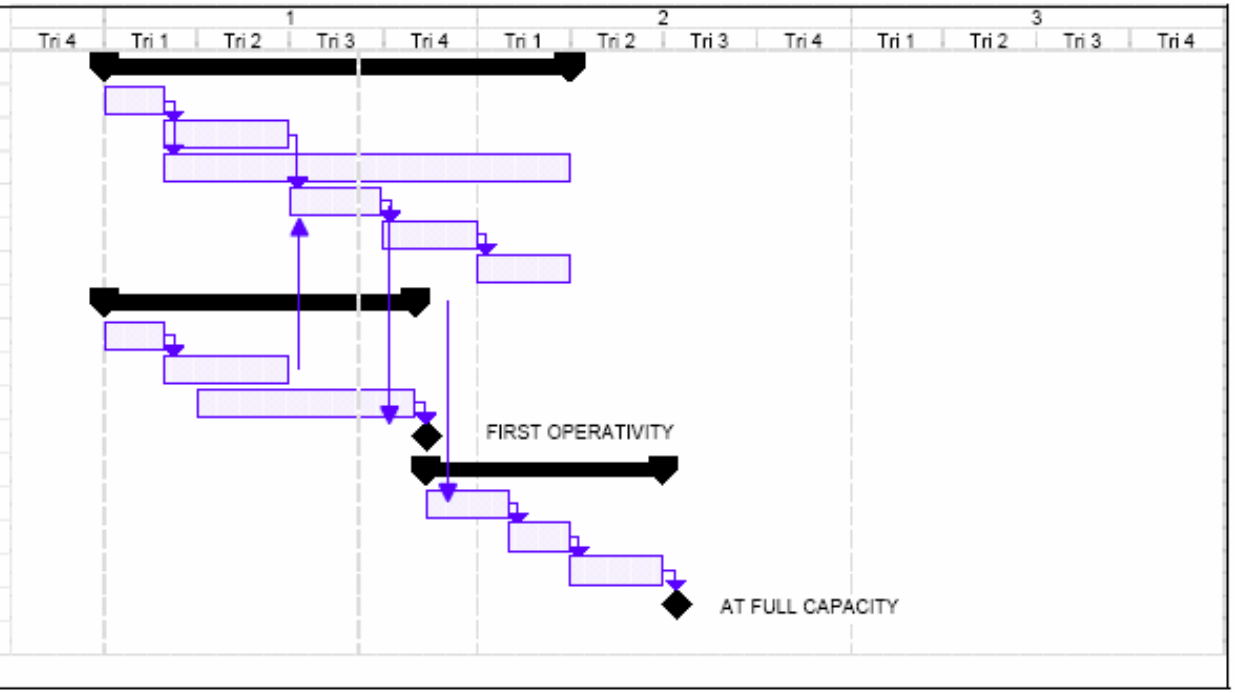
Even though this is not a specific phase of service centre creation plan (which ends with the phase 3), it represents however an important event of its setting up since it represents the continuative support given to it to keep and develop its activity in time. Such activity takes shape in two main currents:

a) technologies' monitoring and upgrading
b) style and fashion trends' monitoring

Project time chart is in the following page.

Time chart of Service Centre creation project

ID	Activity
1	**Setting up**
2	Detection of spaces and structures
3	Realization of the structures
4	Equipment selection and supplying
5	Services' installation and setting up - BASE
6	Services' installation and setting up - ADVANCED
7	Services' installation and setting up - STARTING
8	**Staff selection and training**
9	Selection of the General Manager
10	Staff selection
11	Staff specific training
12	**Centre ready to offer the first services**
13	**Placing side by side for the operative starting**
14	Function's organization
15	Function's setting up
16	Placing side by side for the first service campaigns
17	**Centres' operativity**

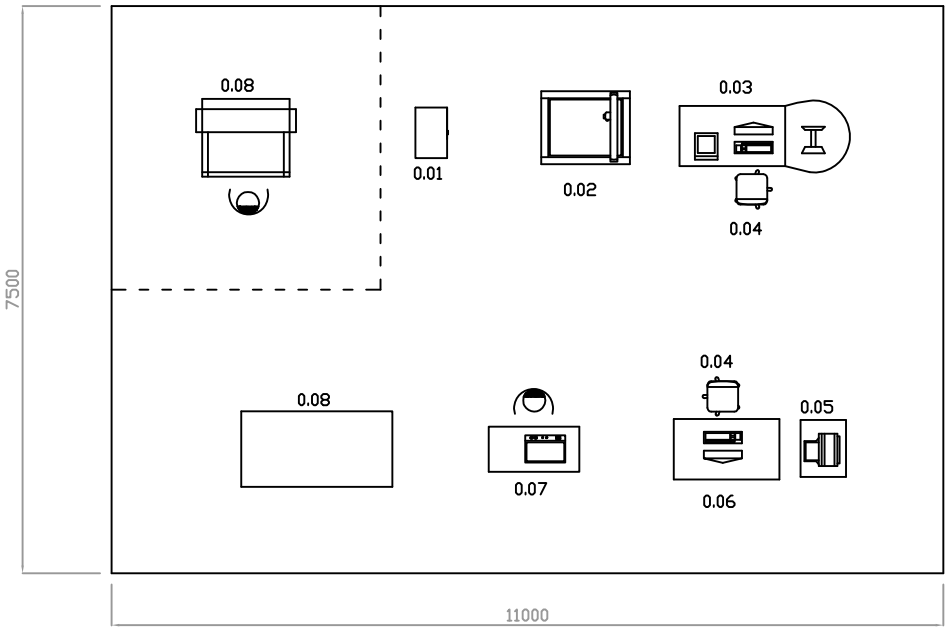


APPENDIX 1: Lay-out with list of machines and equipments

1. Lay-out M-3: CAD 2D + 3D Pattern-making Complete Module

		[redacted]	
Code	**Machine**	**Quantity**	
0.01	Chest of drawers to collect different records	1	
0.02	Plotter suitable for cardboard and polycarbonate cutting with contemporary trimming of pen and blade. Pedestal included. Working area 910x610 mm and 650 mm/sec max speed	1	
0.03	Office table, semicircular on one side, used for technical CAD 2D and 3D station, supplied with: – Personal Computer Desktop P4, 3,2 GHz, hard disk 80 GB, DVD, operative system Windows XPPro Monitor LCD 19” – Digitizer 2D A2, working area 457x610 mm – Digitizer 3D manual, for style shapes and lines. Precision 0,38 mm Interface software. Base supplied with jointed and adjustable last container device. CAD station allows the visualization and execution of 3D footwear designing. It is supplied with all 3D grading characteristics and gives to companies manufacturing lasts the possibility of quickly downloading computerized lasts.		
0.04	Coupling chair covered with fabrics	1+1	
0.05	A3 colour laser printer Piece of furniture for printer	1 1	
0.06	Office table used for CAD station creative type and supplied with: – Personal Computer Desktop P4, 3,2 GHz, hard disk 80 GB, DVD, operative system Windows XPPro Monitor LCD 19” The CAD station allows a suitable rendering for footwear visualization fit for the stylist. One last and one drawings allow the graphic configuration of a 3D complete footwear, giving depth and weave to components, sole included. Lasts can be directly digitally imported and modified if necessary (with A4 scanner)	1 1 1	
0.07	Thermo-moulding machine to get last shells to draw footwear/upper patterns Support table	1 1	
0. 08	Table to place materials, to be used to compare and to suit them, other	1+1	
0.09	Punching machine for fibreboard sheet with working area equal to 800x580 mm, supplied with punch, software for cardboard optimization and machine and pen unit management.	1	

CAD 2D+3D Pattern-making



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Scale 1:100

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Layout M-3

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CAD 2D+3D Pattern-making
Complete Module

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2. Lay-out A-1: Module 100 pairs – Traditional samples/small series

Department	**Upper preparation, execution, cutting**	[redacted]	
Code	**Machine**	**Quantity**	
1.01	Chest of drawers for envelopes and cardboard templates patterns with 60 drawers	2	
1.02	Preparation and distribution table	1	
1.03	Mini-clicking press for different interventions (i.e. parts with very difficult profiles, toe grain, etc)	1	
1.04	Table for upper manual cutting	5	
1.05	Table to place cut materials	6	
1.06	Trolley to collect leathers	6	
1.07	Basket to collect wastes	6	
1.08	Splitting-evening machine for cut pieces	1	
1.09	Table to check cut pieces with execution of marks: overcome stitches, placing for the application of ornaments, seam outline	1	
1.10	Numbering machine for upper and linings	1	
1.11	Vamp pre-moulding machine for low boots and boots	1	
1.12	Trolleys to collect samples and mini batches of cut uppers	6	

NB: In case of samples' cutting, an operator can manually realize from 20 to 25 pairs/8h, in case of boots from 8 to 15 pairs/8h.

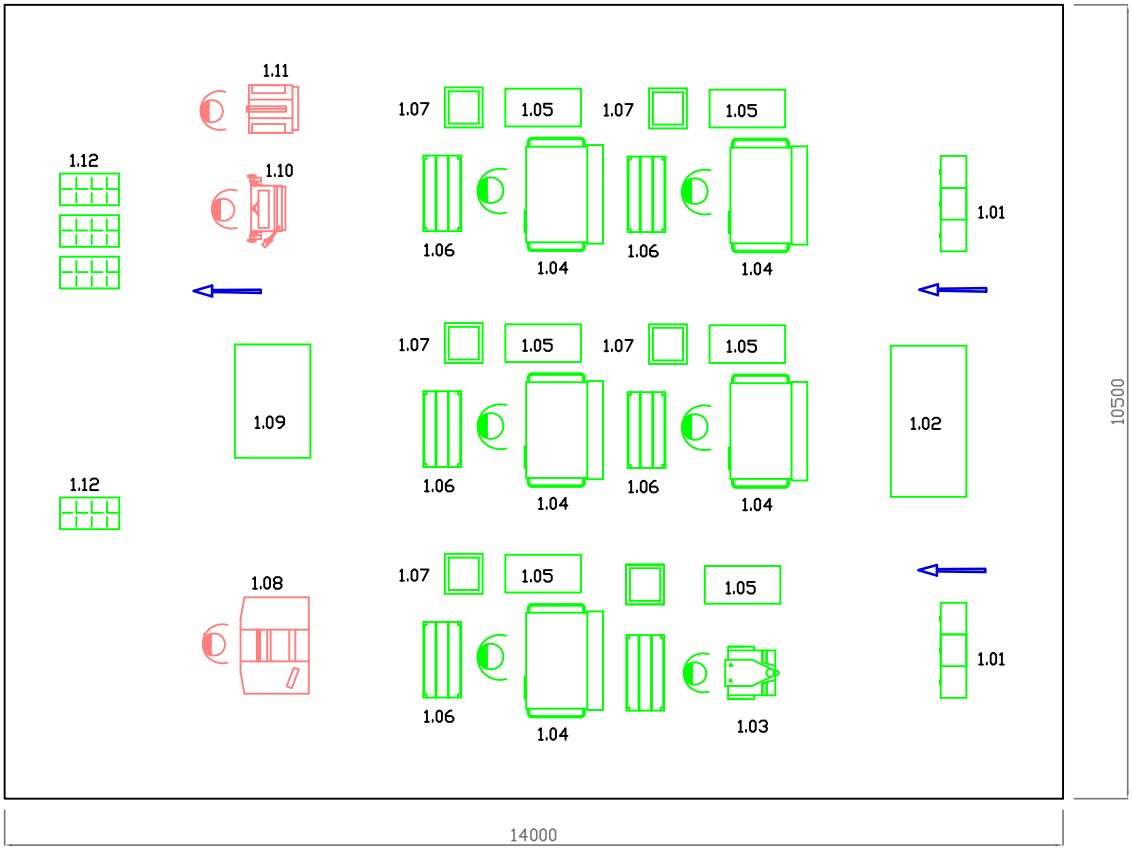
Department	**Upper preparation and assembly**	[redacted]	
Code	**Machine**	**Quantity**	
2.01	Skiving machine (clutch engine)	1	
2.02	Coupling machine, application of reinforcements with manual plate's rotation	1	
2.03	Ornamental punching-scalloping machine	1	
2.04	Zig-zag sewing machine	1	
2.05	Flat-bed sewing machine	3	
2.06	Table for manual interventions on sewing machines	2	
2.07	Arm-sewing machine also for edges and application of mignons/profiles	1	
2.06	Table for manual interventions on sewing machines	2	
2.08	Post-bed sewing machine	3	
2.09	Table with drawer to collect different spare parts for eyelets/rivets application device	1 1	
2.10	Table to check uppers and possible interventions of setting/retouching	1	
2.11	Trolley to collect upper batches to be manufactured with 2 basins	12	
2.12	Adjustable stool with stuffed seat and iron back	12	

Department	Lasting		
Code	**Machine**	**Quantity**	
3.01	Last holder with 3 openings and partition	2	
3.02	Table to apply insole and stiffeners' basting by means of staples. Manual application of toe with glue*	1	
3.03	Steaming machine and vaporizer for upper softening	1	
3.04	Column lasting-jack for low-heel shoes, basting, toe pulling-over	1	
3.05	First mechanization toe laster - plates series	1	
3.03	Steaming machine and vaporizer for sides and seat softening	1	
3.04s	Column lasting-jack for low-heel shoes and boot. Outside counter gluing and basting	1	
3.06	Manual seat-laster	1	
3.10	Small table equipped with manual working tools to last (sandals included). Kit provided	1 1	
3.11	Chairs suited to the small table	2	
3.12	Bench thermo-ironing machine Support table	1 1	
3.13	Trolleys to collect shoes with 4 shelves for the lasting area	4	

*NB Using the suggested manual toe-laster, once the toe has been applied, it is trimmed to get a suitable profile and facilitate lasting itself; the device to apply toes is not required.

Department	**Bottom manufacturing – finishing**		
Code	**Machine**	**Quantity**	
4.01	Trimming/sand-papering machine with plugs, 1 whirlwind receptacle and 2 working stations	1	
4.02	Table to apply glue on lasted shoe and sole	1	
4.03	Infrared desk reactivation heat setter for glue	1	
4.04	Oleo-dynamic sole press with 2 basins	1	
4.05	Brushing machine with one whirlwind receptacle and 2 working stations	1	
4.06	Last puller: small column lasting jack for low-heel shoe and boot	1	
4.07	Pneumatic heel nailing machine	1	
4.08	Table for sole checking and for different retouching with side drawer	1	
4.09	Stamping machine to mark logo on cleaning heel seat lining	1	
4.10	Brushing/polishing machine with 1 station and whirlwind dust receptacle	1	
4.11	Table to apply laces, different accessories, glue spreading on insole and insertion	1	
4.12	Table with automatic ironing apparatus and flat irons, last check and packaging	1	
4.14	Trolley to collect shoes with 4 shelves for bottom manufacturing and finishing area	4	

100 TRADITIONAL Cutting dept.



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Cutting department
Module 100 pairs Traditional

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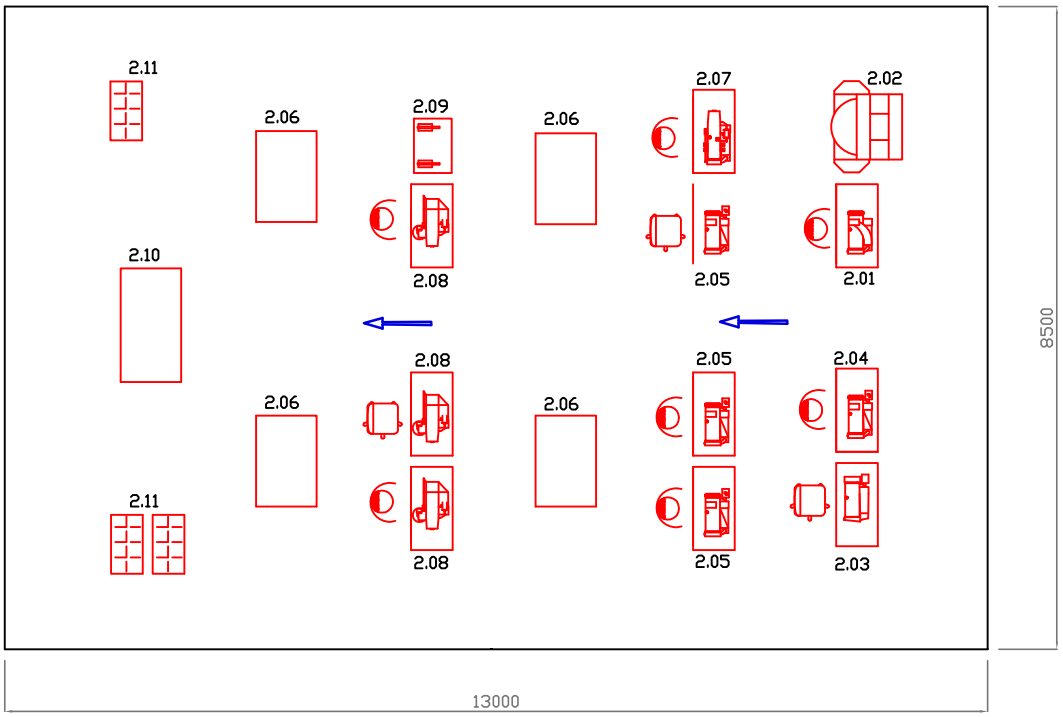
20.DEC.2010	AF	ATR	1 : 100

100 TRADITIONAL Closing dept.



Area 110 sqm

Scale 1:100

DRAWING N°
Layout A–1b

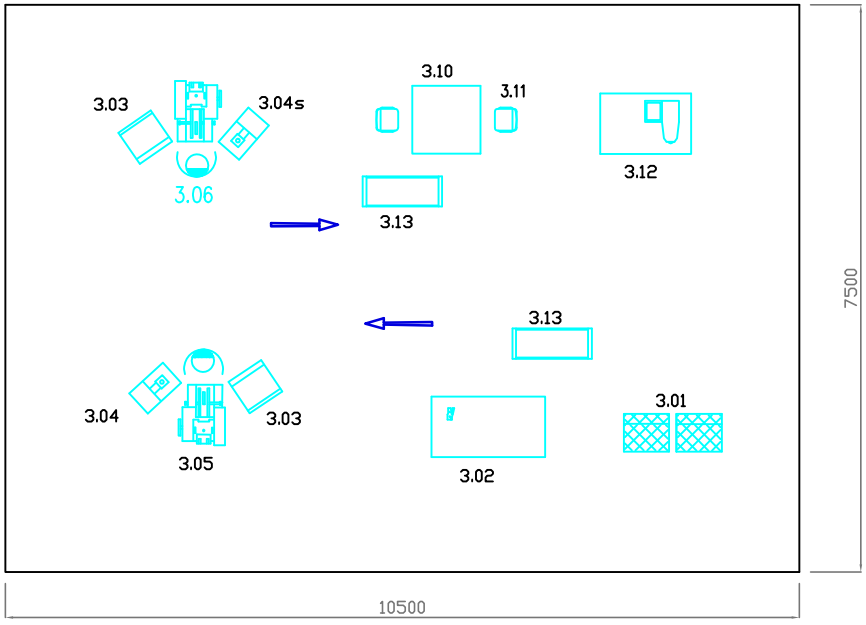
PISIE

Via Matteotti, 4/a
27029 Vigevano (PV) Italia
Tel. +39.0381.70137

Closing department
Module 100 pairs Traditional

DATE	DRAWER	VERIF.	SCALE
20.DEC.2010	AF	ATR	1 : 100

100 TRADITIONAL Lasting dept.



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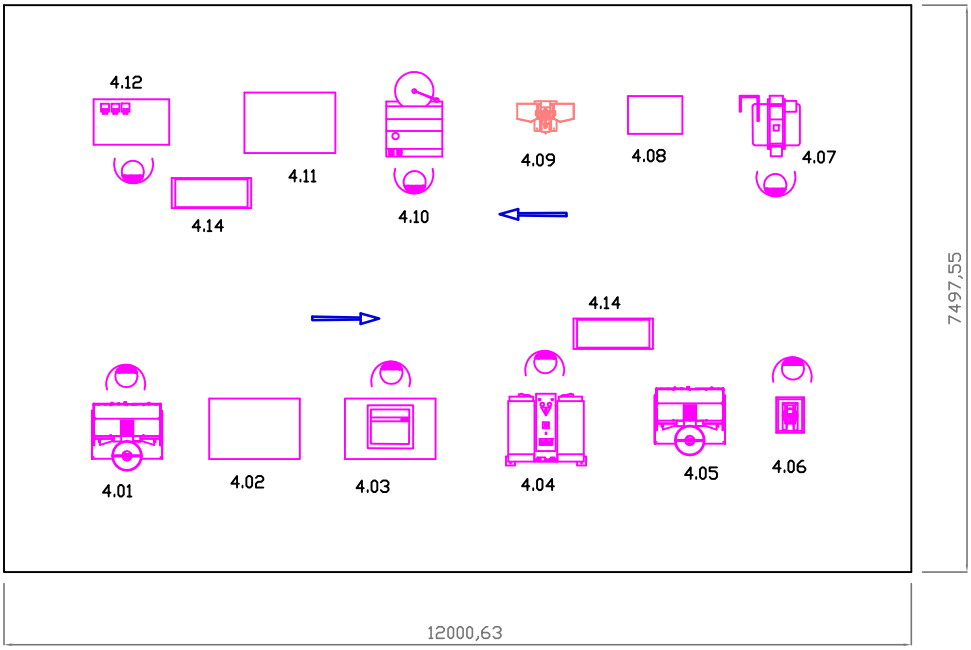
Scale 1:100

DRAWING N° Layout A–1c	Lasting department Module 100 pairs Traditional			
PISIE Via Matteotti, 4/a 27029 Vigevano (PV) Italia Tel. +39.0381.70137	DATE 20.DEC.2010	DRAWER AF	VERIF. ATR	SCALE 1 : 100

100 TRADITIONAL Finishing dept.



Superficie 90 mq

Scala 1:100

DRAWING N°
Layout A-1d

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Finishing department
Module 100 pairs Traditional

DATE	DRAWER	VERIF.	SCALE
20.DEC.2010	AF	ATR	1 : 100

3. Lay-out B-2: Module 500 pairs - Advanced

Department	**Upper cutting preparation, upper cutting**		
Code	**Machine**	**Quantity**	
1.01	Chest of drawers for envelopes and possible cardboard templates with 30 drawers	1	
1.02	Table to prepare and distribute work	2	
1.03	Cabinet with 4 shelves for different uses	1	
1.04	* CNC cutting table, high frequency vibrating blade, pen, punch, 2 perforators with automatic nesting	4	
1.05	Table to manually cut upper to be used in specific cases	1	
1.06	Table to place cut material	5	
1.07	Drum to collect wastes	5	
1.08	Trolley-trestle to collect leathers	5	
1.09	Numbering machine for upper and lining with pneumatic conveyor feed. 15 numbering discs, electronic timer and thermo-regulator, working surface 120x180 mm	1	
1.10	Table to check cut pieces and composition of trolleys to be sent to the evening and pre-moulding machine (if required)	1	
1.11	Splitting-evening machine; blade-rail plates unit with automatic regulation, optical control of position and chamfer symmetry, independent aspirators for trimming dusts and wastes	1	
1.12	Vamp pre-moulding machine for low boots and boots and series of plates for standard shoe	1	
1.13	Plastic boxes, 550 x 380 x 250 mm	80	

* NB – Cutting tables are placed to by two, rotated of 180°, so that cutters are back against back.

Department	**Upper preparation**		
Code	**Machine**	**Quantity**	
2.01	Computerized skiving machine with micrometric blade positioning, feed of pieces with programmed/variable/commanded by pedal speed. Skiving parameters visualized and micro-metrically adjustable. Pieces manufacturing with different trimming off and several hundreds of programmable interventions	2	
2.02	Coupling machine for reinforcements on upper with working surface 550x550mm	2	

Department	Upper assembling		
Code	**Machine**	**Quantity**	
3.01	Zig-zag sewing machine	1	
3.02	Flat-bed sewing machine	4	
3.03	Table for manual interventions on sewing machines	2	
3.04	Machine to open overlapping sewed edges, reinforcement smoothing and application. Double feed, ribbon cut by means of photocell, flexible feed speed 0-300 mm/sec easy to be managed	2	
3.02	Flat-bed sewing machine	4	
3.03	Table for manual interventions on sewing machines	2	
3.05	Adjustable folding/thermo-gluing machine which allows reliability of folding devices, speed feed up to 3000 rounds/1', clean and precise cuts, an accurate feed of glue	2	
3.06	Arm binding sewing machine	2	
3.07	Post-bed sewing machine with 1 needle	4	
3.08	Post-bed sewing machine with 2 needles	2	
3.03	Table for manual interventions on sewing machines	2	
3.09	Post-bed sewing machine with 1 needle with small step-by-step engines	2	
3.03	Table for manual interventions on sewing machines	1	
3.10	Post-bed sewing machine for lining setting and fastening interventions	2	
3.11	Application of iron accessories. Pneumatic self-perforating eyeleting machine with loader for eyelets with stem up to 7mm diameter	1	
3.12	Table for quality final check with possible interventions of micro-adjustments and settlements	1	
3.13	Adjustable stool with stuffed seat and iron back	38	
3.14	Semifinished product's handling. Version 1 - Automatic distributor with integrated management software, 34 working stations, 120 boxes for semifinished products, gravity shelf Version 2 – Working stations' feed by means of semifinished products' trolleys, supplied with 2 plastic boxes 500 x 350 x 100 mm	 1 70	

Department	Lasting		
Code	**Machine**	**Quantity**	
4.01	Last container with 8 holes	2	
4.02	Pneumatic device to fix insole, single stroke, with pedal, supplied with trimming device, nails length 12-16mm	1	
4.03	Table to place upper combined with the machine to apply the thermoplastic toe with pliers, 2 stations. Preparation of stiffener and placing in seat housing	1 1	
4.04	Moulding machine with 2 hot stations, adjustable with innovative management of the manufacturing phases	1	
4.05	Lasting edge sandpapering machine for free upper	1	
4.06	Steaming machine-reactivating device for upper vamp and side and toe softening with saturated steam and overheated compressed air	1	
4.07	Adjustable pulling-over and lasting machine: 2 adjustable markers with routes independent from toe and up to vamp connector. Last profile with immediate choice. Plates: universal kit. Tip pliers with quick clutch. Pliers 9	1	
4.08	Steaming machine-reactivating device for uppers on side/heel-seat and stiffener's softening with saturated steam and overheated compressed air	1	
4.09	Heel-seat/side laster with adjustable routes for side nails for thermoplastic application on side and heel-seat on insole	1	
4.09*	Programmable heel-seat/side laster with tackles or micro-tackles. Universal version: all nails, all glue and nails in all parts	1*	
4.10	Pounding machine for the complete smoothing of lasted edge along the whole edge last. Man's shoes. Aphonic booth	1 1	
4.10*	Pounding machine for the complete smoothing of lasted edge along edge last for ladies' shoes. Aphonic booth	1 1	
4.11	Stabilization heat setter with conveyor and use of hot air and steam mixture at high speed and temperature (80-150°C) and separately adjustable quantities. Time of permanence from 1 to more minutes.	1	
4.12	Thermo-ironing machine with hot air and steam generated during intervention itself	1	

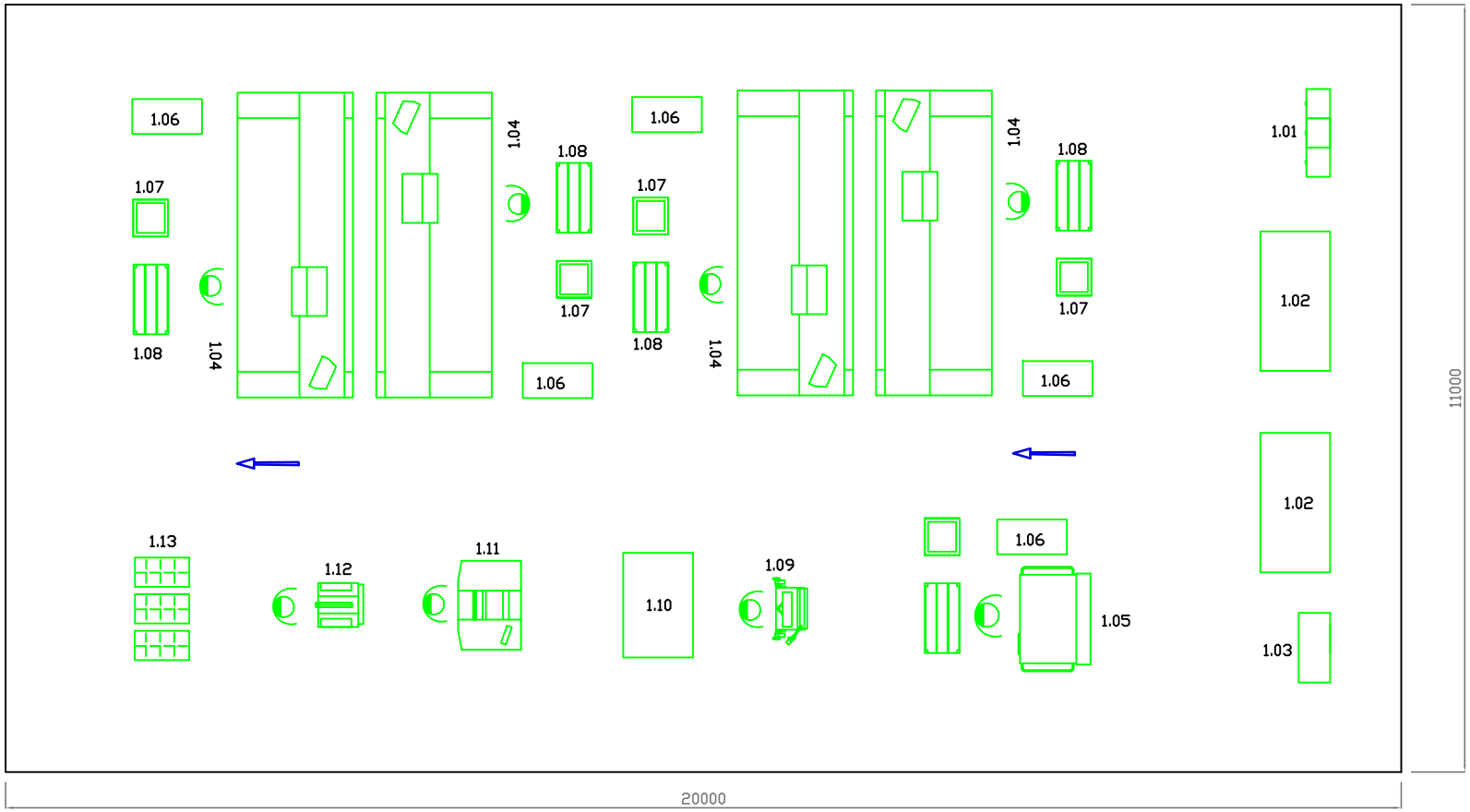
NB - The lasting cycle should also be provided with the machine designed to last sandals (see after item 4.09)

4.09/a	Pneumatic lasting machine for sandals designed to allow an easier lasting of shoes till now devoid of means to mechanize lasting itself	1 1	

Department	Bottom manufacturing – Finishing	[redacted]	
Code	**Machine**	**Quantity**	
5.01	Computerized sandpapering-gluing machine for shoe bottom with 1 working station, self-learning of detected profile with 60 points	1	
5.01*	As an alternative, it should be possible to have recourse to: - Man's version: a roughing machine with double function combined with automatic tools' change - Lady's version: a roughing-pounding machine with double function combined with automatic tools' change (in this last case the pounding machine corresponding to item 4.10* would be removed)	 1 1	
5.02	Service table for glue application on soles. Water or solvent base glue container positioned on support located near the table, supplied with 2 guns, brush and feed tube	1 1	
5.03	Glue water dryer-reactivating device with special quartz resistance. Adjustable temperature for soles and lasted shoes as well as for conveyance speed.	1	
5.04	Oleo-dynamic sole press with 2 stations, with lamellar pads with differentiated pneumatic conformation, self-adjustment of toes for last fastening	1	
5.05	Brushing machine supplied with aspirator and dust receptacle with electronic speed converter, 2 working stations, 2 whirlwinds with cloth sacks without accessories. Upper sizes application	1	
5.06	Last puller for every kind of lasts	1	
5.07	Sequential heel nailing machine, 14 nails plus 2 screws with cylinders strengthened for interventions on harder materials. Lasting-jack with quick change and pneumatic fastening, automatic unlocking of nails container if jammed.	1	
5.08	Table to check sole and possible final retouches: sole, heel and sole bottom. Device to collect accessories and materials located on one side	1	
5.09	Machine for the treatment with waxes, sole side and bottom polishing with 2 working stations, 2 whirlwinds with cloth sacks. Speed converter	1	
5.10	Upper checking table with final retouching, removal of glue wastes, projecting yarns' burn; retouching of lining ironing with small irons, other	1 1	
5.11	Machine for the treatment of waxes (carnauba) and upper polishing with suitable brushes and plugs. 2 working stations, 2 whirlwinds with cloth sacks. Speed converter	1	
5.12	Pneumatic stamping machine to print trade marks on cleaning heel seat lining. Electronic timer and thermo-regulator	1	
5.13	Table with glue spreading on insole and its application. Use of water glues and speed converter	1 1	
5.14	Machine for the definitive moulding of quarters with hot reactivation and immediate cold stabilization on suitable parts of lasts with the due configuration. Moulding pads	1	
5.15	Brushing machine for the last intervention. 1 working station, 1 whirlwind and cloth sack	1	

5.16	Table to apply laces or possible accessories, final quality check with verification of the correct right and left coupling. Packaging	1	
5.17	Automatic conveyor of semifinished products during bottom lasting-manufacturing and finishing with two lines and predetermined stop. 100 trolleys for 2 pairs, length 25m	1	

500-ADVANCED Cutting dept.



Area 220 sqm

Scale 1:100

DRAWING N°
Layout B-2a

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27029 Vigevano (PV) Italia
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Cutting department
Module 500 pairs Advanced

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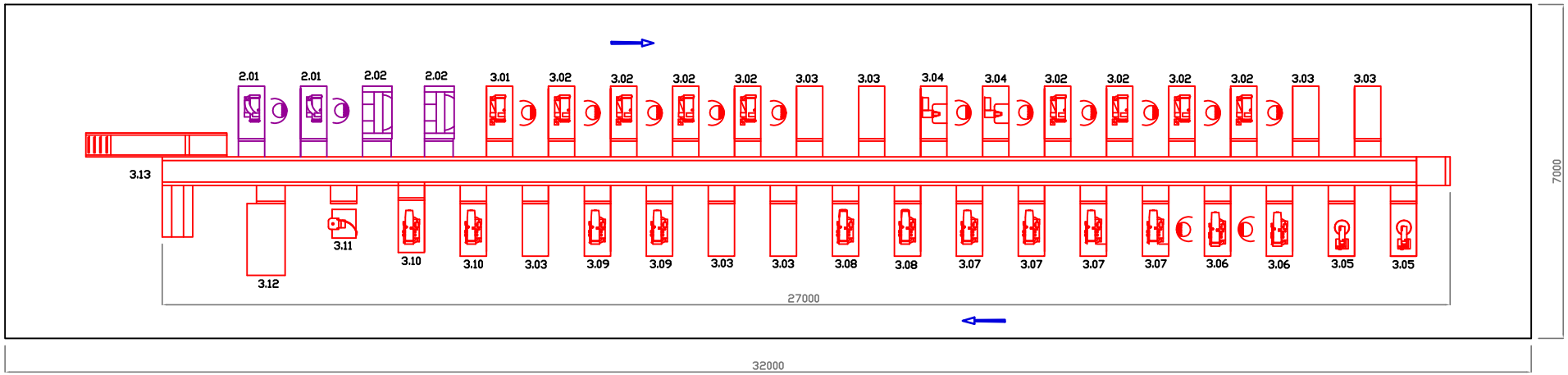
20.DEC.2010	AF	ATR	1 : 100

500-ADVANCED Closing dept.

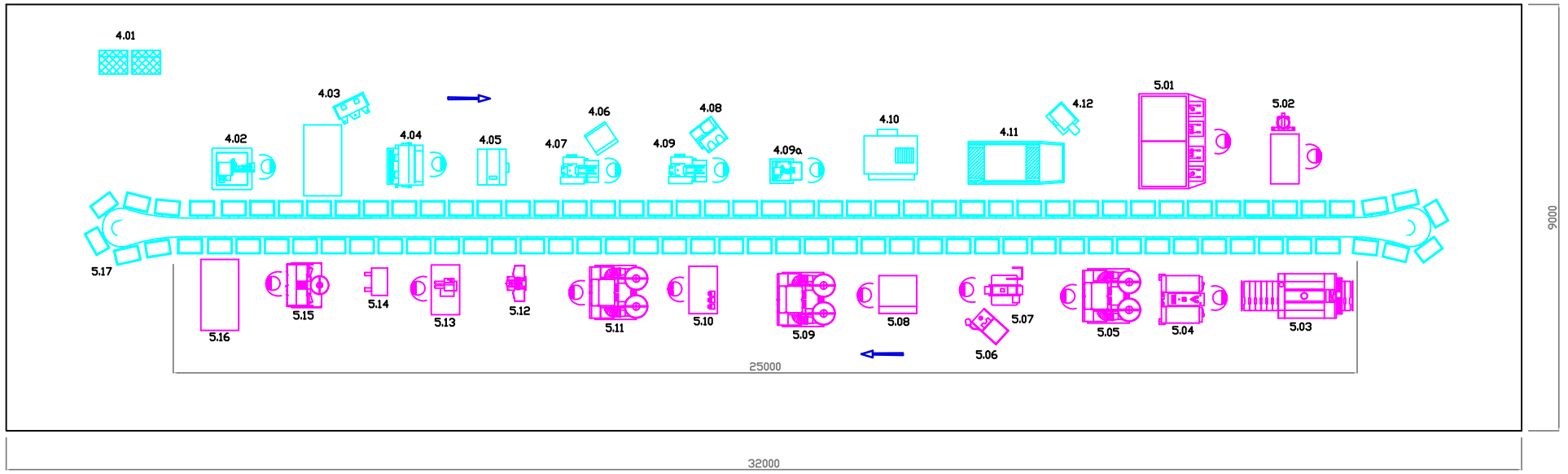


Area 224 sqm

Scale 1:130

DRAWING N° Layout B-2b	Closing department Module 500 pairs Advanced			
PISIE Via Matteotti, 4/a 27029 Vigevano (PV) Italia Tel. +39.0381.70137	DATE 20.DEC.2010	DRAWER AF	VERIF. ATR	SCALE 1 : 130

500-ADVANCED Lasting-Finishing dept.



Area 224 sqm

Scale 1:130

DRAWING N° Layout B-2c	Lasting-Finishing department Module 500 pairs Advanced			
PISIE Via Matteotti, 4/a 27029 Vigevano (PV) Italia Tel. +39.0381.70137	DATE 20.DEC.2010	DRAWER AF	VERIF. ATR	SCALE 1 : 130

4. Lay-out L-1: Physical-mechanical and fastness tests Lab

Department	Physical-mechanical and fastness tests lab	
	Room temperature	
Code	**Machine-Equipment**	**Quantity**
6.01	*Swing arm clicking with plate 600x300*	1
6.02	Stainless steel sink 1200 with one basin	1
6.03	*Kulbeka device* Table 1200	3 1
6.04	*Xenotest device*	1
6.05	*Bally flexometer*	1
6.06	Walkmeter	1
6.07	*Heel break at repeated impact* Table 900	1 1
6.08	*Abrasion test for rubber, polyurethane materials* Table 1500	1 1
6.09	*Dry and wet rubbing apparatus, Veslic* Table 1200	1 1
6.10	*Lace abrasion* Table 1500	1 1
6.11	*Heat setter*	1
6.12	*Slip resistance*	1
6.13	*Impact resistance*	1
6.14	Table 1800 with deepfreeze 550	1
	Controlled temperature and humidity	
6.15	*Thickness digital gauge* Table 900	1 1
6.16	*Dynamometer and personal computer* Table 1800	1 1
6.17	*Digital lastometer* Table 900	1 1
6.18	*Sole flexometer - Bennewart* Table 1200	1 1
6.19	*Sole-upper adhesion* Table 1800	1 1
6.20	*Leather sole impermeability*	1
6.21	Personal computer station Table 1500	1 1
6.22	Table 1500 for different services	1
6.23	*Dynamic impermeability electronic H_2O* Table 1800	1 1
6.24	*Steam permeability apparatus*	1
6.25	*Leather insulating power determination* Table 900	1 1
6.26	*Technical scale* Table 1200	1 1
6.27	*Analytical scale*	1
6.28	Cabinet 1200	1
6.29	Stainless steel sink 600	1

Lab equipment listed in the previous paragraph is completed by the instruments and glasses described in the following table.

Description	Quantity
Extractor Soxhlet capacity 150 ml	3
Nitrogen distiller according to Keldahl method with digester	3
Calibrated matrass 50 ml	10
Calibrated matrass 100 ml	10
Calibrated matrass 250 ml	10
Calibrated matrass 500 ml	6
Calibrated matrass 1000 ml	3
Graduated pipette 1 ml	10
Graduated pipette 2 ml	20
Graduated pipette 5 ml	10
Graduated pipette 10 ml	10
Graduated pipette 25 ml	20
Graduated pipette 50 ml	10
Mohr burette Teflon cock 10 ml	2
Mohr burette Teflon cock 25 ml	2
Mohr burette Teflon cock 50 ml	2
Support system for burettes	3
Graduated glass short shape 50 ml	10
Graduated glass short shape 100 ml	10
Graduated glass short shape 250 ml	10
Graduated glass short shape 600 ml	10
Graduated glass short shape 1000 ml	5
Conical matrass Erlenmeyer narrow opening 100 ml	10
Conical matrass Erlenmeyer narrow opening 250 ml	10
Conical matrass Erlenmeyer narrow opening 500 ml	10
Graduated cylinder high shape 50 ml	5
Graduated cylinder high shape 100 ml	5
Graduated cylinder high shape 250 ml	5
Graduated cylinder high shape 500 ml	5
Graduated cylinder high shape 1000 ml	5
Crucible short shape 50 x 32 mm with top	5
Petri glass capsule 100 x 20 mm	30
Changeable height Omeis support	6
Spatula with stainless steel spoon	15
Short stem glass funnel diameter 100 mm	6
Silica gel dryer diameter 250 mm and porcelain plate	3
Magnetic stirrer with single station heat setter	10

APPENDIX 2: Machines and equipments of the productive departments and lab

1. Lay-out A-1: Module 100 pairs – Traditional samples/small series

Upper cutting preparation, execution

1.01 Chest of drawers

Shaped as a wardrobe, it is suitable for a tidy collection of pattern-holder envelopes or their fibreboard series.

Structural characteristics:

- 60 iron drawers, dimensions: 300x400x50 h mm;
- bulk dimensions: 1000x430x1100 mm;
- net weight: 96 kg.

1.02 Table

It's a table whose dimensions are suited to offer an easy support for the choice and preparation of leathers or imitation leathers required for each single batch of shoes to be launched into production.

Structural characteristics:

- bulk dimensions: 2200x1200x1000 h mm;
- net weight: 92 kg.

1.03 Press – Clicking press

Oleo-dynamic rotary arm clicking press planned to cut the miniseries and in particular the single pieces with structures difficult to be cut for manual interventions or for composite punching exigencies like toe grain and others.

Structural and technical characteristics:

- working area: 600x300 mm;
- arm width: 300 mm;
- maximum stroke: 900 mm;
- bulk dimensions: 600x690x1330 h mm;
- net weight with oil: 430 kg;
- maximum power: 78 kN;
- installed power: 0.75 Kw.

Main characteristics:

- cut end stroke with automatic positioning to use multi-height cutting dies;
- power selector with three push buttons and double potentiometer to facilitate a precise cut;
- synchro-temporized control push buttons to comply with international safety rules;

1.04 Table

It's a kind of table studied for people using a manual knife to cut leather or imitation leather parts which compose the different pieces of a footwear model.

Structural characteristics:

- support surfaces for cut parts and materials:
- central drawers to collect supplied equipments;
- bulk dimensions: 1200÷1500x800x1080 h mm;
- net weight: 40 kg.

Accessories:

- plastic block for cut material;
- bulk dimensions: 1000x500/630x5 h mm;
- net weight: 8.0 kg.

1.05 Table

This table is only aimed at temporally collecting cut upper parts when the batch concerns a significant number of pairs.

Structural characteristics:

- bulk dimensions: 1100x550x800 h mm;
- net weight: 25 kg.

1.06 Trolley

To carry the materials used to manufacture upper, a suitable kind of trolley trestle has been designed, smoothing the right tentering in particular of leathers.

Structural characteristics:

- bulk dimensions: 1000x450x1200 h mm;
- net weight: 13, 00 Kg

1.07 Basket

Light plastic container to collect wastes generated during cutting.

Structural characteristics:

- bulk dimensions: 500x500x400 h mm;
- net weight: 2,2 – 2,4 Kg.

1.08 Splitting machine

The mechanic-electric version is the basic machine planned to carry out thickness evening operations for all cut parts which compose upper and which present differences of this kind.

The presence of such machines in the footwear company is indispensable if company's policy is aimed at improving the quality of its product.

Constructive techniques:

- useful working area: 520 mm;
- automatisms for wear recovery and blade positioning;
- wastes' aspirator;
- trimming dusts' aspirators;
- high-life sharpened grinding wheels;
- four-speed carriage.

Technical characteristics:

- bulk dimensions: 1700x1080x1250 h mm;
- number of engines: 4;
- installed power: 3 Kw;
- net weight: 750 Kg.

Accessories:

- high-precision rotary pin for the manufacturing of non-smoothing materials (i.e. varnished leathers, types of synthetic materials or thick leathers).

1.09 Table

It is used to carry out the marking off of possible routes in subsequent sewing operations or points of reference for the correct alignment or overlapping of parts during upper assembly or to execute holes of parts during upper assembly.

Structural characteristics:

- bulk dimensions: 1500x800x900 h mm;
- net weight: 45 Kg.

1.10 Numbering machine

The machine, mounted on a mainstay, allows to correctly and clearly carry out the numbering of linings and upper right side parts, warranting their traceability either along the productive cycle or during selling by the shop.

Constructive characteristics:

- pneumatic feed of the printing device;
- modular discs' numerator;
- adjustable working area: ~120 x ~180 mm;
- printed tape receptacle.

Technical characteristics:

- bulk dimensions: 550x700x1700 mm;
- working power: 1700/1900 N at 6 bar;
- air consumption: 2 Nl/cycle;
- installed power: 0,25 Kw;
- net weight: 65 Kg.

Control panel:

- general switch;
- adjustable timer from 0 to 150°C;
- pressure regulator from 0 to 6 bar.

Designed in keeping with international safety rules.

1.11 Pre-moulding machine

The necessity of having a mechanized support to carry out the pre-moulding of vamp or of upper forepart for traditional footwear or low boot or rather boot became critical in the years in which, to meet fashion requirements, the problem of single pieces in footwear forepart, in particular boot, was to be faced.

Footwear machines' manufacturers solved the problem designing and realizing an apparatus able to premould the structure of the fibres of the material to be manufactured with a combination of pressure and heat.
The result is to permanently attain the same line which characterizes the neck of last's fore frame where upper is lasted once manufactured.

Construction characteristics:

- easy replacement of plates and resistances;
- side plates adjustable on three axes;
- plates' pressure adjustable according to the requirements of upper materials;
- possibility of coupling a humidifying device;
- steel or aluminium blades;
- more versions are available according to the type of upper: base, for low boots, for boot with high single piece boot leg.

Control panel:

- total electronic control of machine's cycle;
- independent temperatures with digital control.

Designed in keeping with international safety rules.

1.12 Trolley

For the carriage of cut material, according to the parts provided for each single models, a type of trolley, in this case supplied with two plasticised net baskets is used.

Structural characteristics:

- trolley bulk dimensions: ~780x420x900 h mm;
- basket bulk dimensions: ~710x400x120 h mm;
- net weight: ~10 Kg.

Upper preparation and assembly

2.01 Skiving machine

This machine is used to carry out chamfering operations along upper components edge parts reducing thickness, according to pattern-maker' manufacturing modalities and exigencies. Skiving operations are aimed at facilitating operations like folding and overlapping seams of parts to be sewed together, creating the conditions to improve upper look once it has been completed and at the same time to offer a better comfort during walking.
The parameters which characterize the execution of skiving concern: thickness, inclination, width and feed speed.

Constructive characteristics:

- clutch engine for conveyance speed adjustment;
- blade-holder shaft mounted on pads and supplied with special anti-dust protections;
- conveyance roller control gears, oil bath;
- the unavoidable wear of presser foot is counterbalanced with normal interventions.

Technical characteristics:

- bulk dimensions: ~100x550x1180 h mm;
- installed power: ~0,5 Kw, three-phase electric supply;
- net weight: ~100 Kg;

- not equipped with waste aspirator.

Accessories:

- it is possible to have at disposal gears to allow different working speeds;
- it is possible to have at disposal an equipment to easily carry out 45° skiving for moccasin-type uppers.

2.02 Coupling machine

Machine studied for coupling interventions of upper parts and reinforcement materials supplied with different structural characteristics aimed at strengthening the tightness of these parts, giving them the required contents as well as a good look.

The reinforcing products have been previously treated with thermo-adhesives so that, using the right combination of temperature, pressure and time of intervention, they warrant definitive qualitative levels in keeping with precise specifications.

Construction and structural characteristics:

- revolving plate configuration;
- suitable pressing power;
- pressing parallel to the revolving plate, self-adjustable and fit for materials to be coupled;
- easy and immediate replacement of the Teflon coating;
- pressing plate cleaning without dismantling parts.

Technical characteristics:

- bulk dimensions: ~950÷1000x800÷950x1500÷1700 h mm;
- installed power: ~2,0 Kw; supply 220 V/50 Hz;
- compressed air consumption: 4Nl/cycle at 3 bar;
- net weight: ~200 Kg.

Control panel:

- start-stop switch;
- temperature electronic control.

Designed in keeping with international safety rules.

2.03 Punching – scalloping machine

Upper decorations with punch and scalloping along the edges characterize types of operations aimed at this purpose.
A wide range of punches may be used by the stylist when preparing collections: there are many types different for shape, dimension and ways of combination carried out in reoccurrence.
Such interventions are achieved by means of devices quite similar to flat-bed sewing machines supplied with single cutting die instead of needle and stepless fed.
The sequence of punches is carried out stepless, with specific cadences determined, whose distance is adjustable up to 15 and more millimetres.
The ornamental punching may include reasons obtained making recourse to the presence of more types of cutting dies included in suitable small blocks.
The scalloping is achieved in the same way using an small cutting die with a “v” open or of other types, engraving with subsequent releases the starting part along the edge.

Constructive characteristics:

- upper feeding: with jaw’s rectilinear stroke;
- pitch adjustment: with slider divided into millimetres;

- pitch: 1,5÷16 mm;
- clutch engine.

Technical characteristics:

- bulk dimensions with desk: ~1100x550x1080 h mm;
- installed power: ~0,40 Kw;
- net weight: ~70÷80 Kg;
- speed with small blocks: ~450 rounds/1';
- speed with one needle cutting die: ~650 rounds/1'.

Control panel:

- start-stop switches;

2.04 Zig-zag sewing machine

This kind of equipment belongs to the family of the so called "flat-bed" machines; they differ from the latter ones because they carry out flat seams called "zip fastener", joining two edges of material with sharp cut (one continuous to the other one) and zig-zag sewed with knotted stitch.
With this kind of seam, material has no added thickness; this causes a weak tightness with the consequence that every intervention of this kind must subsequently be duly stiffened with the application of suitable reinforcements.
This kind of machines, whose seam is formed by a succession of stitches set alternatively on the right and on the left of seams ideal median line, are characterized by a high reliability with different speeds, over the 400 stitches per minute, also with thin yarns.

Constructive characteristics:

- flat-bed configuration;
- needle system 100÷130 Nm;
- zig-zag stitch type 304 knotted with width up to 10 mm;
- jaw feed;
- increased crochet;
- reverse gear with manual lever;
- stitch length up to 5 mm;
- presser foot height up to 7 mm;
- three-phase clutch gear.

Technical characteristics:

- bulk dimensions: 1100x550x1080 h mm;
- installed power: ~0,37 Kw (feeding 380 V/50 Hz)
- net weight: ~100÷120 Kg.

Electric panel:

- start-stop switch.

2.05 Flat-bed sewing machine

It belongs to a family of sewing machines used in different fields; it is an easy, basic and manual equipment. Operator personally manages, against an acquired skill, seam feed, work execution speed, in-between stops necessary to reposition the semifinished.

Constructive characteristics:

- flat-bed machine;
- 1 needle knotted stitch;
- needle and measurements system: 134 (DBx1), maximum Nr 140;
- crochet on horizontal shaft;
- fixed dosage and lubrication per capillarity;
- jaw feed;
- needle bar stroke: 30÷36 mm.

Technical characteristics with table:

- stitch maximum length: 6 mm;
- seam maximum thickness: 13 mm (if fabric);
- bulk dimensions: 1050x550x1112 h mm;
- installed power: 0,40 Kw (feeding 230 V/50÷60 Hz);
- net weight: ~50 Kg m/c + 24÷26 Kg bench.

Electric panel:

- start-stop switch.

Designed in keeping with international safety rules.

2.06 Table

Its function is to let operator support people working on sewing machines, carrying out the interventions required in the intermediate phases like yarn adjustment, glue spreading, edge folding before proceeding to subsequent assembling phases along the route provided by footwear model.

Structural characteristics:

- bulk dimensions: ~1100x550x800 h mm;
- net weight: 24÷26 Kg.

2.07 Arm sewing machine

This kind of sewing machine is aimed at solving specific footwear manufacturer's exigencies, in particular regarding quality, to improve product as regards look combined with a lower waste of energies and time.
One of the most interesting services and performance provided by this kind of machine is the application of edges in the different configurations and types of materials adopted.
As a binding machine, this machine allows edges application getting their accurate and precise collocation along the whole extension of open or closed upper necks or in presence of leather or cloth slippers.

Constructive characteristics:

- one-needle version;
- triple feeding: jaw, needle, alternate presser foot;
- stitch length up to 6 mm;
- small vertical crochet;
- manual presser foot and knotting;
- useable yarn max 15/3;
- three-phase clutch engine, feeding 380V/50 Hz.

Technical characteristics:

- support table dimensions: 600x700 mm;
- table total extension: 1300 mm with 1200 mm height;
- installed power: 0,50 Kw;
- net weight: ~150 Kg.

Electric panel:

- start-stop switch.

2.08 Post-bed sewing machine

Machine's configuration and structure allow easy sewing interventions, in particular when the semifinished takes three-dimensional configurations which require freedom of movement in the space.
The greatest benefits supplied by this kind of equipment are achieved during upper top stitching and closing, when operator carries out interventions avoiding any lining's getting high manual skill realizations.

Constructive characteristics:

- post-bed sewing machine;
- needle knotted stitch;
- revolving jaw feeding with roller presser foot and needle;
- rounded needle plate;
- automatic hook lubrication;
- spool yarn monitoring with stitch count;
- column height: 180 mm.

Technical characteristics:

- sewing maximum speed 3000 stitches / 1';
- needle system: 134;
- bulk dimensions: 1050x550x1125 h mm;
- installed power: ~0,55 Kw;
- net weight: ~47 Kg m/c + ~15 Kg bench.

2.09 Table with small press

In this situation, operator is kept busy in the application of eyelets, rivets or other accessories and uses a small press manually activated, having at disposal a kit of mini tools, each one suitable for a specific trimming.

Table's constructive characteristics:

- bulk dimensions: ~720x500x900 h mm;
- spare parts' drawer;
- net weight: 10,00 Kg.

Small press' characteristic:

- bulk dimensions: 260x80x290
- net weight: ~6,00÷6,5 Kg.

2.10 Table

The person in charge of this station carries out small retouching interventions, sometimes necessary after an inspection.

Constructive characteristics:

- bulk dimensions: 1500x800x900 h mm;
- net weight: 45 Kg.

2.11 Conveyance trolleys for semifinished products

(see item 1.12)

2.12 Stool

Adjustable bench supplied with padded seat and iron back.

Constructive characteristics:

- bulk dimensions: ~460x460x800/1500 h mm;
- net weight: 6,7 Kg.

Lasting

3.01 Last holder

Metallic frame studied to collect in an orderly way small series of lasts located in the lasting area, as closer as possible to the equipments used for such function.
It is made of three superimposed containers in metallic net, each one supplied with partition for a further subdivision of volume, offering a more accurate and distinct collection fo the different types of last sizes.

Constructive characteristics:

- bulk dimensions: ~600x500x1680÷1700 h mm;
- net weight: 30/32 Kg;
- container for detection label on each single part of subdivision available.

3.02 Table

It characterizes the station where insole's provisory application and stiffener's insertion by means of simple staples take place. Spreading some glue on upper vamp tip, the reinforcing toe is positioned in this area, trimmed with care to get, by means of the manual toe laster used immediately after, a profile with an excellent edge.

Constructive characteristics:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: 45 Kg.

Air gun

Technical characteristics:

- air consumption: 0m2 Nl/cycle at 6 bar;
- net weight: 0,95 Kg.

3.03 Steaming machine

It is an easy but efficient apparatus used to prepare upper before the beginning of lasting. The humidification achieved through steam spreads to the whole upper, also preparing the reinforcements like toe and stiffener to suitably adhere to last, modelling upon it in the respective areas and lending an harmonic line to the semifinished, once lasting has been completed.

Constructive characteristics:

- stainless steel humidification-vaporization chamber, mounted on column;

- wheel bedplate for an easy displacement and replacing;
- height adjustment of the chamber with periscope system.

Technical characteristics:

- bulk dimensions: 520x500x1050÷1200 h mm;
- installed power: 1,8-2,0 Kw – feeding 200V/50-60 Hz;
- net weight: 48÷50 Kg.

Control panel

- start-stop switches.

With regards to safety rules, in keeping with EC standards.

3.04/3.04 S Lasting Jack (low shoe, boot)

It's used by people in charge of lasting. Once last compass is located at metal lasting-jack's superior extremity, the operator can easily intervene in order to tack upper on last, blocking it with some provisory nails. In this moment, glue is spread along insole, close to edge last.

Constructive characteristics:

- mounting column with metal square base;
- support plane for tools and semifinished located at column superior extremity;
- metal lasting-jack unit to support last.

Technical characteristics:

- bulk dimension: ~600x360x1020÷1050 h mm;
- net weight: 43-48 Kg.

3.05 – 3.06 Toe laster – Seat laster

This kind of machine for the lasting of toe and of part of sole is the first mechanization version introduced on market to facilitate workers and improve quality once the operation has been accomplished.
Machine working is completely manual and operator's skill is acquired in short times getting, from flexibility point of view, an excellent manufacture even with last supplied with the most different toes: square, rounded, tapering, very tapering.
There are no use limits regarding material, in particular when they have very delicate colour or structure. Nowadays their use is verifiable by craftsmen producing footwear collections for the most renowned trade marks.
The passage from last models with rounded toes to tapering ones requires the simple replacement of the two closing plates, whose realization is rather simple and at a very limited cost.
The transformation from toe laster to seat laster is very quick and only requires the simple shifting of already installed parts, replacing the two plates provided for toe lasting with the two ones suitable for seat.
It is to be noticed that, usually, a pair of man's shoes, a pair of lady's shoes and a pair of kid's shoes are enough.
Machine's maintenance is almost inexistent, excluding the usual cleaning or a few more.

Constructive characteristics:

- basic structure in cast iron fusion;
- manual adjustments with simple interventions carried out by hand or by foot.

Technical characteristics:

bulk dimensions: ~650x950x1400÷1450 h mm;

net weight: 120-125 Kg.

Accessories:

- series of sheet slices with wooden handle and similar to the last toe used, heated and pressed on lasted border to get an excellent sharp edge.
- plates to close toe;
- plates to close seat.

3.13 Small bench

Footwear craftsmen used to employ this small bench to support and arrange the manual tools used during footwear lasting.
In this case, it is used to last sandals, unsuitable for machine's lasing because of the particular configuration of this kind of uppers.
It is completely made of metal.

Technical characteristics:

- bulk dimensions: ~650x650x650 h mm;
- net weight: ~12-14 Kg.

Accessories:

- silenced pneumatic riveting hammer with steel head ∅ 40;
- net weight: 1,10 Kg;
- air consumption: 180 Nl/1' a 5 bar.

3.11 Chairs for the small bench

They normally are wooden articles with bearing frame and straw seats, whose dimensions are suitable to the ones listed for the table – small bench.

3.12 Bench with thermo-ironing machine

The table is used to check lasted shoe and to assess the necessity of some further manual intervention with hammer or with some other riveting tool to complete and improve as needed the semifinished in this phase of the productive cycle.

The presence of a hot air and steam ironing machine with overheated and wet air allows to recreate an effective air-conditioning near and upon leather to be processed, favouring interventions with almost satisfactory effects.

Structural characteristics of the table:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: ~45/49 Kg.

Technical characteristics of the thermo-ironing machine:

- bulk dimensions: ~560x450x520 h mm;
- installed power: ~2,20 Kw;
- net weight: 32-34 Kg.

3.13 Trolleys

In the lasting area, the handling of the semifinished and of the different components is carried out by means of trolleys whose shape satisfies the exigencies of these phases of product's transformation.

Constructive characteristics:

- more shelves to support semifinished products;
- side raised back on shelves to avoid possible shoe falls;
- bulk dimensions: ~1050x400x1150/1170 h mm;
- net weight: 18-20 Kg.

Bottom Manufacturing - Finishing

4.01 Trimming machine – sandpapering machine

Upper edge lasted on insole must be treated through machines supplied with tools able to operate on two kinds of interventions.
The first one concerns the removal on toe and heel-seat of possible upper materials generating wrinkles in this areas, to be removed through sandpapering.
The second one is aimed at removing along the whole extension of the lasted shoe leather superficial finishing carried out by the tannery and the formation of micro-tracks to facilitate and effective penetration of glue, placed immediately after this station.
This result is achieved exposing the lasted shoe to treatments attainable with trimming machines.
Proper equipments present and lasted on sandpapering-trimming machines also allow the preparation of soles, before the suitable adhesive is placed on them.

Constructive characteristics:

- main engine with double shaft;
- receptacle with built-in whirl;
- aspirator engine;
- two working station.

Technical characteristics:

- bulk dimensions: ~1000x930x1480-1520 h mm; with mounted sack 2600/2620 mm;
- installed power: 2,4-2,6 Kw;
- net weight: 115-120 Kg.

Control panel:

- start-stop switch;
- two-speed selection switch (1400 and 2800 rounds).

Accessories:

- plugs with different grain sandpapers.

4.02 Table

Its use concerns the application of glues on previously sand-papered and trimmed lasted shoe and sole.

Structural characteristics:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: 45 Kg;
- support plane covered with Formica.

Accessories:

- plastic containers for glue;
- manual brushes.

4.03 Desk reactivating device

Before coupling already glued lasted shoe and sole, it is necessary to reactivate glue itself, that is to say to bring it to the condition of maximum tackiness.
This result is achieved by placing the two parts to be joined in an infrared beams heat setter, opportunely adjusting time and temperature to realize the best manufacturing.

Constructive characteristics:

- quartz lamps, 1000 Watt;
- time lamp ignition adjustment device;
- suitable supports adjustable in height for soles and shoes.

Technical characteristics:

- bulk dimensions: ~600x375x875÷900 h mm;
- absorbed power: 3,10-3,30 Kw (feeding 220V/50 Hz monophase);
- net weight: 30-33 Kg.

Support plane

Its use is to supply a suitable and functional placing of glue reactivating device and a suitable surface for the right handling of semifinished products.

Constructive characteristics:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: 45 Kg.

4.04 Sole lasting with press

The machine used to carry out the definitive application of sole to lasted shoe is a two-station press; the first one, with laminar sectors, reproduces in negative sole's rounded surface, particularly suitable for soles with heel over the 30 mm, indispensable for lady's shoes. The second one supplied with water cushion for man's shoes in general.

Constructive characteristics:

- 2 adjustable blocking arms to press last toe and edge;
- heel support adjustment device;
- driving gear hydraulic technology.

Technical characteristics:

- bulk dimensions: ~800x800x2250/2260 h mm;
- installed power: 1,80 – 2,00 Kw (feeding 220V/50Hz);
- net weight: 480÷500 Kg.

4.05 Brushing – sizing machine

This equipment starts footwear finishing phase. Upper leather finishing requires more treatments with chemical products according to grain characteristics and aesthetic exigencies to be satisfied.
During lasting phases upper undergoes some stresses which often cause a deep opening of grain, generating a bad look.
It is very important that leather, during final size's application, is uniform and regular to allow the correct adhesion of applied products as well as their homogeneous distribution all over the surface.
The brushing – sizing machine allows the attainment of such result with the application of a chemical product's film.

Constructive characteristics:

- main engine with double shift;
- aspirator engine;
- receptacle with built-in whirl;
- two working stations.

Technical characteristics:

- bulk dimensions: ~1000x1050x1530÷1550 h mm (with mounted sack 2600/2620 mm);
- installed power: ~2,4 Kw;
- main engine: 500 o 1400 giri/1';
- aspirator engine: 1400 o 2800 giri/1';
- net weight: 118 – 122 Kg.

Control panel:

- start-stop switch;
- two-speed selection switch 900/1400 rounds;
- two-speed selection switch 1400/2800 rounds.

Accessories:

- kit of brushes according to the leathers to be treated.

4.06 Last puller

Last pulling occurs with a simple system based on a lasting-jack. Last thimble is inserted on the peg located on lasting-jack's superior extremity. Afterwards, a pressure is exerted by hand on the back of the shoe pulling it towards the top.
It is necessary to make sure that the laced shoes are unfastened before proceeding with the extraction; the same with buckle straps.

Constructive characteristics:

- upright column, with square base, made of metal;
- lasting-jack unit and last support peg made of metal.

Technical characteristics:

- bulk dimensions: ~600x360x1020÷1050 h mm;
- net weight: 43÷48 Kg.

4.07 Heel nailing machine

The machine designed to carry out heel nailing is used for all shoes whose bottom has separated heel and sole and with the subsequent exigency of their safe fastening.
The effectiveness of this operation grows at heel surface decrease as well as at heel height increase.

The heel nailing machine is essentially a press; the most used version is suitable for interventions either on standard shoes or on boots.

Constructive characteristics:

- maximum opening per heel heigth 160 mm;
- useful lasting-jack height 460 mm;
- manual and rapid heel fastening;
- pneumatic heel nailing.

Technical characteristics:

- bulk dimensions: ~420x450x1780 mm;
- air consumption at 6 bar:12-15 Nl/1';
- net weight: 85÷90 Kg.

4.08 Table

It is the working station to carry out accurate interventions on sole and heel edging, completing their finishing.

Constructive characteristics:

- all metal frame;
- open drawer at semifinished support plane height to collect and deposit specific products.

Technical characteristics:

- bulk dimensions: ~720x500x900/950 h mm;
- net weight: 10-11 Kg.

4.09 Stamping machine

This equipment of the finishing department is used for the hot dry stamping of drawings and trade marks or by means of coloured tapes and cliché on the cleaning heel seat lining or on other parts.

The machine must be properly adjusted, providing stamping times and cliché temperatures with the values required by board shank composition materials, in order to obtain very clear reproductions, with a very precise outline.

Constructive characteristics:

- mechanical feeding of the stamping tape;
- working area ~120x180 mm;
- support lasting-jack with rectangular base.

Technical characteristics:

- bulk dimensions: ~550x700x1650÷1700 h mm;
- working power at 6 bar: 2300 N;
- working pressure: 1 at 6 bar;
- air consumption: 1,0 a 1,4 Nl/cycle;
- electric power: 0,25 Kw, feeding 230 V/50÷60 Hz;
- net weight: 60-62 Kg.

Control panel:

- start-stop switch;

- timer with thermostat: 0÷150 °C;
- timer with electronic thermo-regulator.

4.10 Brushing – Polishing machine

The interventions occurring in the phase of last finishing concern the most superficial layer; they are often uncoloured and are mixed with touch auxiliaries. They are wax oils solutions or emulsions, soaps, silicone oils aimed at providing materials with a particularly silky and slippery touch.
Such equipment is the brushing-polishing machine.

Constructive characteristics:

- whirlwind dust collector with built-in sack;
- two-pole aspirator engine;
- double-shift main engine;
- one working station.

Technical characteristics:

- bulk dimensions; ~740x1120x2560÷2580 h mm;
- installed power: 2,7÷2,9 Kw;
- main engine; 900 o 1400 rounds/1';
- net weight: 162-165 Kg.

Control panel:

- start-stop switch;
- two-speed selection switch 900/1400 rounds for the main engine.

Accessories:

- kit of brushes with different shapes.

4.11 Table

This table is aimed at letting operator carry out a series of operations like: the application of laces if provided by the model, of different ornamental accessories, of straps and buckles, of glue spreading on the cleaning heel seat linings as well as their placing in the right position.

Structural characteristics:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: 45÷48 Kg.

4.12 Table

It characterizes the station occupied by people in charge of the final check and last retouches with hot flat irons to eliminate small wrinkles on lining or right side.
Some tissue paper is located to contain footwear sides, in particular lady's shoes, as well as a stick to stretch footwear and to secure its shape.

This table is used to pack shoes wrapped up in restrain tissue papers.

Constructive characteristics:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: 45÷48 Kg.

4. 14 Trolleys

Semifinished handling in the area destined to finishing is carried out using trolleys, whose shape is has been described for the lasting area.
The difference concerns the presence of cloth bands stuffed with foam rubber, covering their metal shelves.

Constructive characteristics:

- more lined shelves to place shoes;
- side/perimetric raised backs of shelves for a safe restrain;
- bulk dimensions: ~1050x400x1150÷1170 h mm;
- net weight: 18÷20 Kg.

2. Lay-out B-2: Module 500 pairs - Advanced

Upper preparation, cutting

1.01 Chest of drawers

Shaped as a wardrobe, it is suitable for a tidy collection of pattern-holder envelopes and/or their fibreboard series.

Structural characteristics:

- 30 drawers, dimensions: 300x400x100 h mm;
- bulk dimensions: ~1000x420x1100 h mm;
- net weight: 52-54 Kg.

1.02 Table

This table is suitable to offer an easy support for the choice and preparation of leathers or imitation leathers required for each single batch of shoes to be launched into production.

Structural characteristics:

- bulk dimensions: 2200x1200x1000 h mm;
- net weight: 92 kg.

1.03 Cabinet

It is aimed at providing a venue easy to be reached and suitable to collect significant materials and objects.

Structural characteristics:

- 4 changeable shelves;
- bulk dimensions: ~1000x450x1800 h mm;
- net weight: 55÷60 Kg.

1.04 Computerized cutting station

Computerized NC cutting table with high frequency vibrating blade technology. Suitable for the cutting of small and middle productions, it is particularly significant; it is easy to use and has low operative costs.
Such equipment offers other advantages like: acquisition of flexible productivity, reduction of times necessary for products' input on the market, elimination of cutting dies with related fabrication costs and logistic management for their handling and storage.

Constructive characteristics:

- two independent working stations: contemporary execution of placing and cutting operations;
- high luminosity projector for the best visibility of templates reproduced on materials to be cut.
- tools-holder head with quick change of blades, perforators, puncher and pen;
- mandrel fit for demanding materials' cutting: leather for soles up to 7 mm.

Technical characteristics:

- bulk dimensions: ~4370÷4390x1780÷1800x1980÷2020 h mm;
- useful working area ~3000x1000 mm;

- number of tools per head: 5;
- maximum cutting speed: ~50 m/minute;
- acceleration: 1g;
- punching frequency: 3,2/second;
- installed power (pump): 3-12 Kw;
- pneumatic circuit: 7 bar;
- air consumption: ~100Nl/1';
- projector luminosity: ~1500 lumen ANSI.

The whole machine is in keeping with EC safety rules.

1.05 Table

It's a kind of table studied for people using a manual knife to cut leather or imitation leather parts composing the different pieces of a footwear model.

Structural characteristics:

- support planes, cut pieces and materials;
- central drawers to collect tools;
- bulk dimensions: 1200÷1500x800x1080 h mm;
- net weight: 40 Kg.

Accessories:

- plastic block to lean the material to be cut: 1000x500/630x 5 h mm
- net weight: 8,0 Kg.

1.06 Table

This table is only aimed at temporally collecting cut upper parts when the batch concerns a significant number of pairs.

Structural characteristics:

- bulk dimensions: ~1800x550x800 h mm;
- net weight: 25 Kg.

1.07 Receptacle

In order to keep the working station provided for the cutting of upper components tidy, it is opportune to collect wastes as soon as they are produced and put them in the suitable receptacle.

Constructive characteristics:

- bulk dimensions: ~600x600x500 h m;
- net weight: 2,2÷2,4 Kg.

1.08 Trolley

To carry the materials used to manufacture upper, a suitable kind of trolley trestle has been designed, smoothing the right tentering in particular of leathers.

Structural characteristics:

- bulk dimensions: 1000x450x1200 h mm;
- net weight: ~13,00 Kg

1.09 Numbering machine

The machine, mounted on a table, allows to correctly and clearly carry out the numbering of linings and upper right side parts, warranting their traceability either along the productive cycle or during selling by the shop.

Constructive characteristics:

- pneumatic feed of the printing device, inclined of 15° to measure consumption, adjustable from 0 to 150 mm;
- modular discs' numerator up and over 20;
- working area dimensions, adjustable in height: ~120 x ~180 mm;
- printed tape receptacle.

Technical characteristics:

- bulk dimensions: ~1100x800x1550/1560 h mm;
- working power: 2300 N a 6 bar;
- air consumption: 5÷7 Nl/cycle;
- installed power: 0,35 Kw;
- net weight: ~140 Kg.

Control panel:

- general switch;
- adjustable timer from 0 to 150°C;
- pressure regulator from 0 to 6 bar;
- electronic timer and thermo-regulator.

Designed in keeping with the international safety rules.

1.10 Table

This working station requires the presence of a skilled operator with power to assess the eligibility of cut pieces to go on along upper manufacturing line or not.
Here the trolleys for vamp evening and pre-moulding are prepared, if the model requires vamp.

Structural characteristics:

- bulk dimensions: ~2000x1000x1000 h mm;
- net weight: ~74÷76 Kg.

1.11 Splitting machine

The splitting machine has been designed and realized to carry out evening interventions on materials' thickness, in particular leather, homogenizing it in all cut parts composing upper.
It's an automatic version, supplied with electronic direct change speed, with incision without operator's interventions, pneumatic working pressure, touch screen alarms and warnings.
It is supplied with functioning diagnostics and electronic gauge of the processed material able to automatically adjust presser foot's position.

Constructive characteristics:

- useful working surface: 520 mm;
- cut thickness: maximum 8 mm, minimum 0,6÷0,2 mm;
- no adjustment of blade inclination;
- blade measure: 3100x50x0,80 mm;
- blade rail plates unit with automatic adjustment;

- optical unit for chamfer symmetry control;
- mobile flywheel on roller precision rails;
- digital visualization of: cut thickness, working speed, automatic incision;
- self-lubricating mechanical components;
- sharpening unit: use of pottery or diamond grinding wheels, single micrometric control, quick adjustment of chamfer length;
- fixed roller/rule quick change without joint removal.

Technical characteristics:

- bulk dimensions: 1700x1100x1300 h mm;
- installed power: 3,3÷3,5 Kw;
- net weight: 670-700 Kg.

Accessories:

- standard superior roller;
- rubberized inferior roller conveyor;
- grinding wheels' alternative kit;
- mechanical thickness gauge.

1.12 Pre-moulding machine

The manufacture of uppers for models with rather wide single-piece vamps, for example low boots and boots, or which must be lasted on lasts with convex lines with a prominent instep, requires a particular manufacturing of upper parts before starting the lasting with seams.
In other words, it is necessary to make pre-mould these vamps, causing, with combined actions of pressure and heat, such sinking of material's fibres to reproduce as much precisely as possible last's front surface on which the lasted upper is lasted.
The pre-moulding machine, operating through the combination of a mechanical action first, aimed at forcing, with a metal arm, the upper part to be moulded to crawl between two pure metal, duly moulded plates; the second action, due to heat, remoulds the piece making it take and keep the suitable configuration.

Constructive characteristics:

- flexibility in plates/resistor replacement;
- side plates adjustable on three axes;
- adjustment of the plates pressure to the exigencies of the material with mechanical and pneumatic interventions;
- adjustable springing cycles;
- arrangement to the connection of a humidifying device;
- more versions available according to the type of upper: standard, for low boots, for boot.

Technical characteristics:

- bulk dimensions: 650÷690x700÷740x1400÷1600 h mm;
- installed power: 1,8÷2,0 Kw;
- air consumption at 6 bar: 5÷10 Nl/cycle;
- cycle duration: 2÷10 seconds;
- springing stroke: max 250 mm;
- temperature: 70°÷100°C;
- net weight: 350÷450 Kg.

Control panel:

- electronic control of machines' cycle;
- independent temperatures with digital control.

Machine is in keeping with European safety rules.

1.13 Receptacle for cut parts

They are plastic containers used to collect upper batches launched into production. They are the same used in the upper assembling department.

Constructive characteristics:

- bulk dimensions: 550x380x250 h mm;
- net weight: 1,8 Kg.

Upper preparation and assembling

2.01 Skiving machine

This machine is used to carry out chamfering interventions along parts of the edge of upper components, reducing thickness according to the construction exigencies provided by the pattern-maker. The recourse to skiving interventions are aimed at facilitating the operations like folding and overlapping seams of parts to be sewed together, creating the conditions to improve upper look once it has been completed and at the same time offering a better comfort during walking.
The parameters characterizing the execution of skiving concern: thickness, inclination, width and feeding speed.
The machine is a computerized skiving machine operating by means of self-adjusting electronic sensors. All functions are carried out by mechanical units activated by independent engines, constantly managed by the computer.
The distance of blade edge from presser foot is planned by the operator with micrometric precision and automatically kept steady while wearing.
Blade sharpening and grinding wheel reviving are automatically managed by machine, in keeping with the values of intensity, times and cadences chosen by operator itself.
According to operator's choice, the conveyor roller of the working piece can be continually revolved at the adjustable speed or at variable speed, operated by the presser foot.
Skiving parameters are chosen by the operator and automatically memorized. Hundreds different types of skivings can be memorized and each one of them can be available simply touching a button.
Thanks to the sequential programming, different types of skivings can be executed along the perimeter of a piece.

Constructive and structural characteristics:

- computerized machine;
- blade positioning;
- blade sharpening and grinding-wheel reviving;
- feeding of the piece;
- management of skiving parameters;
- memorization with simple or sequential programming;

Technical characteristics:

- skiving width: 0÷20 mm;
- skiving speed: 0÷750 mm/second;
- blade rotation speed: 2700 rounds/minut;
- bulk dimensions: ~1050x550x1030 h mm;
- installed power: 1,1÷1,3 Kw;
- net weight: 145÷150 Kg.

Control panel:

- start-stop switch;
- rotary knife-presser foot distance adjustment;
- equipment for the management of the sharpening-reviving unit;
- piece feed management choice;

- management of the skiving parameters.

2.02 Coupling machine

Machine studied to couple upper parts and reinforcement materials supplied with different structural characteristics aimed at strengthening the tightness of these parts, giving them the required contents as well as a good look.

The reinforcing products have been previously treated with thermo-adhesives so that, using the right combination of temperature, pressure and time of intervention, they warrant definitive qualitative levels in keeping with precise specifications.

Construction and structural characteristics:

- double alternate drawer for work's continuity during loading and unloading;
- availability of pressing and high temperatures;
- heated plate designed for a safe detachment of processed pieces.

Technical characteristics:

- bulk dimensions: ~820x1250x1300 h mm;
- heated plate dimensions: ~400x600 mm;
- installed power: 3,0 Kw;
- working power: 12 KN;
- air pressure: 5÷8 bar;
- air consumption: 4÷6 Nl/1';
- maximum temperature: 200°C;
- net weight: ~260 Kg.

Control panel:

- PLC for the management and control of the manufacturing phases;
- time, temperature and pressure planning out.

Machine is in keeping with international safety rules.

Upper assembling

3.01 Zig-zag sewing machine

This kind of equipment belongs to the family of the so called "flat-bed" sewing machines; they differ from the latter ones because they carry out flat seams called "zip fastener", joining two edges of material with sharp cut (one continuous to the other one) and zig-zag sewed with knotted stitch.
With this kind of seam, material has no added thickness; this causes a weak tightness with the consequence that every intervention of this kind must subsequently be duly stiffened with the application of the suitable reinforcements.
This kind of machines, whose seam is formed by a succession of stitches set alternatively on the right and on the left of seams ideal median line, are characterized by a high reliability with different speeds, over the 400 stitches per minute, also with thin yarns.

Constructive characteristics:

- flat-bed configuration;
- needle system 438;
- zig-zag stitch type 304 knotted with width up to 6 mm and length up to 2,5 mm;
- jaw feed;
- thread trimmer unit:
- seam maximum speed: 5500 stitches per minute;

- engine round maximum speed: 2800 per minute at 50 Hz, 3000 per minute at 60 Hz;
- integrated engine ECO-DRIVE;
- free working area: 260x130 mm.

Technical characteristics:

- bulk dimensions: 1100x550x1120 h mm;
- installed power: ~0,55 Kw (feed 380 V/50÷60 Hz)
- air pressure: 6 bar;
- net weight: ~50 Kg; with table ~70÷76 Kg.

Control panel:

- start-stop switch.

Machine is in keeping with European safety rules.

3.02 Flat-bed sewing machine

This kind of sewing machine belongs to the series of last generation high speed sewing products in the upper manufacturing version.
A clever concept of machine and the use of components realized with wear-resistant materials warrant a high operative reliability free-maintenance, flexibility according to the different exigencies of upper manufacturing, spare of time and a high speed.
Machine operates with a rather light yarn tenseness adjustment and carries out, in spite of this, a clear and good-looking seam which strengthens footwear look once manufactured.

Constructive characteristics:

- family:, flat-bed sewing machines;
- 1 needle and knotted stitch;
- needle system and measures: 134 (DBx1), maximum Nr 140;
- crochet on horizontal shaft;
- jaw feed and small wheel presser foot in neutral;
- thread trimmer unit;
- presser foot regulator and electromagnetic fastener;
- integrated electronic engine with high rudiment (~50% reduction of energetic consumption);
- absence of vibrations and no slippage of drive belt;
- fixed dosage lubrication per capillarity;
- adjustable needle bar stroke: from 30 to 36 mm (very important requisite with materials with different thicknesses).

Technical characteristics:

- stitch maximum length: 4,5 mm;
- seam maximum thickness: 13 mm (if fabrics)
- bulk dimensions: 1050x550x1110÷1115 h mm;
- installed power: 0,40 Kw (feed 230 V/50÷60 Hz);
- net weight: ~50 Kg machine + 24÷26 Kg bench.

Control panel:

- start-stop switch.

Machine is in keeping with international safety rules.

3.03 Table

Its function is to let operator support people working on sewing machines, carrying out the interventions required in the intermediate phases like yarn adjustment, glue spreading, edge folding before proceeding to subsequent assembling phases along the route provided by footwear model.

Structural characteristics:

- bulk dimensions: ~1100x550x800 h mm;
- net weight: 24÷26 Kg.

3.04 Machine to apply the reinforcing tape

This apparatus is aimed at simultaneously carrying out different operations: the operator opens the lips formed by sewing the two overlapping parts of upper (i.e. the union of the two quarters on the back) and irons them, applies an adhesive tape which reinforces seam itself and keeps the two open edges stretched out.
Machines' arm frame allows such interventions either on semifinished products' open parts or on closed uppers of shoes and boots.
The presence of two controlled rollers allow an easy insertion of upper, as well as its feed and tape application without causing wrinkles.
Tape's precise cut, once the route to be reinforced has been completed, occurs after photocell impulse. The working area has been planned to attain a wide visibility and allows a direct feeding piece after piece.

Constructive and structural characteristics:

- double roller feeding;
- automatic application and cut of the reinforcing tape;
- feeding speed with direct current engine without brushes, easy to adjust and precise.

Technical characteristics:

- adjustable feeding speed: 0÷300 mm per second;
- bulk dimensions: ~1040÷1060x780÷800x1360÷1370 h mm;
- installed power: ~0,30 Kw (monophase feed; 220V/50÷60 Hz);
- air consumption: 4,5÷5,5 Nl/1' at 3 bar;
- net weight: 94-99 Kg.

Control panel:

- pressure adjustment;
- feeding speed adjustment;
- start-stop switch.

Machine is in keeping with European safety rules.

3.05 Folding/Thermo-moulding machine

The realization of the internal mechanics of this machine combined with the evolution of the programming techniques allowed to create a precise harmony of the folding devices with the right control on speed and feed pitch.
The results become a concrete reality in a correction of the curve of the folding width with the support of a folding device, in knife's servo-control, warranting clear cuts also with low speed as well as alternative cuts.
From the control panel, the operator suggests to machine the indications concerning every aspect of the manufacturing cycle.
The characteristics of each folding are monitored by computer, able to memorize and reproduce them, if required.

In this way, for every process defined in detail, it's possible to attain the adjustment of the folding devices, speed and feed pitch on the right side, internal and external curve, concave and convex bend width, continuous alternate or excluded knife's cuts and glue distribution.

Constructive characteristics:

- folding devices managed by computer;
- low consumption feed released from knife's working mechanics;
- knife operated by servo-control, independent from main engine;
- servo-control pump for glue distribution.

Technical characteristics:

- folding width: 3÷7 mm;
- brushless DC engine rotary speed: ~3000 rounds/1';
- feed pitch: 0,5 a 5,5 mm;
- feeding speed: 0-275 mm per second;
- bulk dimensions: ~1100x550/600x1200 h mm;
- installed power: ~0,6 Kw (monophase feeding);
- net weight: ~80 Kg.

Control panel:

- presser foot servo-control, rail, folder from computer;
- speed managed for straight piece, concave curve, convex curve;
- knife cutting modalities;
- glue: dosage, temperature;
- starting photocells, knife, pitch;
- planning selection of folding.

Equipment for:

- French edge;
- folding with reverse lining;
- flat insoles

Machine is in keeping with European safety rules.

3.06 Arm-type sewing machine

This kind of sewing machine is aimed at solving specific footwear manufacturer's exigencies, concerning in particular quality, to improve product as regards look combined with a lower waste of energies and time.
One of the most interesting services and performance provided by this kind of machine is the application of edges in the different configurations and types of materials adopted.
As a binding machine, this machine allows edges application getting their accurate and precise collocation along the whole extension of opened or closed upper necks or in presence of leather or cloth slippers.

Constructive characteristics:

- arm sewing machine;
- version with one needle and knotted stitch;
- triple feeding: jaw, needle, alternate presser foot;
- stitch length up to 4,5 mm;
- small vertical crochet;
- pneumatic presser foot and knotting;
- useable yarn max 15/3;
- Efka electronic engine, feeding 380V/50 Hz.

Technical characteristics:

- support table dimensions: 600x700 mm;
- table total extension: 1300 mm with 1200 mm height;
- installed power: 0,50 Kw;
- net weight: ~150 Kg.

Control panel:

- small external display with planning functions.

Machine is in keeping with European safety rules.

3.07 Post-bed sewing machine (1 needle)

Machine's configuration and structure allow easy sewing interventions, in particular when the semifinished takes three-dimensional configurations which require freedom of movement in the space.
The greatest benefits supplied by this kind of equipment are achieved during upper top stitching and closing, when the operator carries out interventions avoiding any lining's curling, and getting high manual skill realizations.

Constructive characteristics:

- post-bed sewing machine at the right of the needle;
- 1 needle, knotted stitch;
- jaw and needle feeding;
- rounded needle plate
- electromagnetic thread trimmer (length of yarns curved inwards ~10 mm);
- automatic presser foot lifting, with electro-pneumatic control;
- supplementary intervention with knee for intermediate lifting of the presser foot;
- mechanism for the execution of fastening stitches with assistant bottom for in-between fastening stitches;
- integrated engine: it offers a greater space to legs;
- accurate and simple adjustment of needle protection;
- crochet automatic lubrication;
- spool yarn monitoring with stitches count;
- column height: 180 mm.

Technical characteristics:

- maximum seam speed 3000 stitches/1';
- needle system: 134 (for middle thickness materials, yarns up to 30/3 synthetic, needle measure 80÷100 Nm);
- bulk dimensions: 110x550x1125 mm;
- free working space: 260x290 mm;
- installed power: ~0,55 Kw (feeding 230V/50÷60 Hz);
- net weight: ~47 Kg machine + 24÷26 Kg bench.

Machine is in keeping with European safety rules.

3.08 Post-bed sewing machine (2 needles)

Machine's configuration and structure allow easy sewing operations, in particular when the semifinished takes three-dimensional configurations which require freedom of movement in the space.
The greatest benefits supplied by this kind of equipment are the ones present in the operations of particular efficacy concerning stitches' length precision and the exact distance kept along the different sections involved by the two lines of paired seams.
Constructive characteristics:

- post-bed sewing machine;
- needle, knotted stitch;

- rotary jaw feed and roller presser foot:
- rounded needle plate;
- electromagnetic thread trimmer (length of yarns curved inwards ~10 mm);
- automatic presser foot lifting, with electro-pneumatic control;
- supplementary intervention with knee for intermediate lifting of the presser foot;
- mechanism for the execution of fastening stitches with assistant bottom for in-between fastening stitches;
- integrated engine: it offers a greater space to legs;
- accurate and simple adjustment of needle protection;
- crochet automatic lubrication;
- spool yarn monitoring with stitches count;
- column height: 180 mm.

Technical characteristics:

- maximum seam speed 3000 stitches/1';
- needles' distance: 1,6÷2,4 mm;
- needle system: 134 (for middle thickness materials, yarns up to 15/3 synthetic, needle measure 110÷140 Nm);
- bulk dimensions: 1100x550x1125 mm;
- free working space: 260x290 mm;
- installed power: ~0,55 Kw (feeding 230V/50÷60 Hz);
- net weight: ~50 Kg machine + 24÷26 Kg bench.

Machine is in keeping with European safety rules.

3.09 Post-bed sewing machine (feed with step by step engines)

It's a kind of machine whose configuration and structure allow easy sewing interventions, in particular when the semifinished takes three-dimensional configurations which require freedom of movement in the space.
The main characteristic of this group of machines is that the device in charge of material's feeding is operated by step by step engines; this allows, if required, to pass to a differentiated feeding activating a button with the knee without breaking off the stitching operation.
Such device is particularly effective first of all when the purpose is a precise upper closing seam along the heel, due to a controlled insertion of well outstretched lining; secondly when it is necessary to uniform lightly wavy lining edges with narrow curves, avoiding lining's tenseness.

Constructive characteristics:

- machine with column at needle's right;
- 1 needle, knotted stitch;
- rotary jaw feed, roller presser foot activated and needle tip;
- rounded needle plate;
- electromagnetic thread trimmer (length of yarns curved inwards ~10 mm);
- device for the execution of fastening stitches;
- integrated engine: it offers a greater space to legs;
- lubrication device with crochet automatic dosage;
- spool yarn monitoring with stitches count;
- simple adjustment of stitch length and number for tongue fastening in the upper, for oxford shoe on the control panel;
- 48 seaming programmes adjustable by means of a display;
- during fastening interventions, the needle exactly enters previously made holes;
- column height: 180 mm.

Technical characteristics:

- maximum seam speed 3500 stitches/1';
- needles' distance: 0,8÷5,0 mm;
- needle system: 134 (for middle thickness materials, yarns up to 15/3 synthetic, needle measure 110÷140 Nm);

- free working space: 260x290 mm;
- bulk dimensions: 1100x550x1125 mm;
- installed power: ~0,22 Kw;
- net weight: ~24÷26 Kg machine + 24÷26 Kg bench.

Control panel:

- display for machine programming with 48 possible diversifications.

Machine is in keeping with International safety rules.

3.10 Post-bed sewing machine (with trimmer)

Machine's description is the same described at paragraph 3.09. What distinguishes this version of sewing machine is its trimming device for lining while it is applied to upper; such device is separately activated and wastes cut occurs from the bottom.

Constructive characteristics (see item 3.09, but it differs in):

- trimming knife, version applied under needle's plate;
- machine with column at needle's left;
- jaw feed and needle's tip.

Technical characteristics:

- cutting speed; 2800 s.p.m./1';
- needle system: 134 LLCR;
- net weight: ~48 Kg + 24÷26 Kg table.

Control panel:

- display for machine programming with 48 possible diversifications.

Machine is in keeping with International safety rules.

3.11 Eyeleting machine

Equipment planned to apply eyelets; it is automatic, except the power supply phase or upper feeding, activated by the operator.
The eyelet is a self-perforating one and its pounding on the matrix may be round, shaped as a ring or as a star.

Constructive characteristics:

- pneumatic version;
- eyelet shank length: maximum ~7 mm;
- arm useful depth: ~160 mm;
- working area heigth: ~920÷1250 mm.

Technical characteristics:

- bulk dimensions: ~520x700x1500 h mm;
- working power: 6 KN;
- air consumption: 3 Nl'/cycle;
- air supply: 6 bar;
- net weight: ~60 Kg.

Machine is in keeping with European safety rules.

3.12 Table

The person in charge of this station carries out possible retouches that may occur during checking.

Constructive characteristics:

- bulk dimensions: 1500x800x900 h mm;
- net weight: 45 Kg.

3.13 Stool

Adjustable stool with stuffed seat and iron back.

Constructive characteristics:

- bulk dimensions: ~460x460x800/1500 h mm;
- net weight: 6,7 Kg.

3.14 Semifinished handling system

Product's handling system in the upper assembling area is proposed in two versions.

First version

Computerized system of automatic distribution and production's data reading. It is suitable to different productive realities where production batches' diversification and fragmentation as well as the presence of sequential operations makes its use very profitable.
The system is formed by a conveyor belt to move store's boxes to the working stations and vice versa.
A controlling unit with related software allows to obtain all a series of controls to warrant the tidy execution of the operative cycle related to each model of each box.

Constructive and functional characteristics:

- automatic feeder, with 38 stations, specific for the conveyance of upper components supplied with plugs, sockets and engine unit;
- automatic unload in every working station;
- conveyor belt enabled for boxes' recovery, supplied with independent engine;
- plastic boxes, each one for a batch launched into production – 120 units: dimensions 550x380x250 h mm;
- double lighting installation, on both sides of the conveyor belt – length 28 metres;
- gravity shelf to collect, on one side, plastic boxes to be launched into production, on the other side, to stock containers coming from the working stations.

Technical characteristics:

- bulk dimensions: 1250x28000 mm^2;
- installed electric power: 6,0÷6,5 Kw;
- compressed air supply circuit: 6÷8 bar;
- total weigth: 1850÷1900 Kg.

Control panel:

- 38 working stations with carpet expanders;
- visualization of partial working times, total for each operator with the possibility of preplanning standardized times;
- survey of times superior to personal standards;
- display visualization of respected and exceeding times;
- real time survey of the number of processed boxes;

- summing up, for each working station, of partial data, total data and quantity.

The plant is in keeping with European safety rules.

Second version

Working stations' feeding uses trolleys, each one supplied with 2 plasticized baskets and pulled by hand from station to station.

Structural characteristics:

- trolley's bulk dimensions: ~780x420x900 h mm;
- basket bulk dimensions: ~710x400x120 h mm;
- net weight: ~10 Kg.

Lasting

4.01 Last holder

Metallic frame designed to tidy connect small series of lasts located in the lasting area, as closer as possible to lasting equipments.
It is made of three metallic overlapping containers, each one supplied with partition for a further splitting of the volume, offering a more accurate collection of lasts' types and/or sizes.

Constructive characteristics:

- bulk dimensions: ~800x550x1680÷1700 h mm;
- net weight: 52÷54 Kg;
- identification label container of last type on every single part of available partition.

4.02 Insole fixing machine

Equipment to provisionally apply insole to last before upper lasting.
Machine carries out nailing with single stroke, selecting one nail at a time, also for safety reasons.
Besides the heel nailing machine, there's a device for insole's trimming when it is not superimposable to edge last.

Constructive characteristics:

- version with presser foot driving gear;
- nails supplied with cylindrical shank, diameter 1,05 mm, rounded head and length 12÷16 mm.

Technical characteristics:

- bulk dimensions: 750x450x1600÷1650 h mm;
- compressed air consumption at 6 bar: 0,2÷Nl/cycle;
- net weight: ~80 Kg.

The equipment is in keeping with European safety rules.

4.03 Table

In this station the operator arranges reinforcing toes before their application with the equipment located sideways, he prepares the stiffener and puts it heel seat housing.

Constructive characteristics:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: ~45 Kg.

Machine to apply toes

The use of this machine warrants the right application of toe, a safe assembling with the material used for upper and the ironing with the light moulding of the vamp between the two moulds by means of heat and pressure.

Constructive characteristics:

- two-stations' version or operative heads;
- pneumatic functioning;
- each head is supplied with pliers for the right fastening of the reinforcement before each intervention.

Technical characteristics:

- bulk dimensions: ~700x430x1520 h mm;
- installed power: ~0,8 Kw;
- compressed air circuit: 6 bar;
- air consumption: ~2x3,5 Nl/cycle;
- net weight: ~80 Kg.

Control panel:

- electronic control device;
- temperature regulator;
- pressure regulator;
- starting with two synchro-temporized switches.

The equipment is in keeping with European safety rules.

4.04 Back-part moulding machine

It's a kind of machine designed to carry out stiffener's pre-moulding once it has been inserted into upper before lasting. It is particularly indicated for leather pre-glued stiffeners, regenerated from solvent leather. The result is a whole body among lining, stiffener and right upper, lightening shoe stabilization process in the subsequent phases and concerning the heat setter, as primary unit of air-conditioning and forced seasoning.

This is a particularly useful operation if we consider that in today's production systems footwear remains in the last for a very short period, at least 30 minutes. That's the reason why pre-stabilization operations are more and more indispensable.

Construction characteristics:

- two-working stations' version with aluminium small last derived from customers' lasts;
- inflatable and reclining bell cushions for a more precise adjustment to small lasts-mould;
- easily adaptable cushions for standard man or lady's shoes and normal, ankle boot, boot uppers;
- small lasts' overturning to check upper's right arrangement and heel seam vertical position;
- horizontally pivoted upper draught pliers;
- visualization by means of a led of working cycle's progressive phases;
- height adjustment of the working position to reduce workers' tiring.

Technical characteristics:

- bulk dimensions: ~950x750x1750 h mm;
- installed power: 1,5 Kw;

- compressed air circuit: ~6bar;
- compressed air consumption: ~22 Nl/cycle;
- net weight: ~350 Kg

Control panel:

- cushion slope planning out;
- foldaway cushion descent planning out;
- pliers draught planning out;
- small lasts and bell cushion temperature planning out;
- cycle time and working power planning out.

The machine is in keeping with European safety rules.

4.05 Lasting edge sand-papering machine

During lasting, the cemented manufacturing process provides that upper edge is glued on shoe construction's insole for an extension of 12÷15 mm.
Being one the most important footwear lasting tightness elements, gluing is required to offer the due warranties.
The footwear manufacturing experience teaches that, to get such result, it is necessary to carry out a sandpapering operation on material along the edge of manufactured upper.
It concerns, in particular, lining and a part of the right side if upper is unlined.
The answer to such exigency is provided by the sandpapering machine for free uppers, supplied with tools like a wheel covered with sandpaper and a second wheel keeping semifinished product's edge on the first one.
In this way, leather thin finishing cover applied by the tannery is removed, and its surface is engraved with micro-trucks which provide a safe fastening of glue during the lasting phase.

Construction characteristics:

- one single operating head;
- sandpapering device coupled to a circular pressing device;
- pressing device lifting with presser foot control to avoid the removal of material in any crucial point for upper tightness or of overlapping seams.

Technical characteristics:

- bulk dimensions: ~600x500x1450 h mm;
- installed power: ~1,5 Kw (electric feeding 380 V – 50 Hz);
- net weight: ~140 Kg.

The machine is in keeping with European safety rules.

4.06 Vamp and upper side reactivating device/steaming machine and toe softening

This processing is aimed at increasing upper humidity contents, involving either the right side or the lining, yet leaving them dry but providing softness.

Thanks to this operation, leather doesn't break under pliers' strain of the pulling-over and lasting machine; it doesn't change colour giving rise to unpleasant nuances and leaves grain as more intact as possible. The used fluid: overheated saturated steam and compressed air.
Reactivation concerns the reinforcing toe which, softening fibres, definitively models itself on last providing footwear with a line uniformity in correspondence of toe.

Construction characteristics:

- all parts composing machines are stainless steel;
- electro-pneumatic functioning;

- the container feeding water to produce steam has a capacity of 35÷40 litres, maximum consumption in 8 hours;
- one operative station.

Technical characteristics:

- bulk dimensions: ~350x500x1350 h mm;
- installed power: ~4,6 Kw;
- net weight: ~45 Kg;
- compressed air consumption at 6 bar: 30÷35 Nl/cycle.

The machine is in keeping with European safety rules.

4.07 Programmable pulling-over and lasting machine

The pulling-over and lasting machine carries out upper lasting on selected last, related to toe and besides it, involving the whole sole and waist's starting part.
The technology of the version proposed here is the one called to answer to "ready-to-fashion" challenge and to the new exigencies of high-quality shoes.
Machines belonging to this class of pulling-over and lasting machine are characterized by the high versatility and the considerable presence of special devices and instruments able to overcome very significant craftsman capabilities.
The results also concern execution times and in particular the times required for manufacturing changes, reduced to very low values.

Construction characteristics:

- oleo-dynamic functioning;
- system with markers;
- memorization up to 50 programmes;
- lasting along: lasting-jack handling; draught positions and pliers' opening times; plates' adjustment, Teflon pressure;
- operative modalities: starting times, very quick production changes.

Technical characteristics:

- bulk dimensions: ~960x1635x1850 h mm;
- installed power: 5,8÷6,2 Kw;
- net weight: ~1450 Kg.

Control panel:

- times, adjustments and machine's functions adjustable by means of a touch screen.

The machine is in keeping with European safety rules.

4.08 Heel-seat and side upper reactivating device/steaming machine and stiffener's softening

The aim of this treatment is to get upper softness in particular along the sides and on the heel-seat and to reactivate stiffener's material to make it become more malleable and deformable. In this way, such reinforcing material is aimed at taking last's line on the heel creating the suitable foot comfort while walking.
Used fluid: overheated saturated steam and compressed air.
Construction characteristics:

- all parts composing machines are stainless steel;
- electro-pneumatic functioning;
- the container feeding water to produce steam has a capacity of 35÷40 litres, maximum consumption in 8 hours;
- one operative station.

Technical characteristics:

- bulk dimensions: ~350x500x1350 h mm;
- installed power: ~4,6 Kw;
- net weight: ~4,5 Kg;
- compressed air consumption at 6 bar: 30÷35 Nl/cycle.

The machine is in keeping with European safety rules.

4.09 Programmable heel-seat laster/side laster

It belongs to the family of machines which contemporary carry out upper lasting along sides-waist and heel-seat.
Like the counterpart, concerning technology, pulling-over and lasting machine, it is suitable to answer to the always new footwear exigencies, in particular high-quality shoes, with very precise and accurate interventions adjusting to a changeable market and often unexpected requests.

Constructive and performance characteristics:

- side and heel-seat lasting carried out with a single machine and intervention:
- easy self-adjustment management and contained in a few pages of video at machine's side;
- change of a matrix; in a short time it allows to pass from a lady's shoe with high heel lasted with nails to a sport shoe lasted with glue, to a man's shoe lasted with nails and glue;
- programmable routes for nails on side and for the application of thermoplastic on side and heel-seat directly on insole;
- new concept of self-adjusting matrix fastening for every kind of last;
- possible machine's connection to a footwear CAD system to receive data related to the different models to be processed;
- possible net connection to update in real time the progress along the productive phases;
- lasting-jack entrance controlled by photocell directly on last;
- programmable slope of side heel nailing devices;
- pliers unit with different adjustments and working possibilities.

Technical characteristics:

- bulk dimensions: 1550÷1650x1600÷1700x2050÷2150 h mm;
- installed electric power: 4,5÷5,0 Kw.
- air consumption at 6 bar: 12÷16 Nl/cycle;
- net weight: 1600÷1750 Kg.

Control panel:

- programming system with touch screen.

Machine is in keeping with European safety rules.

4.09* Programmable heel-seat laster / side laster

This version of programmable heel-seat laster / side laster has the same function of the machine described in the previous paragraph.
It is a last-generation machine supplying high-performances in the lasting with nails of high-heel lady's shoes side. The achieved result is a draught of this part of upper on last to equalize and overcome the one achieved by the best craftsman with a long experience in the field.

Constructive and performance characteristics:

- universal: all-nails, all-glue, glue and nails lasting in all footwear parts;
- mobile head with possibility of adjusting free upper;
- programmable pliers' positioning and draughts.

Technical characteristics:

- bulk dimensions: 1600÷1650x1650÷1700x2000÷2150 h mm;
- installed power supply: ~6 Kw;
- air consumption at 6 bar: 13÷18 Nl/cycle (~80/Nl/1');
- net weight: 1850÷2000 Kg.

Control panel:

- programmable system with touch screen.

Machine is in keeping with European safety rules.

4.09a Machine to last sandals

With regards to upper, the sandal is normally made of more strips fixed to insole along sole area. Lasting has always been carried out by hand, prefixing strips to insole in twos with the opportune placing as imposed by the model and after strips' gluing.
To fasten last, the person in charge of the manual pre-lasting used to use his legs, making pressure with his knees.
This machine, with pneumatic functioning, has been conceived to be able to have free hands, facilitating the sequence of all necessary operations for a comfortable and precise lasting.

Constructive characteristics:

- equalizer able to fasten insole to last without using staples or tacks;
- 180° last overturning system;
- inflatable cushion to fasten upper-sandal once it has been centred on last;
- possible execution of side and horizontally pivoted movements;
- working area height adjustment;
- pneumatic functioning.

Technical characteristics:

- bulk dimensions: ~550x900x1300 h mm;
- installed power: ~0,10 Kw (feeding 220V-50 Hz);
- compressed air consumption at 5-6 bar: ~3 Nl/cycle;
- net weight: ~10 Kg.

Control panel:

- start-stop switch;
- switch for different handling;
- emergency switch.

Machine is in keeping with European safety rules.

4.10 Man's lasted shoe pounding machine

This machine is aimed at achieving surface's levelling of the lasting edge on insole along the whole edge last.
It is an operation which prepares such area before its sandpapering and which avoids possible material's swelling or waving in case of application of particularly light insole or sole like the one of a décolleté.

Footwear quality is realized step by step; each operation is carried out with care and precision, avoiding interventions that may cause damages and letting product pass the quality control station.

Constructive characteristics:

- primary roll: flanges, pins and rolls in neutral made of treated steel;
- electromechanical functioning;
- vibrations within the limits required by EC directives;
- ironing hammers, with reciprocating movement, operating on upper;
- booth lined with sound absorbent material.

Technical characteristics:

- bulk dimensions: ~950x650x1000 h mm;
- installed power: ~1,50 Kw;
- net weight: ~400 Kg.

Control panel:

- start-stop switch;
- emergency switch;
- temperature regulator.

Equipment:

- soundproof booth for noise demolition within the limits allowed by the Community laws;
  - bulk dimensions: 1300x860x1900 h mm;
  - net weight: 130 Kg.

4.10 * Lady's lasted shoe pounding machine

It belongs to the same family of machines described at paragraph 4.10 and it presents the same functions.

Construction characteristics (see paragraph 4.10).

Technical characteristics:

- bulk dimensions: ~650x550x1360 h mm;
- installed power: ~0,75 Kw;
- net weight: ~150 Kg.

Control panel:

- Start-stop switch;
- emergency switch;
- temperature regulator.

Equipment:

- soundproof booth for noise demolition within the limits allowed by the Community laws;
  - bulk dimensions: 1300x860x1900 h mm;
  - net weight: 130 Kg.

4.11 Stabilization heat setter

The stabilization of lasted upper on last is very important and is a critical process.
Climatic chambers, or stabilization heat setters' first task is to loosen the different tensions generated by the materials, in particular in leathers, during upper lasting phase and in upper itself and to stiffen the new shape acquired after such operation as much as possible.
The maintenance of lasted upper's shape, carried out in the past leaving the shoe for 10 or more days at room temperature, is now attainable in a few minutes in the heat setter.

Construction characteristics and performances:

- heat setter with high speed circulating air: hot air mixture and vapour;
- conveyor belt with the channelling of the semifinished;
- air temperature (80-150°C) and steam quantity independently displayed and set;
- adjustable treatment time;
- conveyor's function from one station to the subsequent one.

Technical characteristics:

- bulk dimensions: ~960x1650x1530 h mm;
- installed power: ~10 Kw;
- net weight: ~560 Kg.

Control panel:

- air temperature regulator;
- steam quantity regulator;
- treatment length time regulator.

Machine is in keeping with European safety rules.

4.12 Software with hot air and steam jet

Once lasted upper has undergone the stabilization heat setter, it should undergo some possible grain adjustment or arrangement.
Some small wrinkles may be eliminated by means of a hot air and steam ironing machine supplied with ironing rolls; grain pores' opening may be adjusted as a consequence of the traction suffered during lasting.

Construction characteristics:

- steam generation chamber;
- hot air steam mixing;
- ironing rolls and foot lever for interventions with steam;
- adjustable hot air speed;
- automatic stand by;
- hot air temperature and steam independently displayed and adjustable;
- all parts are made of stainless steel.

Technical characteristics:

- bulk dimensions: ~730x440x1480 h mm;
- installed power: + steam generator ~3,6 Kw;
  + hot air resistance ~4,5 Kw
  + engine ~0,75 Kw
- net weight: ~80÷82 Kg;
- air consumption at 6 bar: 60÷80 Nl/1'.

Electric control panel:

- start-stop switch;
- air speed regulator;
- steam regulator;
- temperature regulator.

Machine is in keeping with European safety rules.

Bottom manufacturing - Finishing

5.01 Sandpapering machine / Computerized gluing machine

Upper edge lasted roughing operation on insole is particularly relevant, given the delicate and critical intervention which precedes glue deposit before sole lasting.
The technological evolution of this kind of interventions has brought to the setting up of highly automated machinery which has included and integrated in one single productive unit also glue deposit along the same course.

Construction characteristics and performances:

- the semifinished is loaded and taken back after two interventions: sandpapering and glue deposit;
- the roughing and glue spreading phases occur without moving the lasted last, warranting the identical route of the 2 tools;
- self-learning of the profile and its detection with 60 stitches distributed on last;
- the profile acquired for the roughing phase is elaborated by the computer and used for the gluing operation;
- roughing brush pressure changeable from stitch to stitch;
- adjustment of the brush speed and spreading brush;
- bent of the tools automatically determined by the computer along last profile;
- brush sharpening adjustable according to the parameters: frequency and time;
- efficient system of capitation of the dusts generated by roughing.

Technical characteristics:

- bulk dimensions: ~850x1900x2100 h mm;
- installed power: ~5,0 Kw (three-phase feeding 220-380 V/50Hz);
- compressed air consumption at 6÷8 bar: 23÷30 Nl/1';
- sound levels: Lep 57dBA – Lpc < 74,5 DC;
- net weight: ~950 Kg.

Control panel:

- start-stop switch;
- brush speed adjustment;
- brush speed adjustment on material;
- execution of stitches' learning for edge last.

Machine is in keeping with European safety rules.

5.01* Adjustable sandpapering machine / Gluing machine

The machine, belonging to the group of units operating in the area of lasted shoe bottom manufacturing, has a double function combined with sandpapering and gluing interventions.
It is completely computerized, with frontal loading and mono-head supplied with two tools programmed to work alternatively.

Construction characteristics and performances:

- two working stations;
- man, lady, child's manufacturing (boots);
- automatic tools' change;
- use of any kind of glue;
- fifth axle programmable also to keep the roughing brush upright on shoe, in parallel with the shank;
- different pressers per programmed stitch and brush speed per sole, waist and seat.

Technical characteristics:

- bulk dimensions: ~1150x1850÷1900x2200 h mm;
- installed power: 4,5÷5,0 Kw;
- net weight: ~940÷960 Kg;
- compressed air consumption: 10 Nl/1'.

Control panel:

- start-stop switch;
- brush speed adjustment for sole, waist and seat;
- pressure adjustment for brush programmed stitch on material in the different areas of the edge last.

Machine is in keeping with European safety rules.

5.01* Roughing machine / Pounding machine / Sandpapering machine

Machine for the manufacturing of the bottom of the lasted shoe, in particular for lady's shoes.
It has a frontal loading and uses a mono-head supplied with two tools programmed to work alternatively.

Construction characteristics and performances:

- two working stations;
- manufacturing of every kind of shoes, in particular lady's shoes and boots;
- automatic tools' change;
- with combined double function as regards the interventions: roughing, pounding; roughing-sandpapering; pounding-sandpapering;
- milling cutter roll for the roughing with cleaning of insole's lasted edge excesses;
- pounding roll with complete flattening of the parts of the toe, waist and seat with lasted shoe;
- sandpapering machine with different pressers for programmed stitch and different speeds along the edge last;
- fifth axle for the direct positioning of the brush tools and roll, in parallel with the shank and insole on shoes with very high heel and narrow waists.

Technical characteristics:

- bulk dimensions: ~1150x1850÷1900x2200 h mm;
- installed power: 4,5÷5,0 Kw;
- compressed air consumption at 6 bar: 940÷960 Kg;
- net weight: 10 Nl/1'.

Control panel:

- start-stop switch;
- speed adjustment of brush for sole, waist and seat;
- pressure adjustment for programmed stitch on the material in the different areas of the edge last.

Machine is in keeping with European safety rules.

5.02 Table

The glue of different kinds is now spread, included the one containing water. Since some glues may contain also a very small percentage of solvents, the table is supplied with a suction unit for volatile substances, collected and disposed in keeping with the norms in force.

Constructive characteristics:

- sheet steel treated with suitable varnish;

- suction unit with capacity compatible with the quantity of glue used.

Technical characteristics:

- bulk dimensions: ~1050x800x900 h mm;
- installed power: 0,10;
- net weight: 45÷46 Kg;
- start-stop switch.

Glue dispenser

It is a container with a capacity of 10 litres able to collect water or solvent glues with or without activators. The container must be kept closed also during the manufacturing breaks to avoid the creation of solvent fumes. In this case, the glue can be used in more shifts.
This kind of container is particularly suitable for the use of glues that must be combined with the activator. The positioning on the suitable support allows its easy and comfortable use.

Technical characteristics:

- bulk dimensions: ~500x500x1000 h mm;
- capacity: ~10 litres;
- maximum pressure: 4 bar (2,2);
- net weight: ~30 Kg.

Equipments

- couple of supplying guns;
- series of small glasses to keep brushes' softness;
- plastic containers for glue and solvent.

5.03 Drying and reactivating heat setter

The air-conditioning function used for the drying of the glues spread on the bottom of the lasted shoe and on the sole to be coupled has recourse, as effective system, to air, at room temperature, circulating at high speed: 25 or more meters per second.
This technique is used to avoid the creation on glues of a pellicle resistant to heat hindering the evaporation of the substance present on the adhesive, water or solvent, necessary to facilitate its homogeneous deposit on the surface involved. Glue reactivation occurs in the same equipment in continuous sequence through drying. The same conveyor belt brings the semifinished products in the drying area where the preparation is completed by special quartz lamps before sole lasting.

Functional characteristics:

- loading area with 6 stations on conveyor belt to locate as much glued on shoes and 6 stations abreast for the respective soles;
- evaporation area: tunnel for the acceleration of solvent or water evaporation process with collection and conveyance for the clean unloading;
- reactivation area: course of diversified heating for sole and lasted shoe-boot;
- unloading area: the operator in charge of the lasting press of the shoe and related sole, already paired off to be coupled;
- linear conveyor belt;
- adjustable conveyor speed according to the type of material and glues;
- warning system to avoid semifinished products' overheating.

Technical characteristics:

- bulk dimensions: ~2900x1100x1600 h mm;
- installed power: 10-12 Kw;
- air consumption: none;

- net weight: 400÷420 Kg.

Control panel:

- general switch;
- start-stop switch;
- conveyance speed selector;
- temperature selector for lasted shoe and separately for sole.

Machine is in keeping with European safety rules.

5.04 Sole pressing machine

The definitive application of the sole to the lasted shoe can be carried out with different solutions and alternative proposals which favours the particular type of footwear manufacturing, its destination of use and the configuration taken by the sole, which can significantly influence the designing of a machine of this kind (for example opanka sole).
The machine proposed is suitable for a rather universal use of such function.
It is hydraulically activated and uses some support cushion for shoes with sole, just accurately coupled, leaning on rubber flaky sectors conceived to automatically place themselves to reproduce the exact configuration of the bottom to be applied.

Constructive characteristics and performances:

- two working stations;
- pneumatic flaky sectors;
- hydraulic functioning;
- self-levelling system of toes to fasten last;
- slope stroke control of the cushion which extends the use to every kind of shoes, included boots.

Characteristics:

- bulk dimensions: ~1000÷1050x1050÷1100x1900 h mm;
- working power: 1000 N/cm;
- installed power: ~1,5 Kw;
- compressed air consumption at 4÷6 bar: 0,35÷0,45 Nl/cycle;
- net weight: ~1000÷1100 Kg.

Control panel:

- start-stop switch;
- general switch;
- adjustment of intervention time;
- basin's height selector;
- last's fastening selector on the back part per type of shoe;
- emergency button.

Machine is in keeping with European safety rules.

5.05 Brushing – Sizing machine

Here begins the finishing phase. Upper leather finishing requires more treatments with chemical products according to grain characteristics and the aesthetic exigencies to be satisfied.
During lasting, upper undergoes some stresses, often causing a big opening of grain pores, generating an unpleasant look.
During the final sizing, leather must be uniform and regular, to make products reliably adhere and homogeneously distribute along the whole surface.
The brushing-sizing machine allows the attainment of such kind of preparation through the application of a chemical product film.

Constructive characteristics:

- main engine with double shaft and 2 speeds;
- 2 sucking engines;
- 2 built-in whirlwind receptacles;
- 2 working stations.

Technical characteristics:

- bulk dimensions: ~1170x1120x2560 h mm;
- installed power: ~4,6 Kw;
- main engine: 900 o 1400 rounds/1';
- sucking engine: 1400 o 2800 rounds/1';
- net weight: 250÷260 Kg;
- noisiness: 79 dBA.

Control panel:

- start-stop switch;
- 2 speeds selection switch 900/1400 rounds;
- 2 speeds selection switch 1400/2800 rounds

Accessories:

- kit brushes according to the manufactured leathers.

5.06 Last puller

This machine has been designed to remove last from shoe. The correct use of this device avoids the breaking of the shoe along the seam of outside counter's median line or lining's tear in the area of the quarter or other possible damages.
It can be used for all types of lasts, being supplied with a special device whose selection allows the opening and pulling out of the "top over" last.

Technical characteristics:

- bulk dimensions: 1000x700x1450 h mm;
- air consumption: ~1,20 Nl/1';
- net weight: 290÷300 Kg.

Machine is in keeping with European safety rules.

5.07 Heel nailing machine

This heel nailing machine is used for all shoes with separated heel and sole. It warrants the safe fastening of the shoe bottom.
The effectiveness expected by this operation is inversely proportional to heel seat surface and proportional to heel's height.
The heel nailing machine is a press; the version used here is an automatic pneumatic heel nailing machine with programmable sequence and electronic control.
It is used either with standard shoes or boots.

Constructive characteristics and performances:

- complete programmability of the nailing sequence;
- self-diagnostics to detect electric breakdowns;
- pneumatic fastening for high and flat heels;
- nails and screw loading divided into 6 sections;
- automatic releasing of the nail-holder device;

- mobile lasting-jack for boots' manufacturing.

Technical characteristics:

- bulk dimensions: ~900÷1000x1100÷1150x2050÷2150 h mm;
- installed power: ~0,20 Kw;
- compressed air consumption 6t bar: 40 Nl/cycle;
- net weight: 480÷520 Kg.

Electric board:

- general switch;
- start-stop switch;
- selection of sequences to be programmed.

Machine is in keeping with European safety rules.

5.08 Table

This working station is used to carry out accurate interventions on sole and heel edging, completing finishing.

Constructive characteristics:

- all frame made of metal;
- open drawer on the same level with semifinished product's support surface for the collection and storage of specific products;

Technical characteristics:

- bulk dimensions: ~720x500x900÷950 h mm;
- net weight: ~10÷11 Kg.

5.09 Machine for the treatment with waxes and for bottom polishing

In this working station, attention is turned to the finishing of sole bottom and of its edging profile. The treatment is realized having recourse to waxes, colouring substances, sizes that, once brushed, offer a moderate polished appearance tied to the nature of the manufactured leather.
The characteristic of this intervention exalts the artisan richness of people grown for many years in the footwear environment and who have acquired all a series of experiences, result of tenacity and continuous research.

Constructive characteristics:

- main engine with double shaft and 2 speeds;
- 2 sucking engines;
- 2 built-in whirlwind receptacles;
- noisiness 79 dBA;
- 2 working stations;
- speed converter.

Technical characteristics:

- bulk dimensions: ~1170x1120x2560 h mm;
- installed power: ~4,6 Kw;
- main engine: 900 o 1400 rounds/1';
- sucking engine: 1400 o 2800 rounds/1';
- net weight: 250÷260 Kg;
- noisiness 79 dBA.

Control panel:

- start-stop switch;
- 2 speeds selection switch 900/1400 rounds;
- 2 speeds selection switch 1400/2800 rounds

Accessories:

- kit of plugs and brushes manufactured according to the type of leathers or imitation leather of the bottoms to be manufactured.

5.10 Table

In this station, the operator is asked to carry out operations related to upper, that is to correct small damages suffered by the semifinished along the whole manufacturing cycle or already belonging to leather itself, to cut seam yarns, to retouch by means of hot small irons to remove the small wrinkles on quarters' lining.

Constructive characteristics:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: ~45 Kg.

Steam thermo-ironing machine

The presence of such device in this working station solves the problem of the small wrinkles on quarters' lining and, in any case, allows its tidy preparation.

Construction characteristics and performances:

- slide with two ironing devices, chosen among different shapes according to the destination of use;
- precise thermoregulation displayed by means of a feeler located on the ironing device;
- adjustable temperature: 0÷350°C;
- steam jet to make leather stretch out.

Technical characteristics:

- bulk dimensions: ~420x250x240 h mm;
- water consumption: ~2 litres/8 hours;
- installed power: 0,6÷0,7 Kw;
- net weight: ~3 Kg.

Control panel:

- on-off switch;
- temperature thermo-regulator.

Machine is in keeping with European safety rules.

5.11 Machine for the treatment with waxes and for upper polishing

Upper is now treated with chemical products like the carnauba wax and some others, characterizing the last finishing film, the more superficial one, also result of the so called auxiliary products which improve leather touch and coat.
Thanks to these treatments leather revives with its natural and real aspect, pointing out the shoe and its personality.
Machine has been described at paragraph 5.09; the only change is the kit of brushes manufactured with elements and materials which enhance the treatments just mentionned.

5.12 Stamping machine

This machine, belonging to the finishing department, is used for the hot stamping of drawings and trademarks, dry or by means of coloured tapes and of clichet on the cleaning heel seat lining or other parts.
Machine must be opportunely set, giving to the parameters: the values required by heel seat lining's material are the stamping times and the clichet temperature, in order to obtain as sharper as possible reproductions, with very precise edges.

Constructive characteristics:

- column version;
- stamping tape feeding with pneumatic working up to 250 mm;
- tape's maximum width 120 mm;
- rotary clichet holder with 4 stations;
- receptacle for used tape;
- working area: 120x180 mm.

Technical characteristics:

- bulk dimensions: ~900x700x1650 h mm;
- working power at 6 bar: 2300 N;
- working pressure: 1÷6 bar;
- air consumption: 25÷35 Nl/1';
- installed power: 0,35 Kw;
- net weight: 118÷123 Kg.

Control panel:

- general switch;
- start-stop switch;
- temperature with thermostat: 0÷150 °C;
- electronic timer;
- cycle restoration button;
- emergency switch.

5.13 Table

The operator in charge of this working station is asked to apply the cleaning heel seat lining prepared with the stamp of the trademark or of other type.
Heel seat lining must be therefore glued on one side.

Structural characteristics:

- bulk dimensions: 1400x800x800 h mm;
- net weight: ~35 Kg.

Roller gluing machine

The heel seat lining is glued with water adhesives, considered safer and eco-friendly.

Construction and structural characteristics:

- parts in contact with glue made of stainless steel/aluminium;
- glue basin made of Teflon for its resistance and easy cleaning;
- it can be easily dismantled for a quick cleaning;
- shaving glue measuring out system;
- speed variator;
- roller version for adhesives in water leak.

Technical characteristics:

- bulk dimensions: ~400x600x400 h mm;
- installed power: 0,12 Kw;
- electric feeding: 220V - 50 Hz – monophase
  380V – 50 Hz – threephase
- net weight: ~17 Kg.

5.14 Quarters' line re-moulding machine

This kind of machine has been designed to obtain the precise moulding of shoe line in the area of quarters, rearranging it identical to the one obtained immediately after the assembling on last.
The cycle of interventions is carried out first of all reactivating quarters by means of a hot part of last; the subsequent step is to transfer the shoe on an opportunely moulded frozen part of last, fastening the whole structuring of leather in this position

Construction characteristics:

- suitable rubber shapers;
- one hot part of last;
- one frozen part of last.

Technical characteristics:

- bulk dimensions: ~550x800x1700 h mm;
- absorbed power: ~0,6÷0,7 Kw;
- compressed air consumption at 6 bar: ~ Nl/cycle;
- net weight: ~180 Kg.

Electric panel:

- start-stop switch;
- working temperature sorter;
- pressure selection for shaping cushion.

Machine is in keeping with European safety rules.

5.15 Brushing machine

It is the last intervention which involves a treatment with a brush manufactured for this purpose: it can be defined as image brushing before the packaging.

Construction and structural characteristics:

- main engine with double shaft and 2 speeds;
- sucking engine;
- built-in whirlwind receptacle;
- one working station.

Technical characteristics:

- bulk dimensions: ~740x1120x2560 h mm;
- installed power: 2,6÷2,8 Kw;
- main engine: 500 o 1400 rounds/1';
- sucking engine: 1400 o 2800 rounds/1';
- net weight: 158÷164 Kg;
- noise: 7 dBA.

Control panel:

- start-stop switch;
- selection switch 2 speeds 900/1400 rounds;
- selection switch 2 speeds 1400/2800 rounds.

5.16 Table

The people in charge of this working station apply the laces where required, as well as the ornamental patterns before the packaging. This operation is delicate: the shoes contained in the boxes must arrive to the shop as they are at time of packaging.
Shoes must therefore be wrapped up in the tissue paper and protected in the toe and in the rear.

Constructive characteristics:

- bulk dimensions: ~1500x800x900 h mm;
- net weight: 45÷48 Kg.

5.17 Semifinished product's handling system

In the lasting department and in the bottom manufacturing and finishing department product's semifinished handling occurs by means of an "automatic conveyor with 2 chains and predetermined stop".
The system is formed by two chains with variable regulation and are equipped with trolleys, each one containing 2 pairs of shoes.

Construction characteristics:

- supplied with 2 chains with predetermined stop by the working stations;
- widened return curve couple;
- hydraulic moto-varitor/reducer unit;
- trolleys with 2 pairs arranged to hold boots, completed with chain-release devices;
- device to stop the trolleys on the working stations;
- motive power air plant, double with busway;
- shunt plug with fuses for busway;
- double lighting plant, on the two sides of the conveyor;
- compressed air double aerial pipes with quick coupling;

Technical characteristics:

- bulk dimensions: ~1200x26.000 mm;
- installed power: 4,5÷6,0 Kw;
- feeding circuit compressed air at 6÷8 bar;
- net weight: 1600÷1700 Kg;
- screw compressor, ~15÷20 Hp.

Electric panel:

- with double control;
- speed digital indicator.

The whole system is in keeping with European safety rules.

3. Lay-out L-1 Laboratory for physical-mechanical tests and fastness

NON CONDITIONED AIR

6.01 Arm-type clicking press

The different specimens required for the physical tests are obtained using proper small cutting dies, whose dimensions are defined by the I.U.F. rules. The cutting of such specimens is generally carried out by means of a rotary arm clicking press with automatic positioning for the use of cutting dies with different heights. The control buttons are synchro-temporized, to warrant a correct accident-prevention protection. Power adjustment is set by a potentiometer.

Technical characteristics:

- working area: ~600 x 300 mm;
- arm length: ~300 mm;
- maximum stroke: ~90 mm;
- available power: 7÷8 ton;
- bulk dimensions: ~600 x 700 x 1300÷1400 mm;
- electric power installed: 0,75÷1 KW;
- net weight with oil: 400÷500 Kg.

6.02 Sink

Water device for different uses.

Structural characteristics:

- stainless steel with left basin;
- single-control hot-cold water mixer;
- small furniture under the sink with 2 doors;
- bulk dimensions: 1200 x 850 x 900h mm.

6.03 Kubelka device

Such equipment is suitable for the assessment of the resistance of any type of leather during water absorption.
A round specimen is located inside the equipment which provided with a graded scale with increases equal to 0,1 cm^3.
It is filled with 75 cm^3 of distilled water, where the specimen is immerged. Afterwards, the equipment is turned upside down. After 2 and 24 hours, it is turned upside down again and at the end, after 1 minute drainage, the operator reads the volume of absorbed water directly from the scale.
The water absorption in % is the result of the relation between water volume in cm^3 and specimen's weight before being immerged, expressed in grams 100 times.
High absorption capacity leathers are located in the value zone ≥ 75%; those with a low capacity of absorption ≤ 15%.

Constructive characteristics:

- graded device made of treated glass;
- specimen maintenance top.

Technical characteristics:

- dimensions: 200 x 100 x 70 mm;
- weight: ~0,5 Kg.

Support table

Structural characteristics:

- C structure;
- fire-proof postformate laminated surface;
- small furniture with 4 wheels, dimensions 600 x 520 x 670 mm, with 3 drawers;
- bulk dimensions: 1200 x 750 x 900h mm.

6.04 Xenotest device

Lamps for quick ageing at artificial light.

Leather exposed to sunlight may become yellow, if white, or become clearer or darker, if coloured. Such changes of colour are due to different causes: fatliquoring, tannins, binders, and other unsuitable products. The Xenotest apparatus allows an accelerated ageing through the artificial light; it is made of spotlights which incorporates some specific Xeno vapours halogen lamps. Such lamps provide a light 4 times more powerful than any other lamp, with the same watts. Furthermore, they have a bright and natural colour reflexion with the chief characteristics of the daylight, providing 95 lumen per Watt.

Structural elements provided together with the lamps:

- general switch;
- start button;
- stop button;
- programmable automatic timer;
- thermo-regulator;
- cable and plug choke coil;
- circulation air fans.

Technical characteristics:

- bulk dimensions: 600 x 600 x 1800 mm;
- net weight: 80 Kg;
- lamp nominal power: ~0,36 KW;
- power absorbed with choke coil : ~0,385 KW;
- tenseness maximum difference: 50%;
- intensity of current: Ampere 3,5;
- power of light in lumen: 70;
- lumen supplied: 28.000;
- colour reflexion index: 85 RA-DIN 5035;
- colour temperature: tn. 6000°K
- operative hours length: ~6000 always with unchanged emission intensity.

The area submitted to complete radiations has a diameter of 400 mm and temperature's visualization and regulation allows the automatic activation of the cooling fans inside the cell.

All the test equipment is in keeping with the safety requirements provided by the European rules.

6.05 Device to test the resistance to repeated flexions

Also called "flexometer", the device has been designed to test leather behaviour at repeated flexions, in keeping with the rule IUP/20 and their length. The test is carried out on specimens whose dimensions are 70 x 45 mm, cut with American cutting dies normalized for flexometer. The result is an information concerning either leather behaviour in its tightness to deformation or the suitability of finishing compounds to give a certain flexibility and softness to the coat.

Folded specimens are fixed to 2 clamps: one fixed and the other one movable, moving back and forth a fold on the finished surface, while leather continues to flex. The test of resistance to flexion may be carried out at room ambient or at temperatures up to -30°C.
Tests should be carried out without being disturbed by heat sources; the equipment must therefore be designed locating the transmission unit outside and at the same time screened as regards the test booth. In this way, the whole specimens or the soles always keep a constant temperature; furthermore, the thermal drop is as quick as temperature recovery after door opening for the reading, once the programmed cycles have been reached.

For the test of the covering coat of finishing, folds without damages are 10.000, but they can be pushed to higher numbers, 100.000. Leather use purpose usually defines such value, which is not an absolute one but defined according to the destination of use.

Technical characteristics:

- bulk dimensions: 1500 x 750 x 1000h mm;
- working stations: 12;
- net weight: 200 Kg;
- digital stroke counter;
- start-stop-manual-reset buttons;
- electric power absorbed: at room's temperature 0,50 KW; at -20°C, 1,50 KW.

Cooling system:

- bearing furniture made of painted steel sheet on wheels;
- stainless steel 18/8 inside test booth with the following inner dimensions:
    - base bulk dimensions: 500 x 500 mm;
- upper door on self-aligned hinges with full tightness and big handle;
- inner insulation with double tightness;
- hermetic motocompressor with suitable power supplied, completed by related servomechanisms;
- inner light with 24V lamp;
- door's safety microswitch.

Control panel:

- safety magneto-thermal switch;
- START-STOP luminous button;
- internal light luminous button;
- luminous button for the MANUAL positioning of the sole-holder unit;
- digital programmer-indicator of the test temperature;
- digital cycle counter with 6 digits.

The test is carried out in parallel with the exposition of the standard blues' textile grade. The evaluation term is grade's blue strip vibrating at the same exposition.

The equipment is in keeping with the safety requirements provided by the European rules.

6.06 Walkmeter

It is a machine designed and realized to carry out tests of repeated flexions on most of types of shoes, to ascertain the resistance of bottoms, insole included, in correspondence of the dimension of maximum last's extension related to instep circumference (i.e. the foot section which involves the five metatarsal heads).
Flexions are 60 cycles per minute, with 45° flexion angle.

Construction characteristics:

- stainless steel bearing structure of the plate, mounted on mobile wheels and treated with paints resistant to acids;
- access door to booth with wide window;
- shoe flexion booth made of stainless steel 18/8, equipped with sample-foot size 41;

- booth internal lighting;
- pressure system on foot activated with pneumatic energy safeguarded by anti-condensation filter.

Technical characteristics:

- bulk dimensions: 900 x 800 x 2000 mm (+700 x 800 mm space occupied by the PC);
- net weight: 400 Kg;
- transformer proportionate to engine power;
- installed power: 3,5 KW (threephase);
- compressed air pressure: 6 bar.

Control panel:

- safety magneto-thermal switch;
- engine thermal protection device;
- manual lighted start-stop switches;
- foot rise switch;
- lighted switch of internal light;
- lighted switch of leg manual positioning;
- pneumatic pressure regulator;
- digital regulator at 6 digits;
- modal selector switch.

A complete management of the test results is also available.

Safety rules in keeping with the international standards.

6.07 Heels' Resistance Test to Repeated Impact

This method allows to test middle and high heels' resistance to break due to repeated small impacts on the fore-part and in the area of the toe of shoe bottom components.
The test also concerns heel and sole's tightness.
The test method is marked by the mark: BS 5135;4.9

The test occurs by means of an electromechanical movement operating on the sole/heel fastening system, as well as on the stand of heel itself, thanks to a stainless steel impact head.
Head's impact frequency is 60 times per minute.
Heel is fixed through fusion on a surface made of special alloy; the standard BS 5135;4.9 provides the way to obtain and respect the fusion procedure, included the materials involved.

The test may be finished once the number of cycles considered as the most suitable to the type of samples tested has been redefined or it can be extended up to the moment in which heel breaks, when the system stops automatically.

Constructive characteristics:

- stainless steel booth;
- inclined heel support unit.

Technical characteristics:

- installed power, 0,25 KW (feeding: 220/50Hz)
- dimensions 600 x 600 x 800h mm;
- net weight: 50 Kg.

Safety rules in keeping with the international standards.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture dimensions 900 x 520 x 670 mm, with two shutters;
- bulk dimensions: 900 x 750 x 900h mm.

6.08 Abrasion device with rotary drum

This device – normalized abrasion device – is used to carry out removal tests through friction with standardized sandpaper of the most superficial material of rubber components, polyurethane and similar materials used in the footwear industry.
Tests are carried out in accordance with the methods ISO EN 344 - 4649 - UNI 9185 - UNI 8615 - DIN 53516 - BS 903:A9 method A.

Completed with consumption materials:

- normalized abrasive paper according to the method DIN 53516;
- normalized sample rubber according to the method DIN 53516;
- normalized bi-adhesive tape according to the method DIN 53516;
- cut device for resistance to abrasion.

Constructive characteristics:

- bearing bedplate in sheet steel, acid-resistant painted;
- double movement unit with suitable ratio-motors;
- horizontally pivoted sample holder unit with support and drum automatic detachment;
- specimens rotation system;
- stainless steel 18/8 receptacle.

Technical characteristics:

- installed power, 0,4 KW (feeding: 220/50Hz);
- dimensions 1100 x 500 x 500h mm;
- net weight: 55 Kg.

Control panel:

- magneto-thermal safety life- saving switch;
- START-STOP-MANUAL button;
- rotation START-STOP switch;
- programmable digital cycle-counter.

Safety rules in keeping with the international standards.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 3 drawers;
- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 1 shutter;
- bulk dimensions: 1500 x 750 x 900h mm.

6.09 Wiping resistance test device

The instrument, also called Veslic, is suitable for the assessment of colour fastness to leather manufacturing and use, if rubbed.
The test is carried out according to the rules IUF: 450, 454, 458.
A considerable number of colour and finishing fastness' determinations may be carried out.
The leather sample, whose dimensions are 140 x 60 mm, is fixed to 2 pliers, on the case of the instrument, exposing it to a 10% tenseness.
Upon it, there's a vertical rod supplied with the rubbing felt at its base, 15 x 15 mm, which can be wet or dry, depending on the test conditions.
A 500 g load is applied to the rod, lent on the specimen moved by a slide and taut by 21 pliers.
The load can reach the 1000 g.
For wet tests: 10, 50, 150 rubbing cycles which become respectively 150, 300, 1000 in case of dry tests.
Once the test has been concluded, the result occurs basing on the international scale of greys' measures, either for leather colour variation, or for the colouring taken by the felt rubbed on leather.

Constructive characteristics:

- small bearing base made of steel sheet, duly acid-resistant painted, with epoxy resin;
- movement unit with ratio-motor, permanent greasing;
- stainless steel 18/8 horizontal platform with clamps for samples (n. 1 according to I.U.F. rules n. 4, according to changes T.N.O. and Pirmasens);
- samples' 10% stretching system;
- guided felt holder for felts 15 x 15 mm with load 500 g;
- supplementary weights for felt holders to get 1000 g;
- movement space: 50 mm.

Technical characteristics:

- absorbed electric power: 0,02 KW (feeding: 220/50Hz);
- bulk dimensions: 400 x 560 x 500h mm;
- net weight: 25 Kg;
- minimum cycles' number: 40.

Control panel con:

- magneto-thermal safety switch;
- START-STOP Big Touch buttons;
- digital programmer-cycle's counter, 4 digits.

Accessories:

- white standardized felts for Veslic device;
- greys' normalized scale ISO 105-A03 for Veslic device;
- American type cutting die 120 x 50 mm with single cutting station for Veslic device.

The instrument is in keeping with the different safety requirements of the European set of rules.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 600 x 520 x 670 mm, with 3 drawers;
- bulk dimensions: 600 x 520 x 670 mm

6.10 Lace tester

The measure of lace's resistance to abrasion is carried out by means of an instrument, according to the test method BS 5131:3.6.
The number of frictions required to obtain sample's break is automatically recorded.

Constructive characteristics:

- steel sheet bearing frame, duly acid-resistant painted in epoxy resin;
- movement unit with suitable power and ratio-motor;
- clamps and counterpoises by law.

Technical characteristics:

- electric power absorbed: 0,3 KW (feeding: 220/50Hz);
- bulk dimensions: 400 x 500 x 400h mm;
- net weight: 20 Kg.

Control panel with:

- magneto-thermal safety switch;
- luminous START-STOP switches;
- electronic cycles' counter wit 6 digits.

The instrument is in keeping with the different safety requirements of the European set of rules.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 3 drawers;
- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 1 shutter;
- bulk dimensions: 600 x 520 x 670 mm

6.11 Thermostatic Lab Heat setter

The thermostatic lab heat setter is the air forced circulation. Temperature regulation and registration are managed by a digital microprocessor instrument.

Construction characteristics:

- stainless steel 18/8 external frame with suitable thickness;
- small door with handle;
- stainless steel 18/8 inner cell with 18/8 stainless steel perforated working surfaces;
- high power filament resistances;
- high efficiency ventilation for air forced circulation stoves.

Technical characteristics:

- absorbed electric power: 2,5 KW (feeding: 220/50Hz monophase);
- internal bulk dimensions: 400 x 400 x 600h mm;
- external bulk dimensions: 660 x 550 x 1070h mm;
- net weight: 20 Kg.
- temperature field: from T ambient to + 250°C max;
- internal room with air laminar circulation and heat uniform diffusion by means of the lateral connective spaces;

Control panel:

- start-stop button;
- digital thermo-regulator;
- spy lamp.

Accessories:

- safety timer for over-temperatures;
- timer with automatic stop;
- floor support.

In keeping with the international safety rules.

Support table

See previous paragraph.

6.12 Instrument to measure shoe toes' resistance to impact

This device provides all the test conditions to measure the resistance to impact of safety shoes' toes and steel tips, specified in all published national standards.
Fall height and weight may change and the different hooking heads and fastening devices may be changed.
Tests are carried out according to the methods: EN 344; BS-953; BS-1870; DIN-4843; STD-409M.

Constructive characteristics:

- stainless steel load plane with suitable thickness;
- stainless steel protection booth duly painted;
- stainless steel head treated with normalized toe;
- head lifting motoreduction system;
- lever release system with safety device;
- protection trolley with safety gudgeon pin.

Technical characteristics:

- absorbed electric power: 0,4 KW (feeding: 220/50Hz monophase);
- bulk dimensions: 700 x 700 x 2000h mm;
- net weight: 100 Kg.

Switch panel

- magneto-thermal main switch;
- up and down switches;
- inserted warning light.

In keeping with the international safety rules.

6.13 Shoe Sliding Test Automatic Device

It is used to measure the sliding resistance between the sole and the floor.
Also called "Slidingmeter", it is used according to the method defined by: CEN / TC161 / WG3 N22 (except changes)

It is suitable even with nonslip floors.

Construction characteristics and supplying:

- stainless steel 18/8 surface;
- support for non conventional surfaces;
- normalized load foot;
- A Class load cell;
- load acquisition card;
- suitable ratio-motor;
- protection booth;
- I/O multichannel card;
- application and fastening quick system;
- instant load value survey system.

Analysis management software including of:

- lifting pneumatic control;
- translation engine control;
- detected load acquisition;
- graphic visualization of detected friction's middle, minimum and maximum strength;
- friction coefficient computation.

Technical characteristics:

- installed electric power 3,3 KW (feeding: 220/50Hz monophase);
- compressed air feeding at 2-3 bar;
- bulk dimensions: 900 x 800 x 2000h mm;
- net weight: 400 Kg.

In keeping with the international safety rules.

6.14 Deepfreeze

It is used to lead samples to the low temperatures.

Technical and structural characteristics:

- minimum temperature: 18°C;
- capacity: 125 litres;
- reversible door;
- bulk dimensions: 550 x 600 x 850h mm;

it is integrated into a bench structure with fridge compartment with the following structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 600 x 520 x 670 mm, with 3 drawers;
- bulk dimensions: 1800 x 750 x 900h mm.

6.15 Thickness gauge

In many phases of the leather manufacturing cycle, it is necessary to measure semifinished product's thickness, in particular during splitting and shaving, for the right and precise adjustment of machines in charge of such operations.
In leather trade, the final thicknesses, required by the customers, are very important.
In lab physical tests, thickness detection is necessary for the correct interpretation of the results to be achieved.
In the leather manufacturing phases, a precision of 0,1 mm is sufficient; on the contrary, in the lab the required leeway must not overcome 0,01 mm.
The pressure of the members on leather surface is of 5 N/cm^2.

The test methods to be used are IUP/4; IUP/5; ISO; UNI ISO; UNI GOMMA.

Constructive characteristics:

- stainless steel bearing frame painted with acid-resistant epoxy resin;
- measurement base with weight and head by law.

Technical characteristics:

- field of measurement: 0÷40 mm;
- reading precision: 0,01 mm;
- bulk dimensions: 300 x 250 x 400 mm;
- net weight: ~10 Kg;
- absorbed electric power: 0,10 KW.

Control panel:

- main switch;
- digital instrument for the visualization with automatic setting cycle and possibility of configuration with alternative metric systems.

The instrument is in keeping with the European safety rules.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 1 shutter;
- bulk dimensions: 900 x 750 x 900h mm.

6.16 Electronic Dynamometer

The measurement of the resistance to traction and to stretch enables, at the end of the productive process, the detection of significant parameters on leather structural conditions at the end of the productive process.
The treatments during the productive cycle and the differences among hides and skins influence the values of such parameters.
Specimens have fixed dimensions, according to the type of leather, for example 100 x 20 mm; they are fixed by dynamometer's clamps; tests are carried out with constant pliers' separation speed of 100 mm per minute
This test provides the following values:
Maximum strength = the maximum strength measured by the dynamometer at time of break, indicated in daN.

Resistance to traction = quotient between maximum strength and sample's starting section in daN/cm^2; it is therefore necessary to measure material's thickness before the test.
Stretching to break = sample's length variation measured at time of break, in connection with the starting measure in %.
Length strength-variation diagram = registering of traction's whole progress, used strength and length variation.

Computation:
daN/cm^2 resistance to traction = maximum strength in daN divided by the starting section in cm^2 x 100.
% stretching to break = mm length at time of break minus mm the measured starting length divided by the measured starting length.
Automatic stretching measurement is carried out by the suitable graphic registration device, detecting either the percentage stretching on constant load or the percentage stretching at time of break.

A chromium leather must provide a resistance to traction included between 250÷300 daN/cm^2 as well as a stretching to break equal to 60÷70%.

Prepared according to the international rules: IUP 6; IUP 8; ISO 3377; AFNOR T46002; ASTM 2212; BS-3144 method 6; S 172M

Constructive characteristics:

- stainless steel taking clamps;
- acid-resistant sheet steel support;
- traction ratio-motor unit;
- 300 daN load electronic cell; A class and digital gauge with memory, equipped with threshold from min to max;
- applied strength digital gauge with memory: N;
- traction speed digital gauge: precision 1 mm/min;
- stretching digital gauge: precision 1 mm/min;
- self tare.

Technical characteristics:

- bulk dimensions: 800 x 480 x 1500h mm;
- (equipped with PC, keyboard, monitor: 650 x 650 x 500 mm; not included)
- adjustable traction speed: 50÷500 mm/1';
- net weight: 100 Kg;
- installed power: 0,50 KW.

Control panel:

- uphill and downhill buttons;
- speed selector: two fixed and one adjustable;
- speed regulator;
- fixed speeds regulation trimmer;
- interface for recorder.

Accessories:

- personal computer and management software;
- normalized cutting dies;
- certified load cells: 5-10-50-100-500-1000-1500 Kg.

Additional accessories:

- to carry out adhesion resistance test of leather or synthetic material's finishing according to the method: ISO-11644; IUF-470;
- to check heel attachment solidity to sole, in particular on lady's shoe with middle and high heel. The method: EN 12785;
- to test tear resistance of the seam stitches, according to the method: UNI 10606.

The whole equipment is in keeping with the safety requisites provided by the European set of rules as regards the mechanical, electrical and electromagnetic aspects.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 600 x 520 x 670 mm, with 3 drawers;
- bulk dimensions: 1800 x 750 x 900h mm.

6.17 Digital lastometer

The lastometer is used to detect the measurement of stretching out, of resistance to burst or leather grain crack. It is therefore possible to detect which kind of chapping/crack originates the stretching out and if the finishing covering layer or the grain become strained.
The lastometer is equipped with a leather disc with a free surface of 25 mm. A steel sphere, diameter 6.25 mm, is pushed up till when one of the above mentioned events occurs.
The pressure is registered in N/cm^2; swell height in mm.

This test is very indicative for upper leathers, throwing into relief the suitability of the material used for upper lasting. The maximum mechanical strain of leather occurs in this phase of footwear manufacturing, with great dilatations and contractions. Grain break occurs at stretching values equal to 20÷25%.

The device is in keeping with IUP 9 rules.

Constructive characteristics:

- sheet steel bearing frame with suitable thickness, painted with exopy acid-resistant resin;
- suitable penetration unit with 18/8 stainless steel sphere;
- A class loading cell, certified;
- sample stretching out gauge by means of digital system – precision equal to 0,1 mm.

Technical characteristics:

- bulk dimensions: 400 x 400÷450 x 600÷650 mm;
- net weight: 30-33 Kg;
- electric absorbed power: 0,30 KW.

Control panel:

- safety magneto-thermal switch;
- NET indicator lamp;
- ASCENT switch;
- DESCENT switch;
- digital device to display load with Pich-Hold;
- digital device to display stretching;
- output for graphic recorder.

The electronic lastometer is in keeping with the European safety rules.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 3 drawers;

- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 1 shutter;
- bulk dimensions: 900 x 750 x 900h mm.

6.18 Flexometer for soles - Bennewart

The Bennewart flexometer is used to check the number of flexions borne by a leather sole before its giving in.
The test is also carried out on simple samples.
The test method is: ISO EN 344; other ones are DIN; ASTM; UNI.

Constructive characteristics:

- control booth realized with sheet steel, acid-resistant painted;
- self-lubricating ratio-motor unit with suitable power;
- movement drive unit on self-centring screened rolling bearings.

Flexometer unit equipped as follows:

- steel small base;
- upper and lower pliers, support pole and steel screws;
- burnished steel supports (optional stainless);
- self-centering screened bearings with anti-condensation steel.

Technical characteristics:

- bulk dimensions: 800 x 800 x 600h mm;
- net weight: 90 Kg;
- installed power: 0,7 KW (feeding 380/50Hz).

Control panel:

- general switch;
- switch for the automatic axle of clamps;
- electronic adjustable impulse counter with 6 digits and automatic zeroing.

The flexometer is in keeping with the European safety rules.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 600 x 520 x 670 mm, with 3 drawers;
- bulk dimensions: 1200 x 900 x 900h mm.

6.19 Sole-Upper Adhesion Test

This kind of device enables to check sole adhesion on toe, measuring the strength required to begin its detachment from upper in case of cemented manufacture and of injected sole.

The test uses the method described in BS 5131:5.1.

Constructive characteristics:

- acid-resistant sheet steel frame;
- adjustable foot support surface provided with fast locking device clamps;
- high precision A class loading cell.

Technical characteristics:

- bulk dimensions: 500 x 350 x 400h mm;
- net weight: 30 Kg;
- installed electric power: 0,08 KW (feeding 220/50Hz).

Control panel:

- general magneto-thermal switch;
- ON switch;
- digital device with 6 digits to display the load with: programming of the maximum load required; pick-hold; reset switch; selection of sensibility; selection of decimals; safety planning.

The equipment is in keeping with the European safety rules.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- two small pieces of furniture with 4 wheel,, dimensions 600 x 520 x 670 mm, with 1 shutter;
- bulk dimensions: 1800 x 900 x 900h mm.

6.20 Sole Leather Impermeability

Calculation method with the permeameter for sole leather; it enables the measurement of the time required to make water penetrate up to the flesh side, while the material undergoes a constant bending and the grain side touches a wet plug, with a fitful pressure like the one occurring during the use.

Method: IUP 11 (other ones; ISO; UNI; DIN …).

Constructive characteristics:

- epoxy acid-resistant sheet steel bearing small base;
- movement unit with ratio-motor and permanent greasing;
- pressure and flexion wheel with conductive metal;
- 18/8 stainless steel clamps;
- contact platform with calibrated pressure;
- container for liquids.

Technical characteristics:

- bulk dimensions: 500 x 700 x 400h mm;
- net weight: 35 Kg;
- installed electric power: 0,2 KW.

Control panel:

- safety magneto-thermal switch;
- START-STOP Big-Touch switches;
- digital cycle-counter/programmer wit 4 digits;
- optical-acoustic system for cycle-end signalling;
- digital cycle-counter with programmable microprocessor;
- digital Acquatest System to detect water passage.

The equipment is in keeping with the European safety rules.

Support table

See previous paragraph.

6.21 PC Station

Data-processing and storing up unit.

Technical characteristics:

- last-generation Personal Computer to store up data; equipped with monitor, keyboard, mouse and ink-jet printer.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- two small pieces of furniture with 4 wheel,, dimensions 600 x 520 x 670 mm, with 3 drawers;
- bulk dimensions: 1500 x 750 x 900h mm.

6.22 Table

Support for different services.

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheel,, dimensions 600 x 520 x 670 mm, with 3 drawers;
- bulk dimensions: 1500 x 750 x 900h mm.

6.23 Electronic Device for H_2O Dynamic Impermeability

The equipment enables to determinate the time passage of the liquid through the sample. The Acquatest patented system immediately warns with an acoustic signal the passage of the first microdrop, displaying sample's impermeability effective time.

Constructive characteristics:

- inner bearing surface, in treated structural steel, acid-resistant painted;
- 18/8 stainless steel test unit, 4 working stations;
- bending width regulation system in keeping with the international rules;
- container for samples which can be raised to facilitate sample's insertion;
- suitable ratio-motor unit;
- extractable liquid-holder small basin, stainless steel 18/8;
- 18/8 stainless steel detector.

Technical characteristics:

- bulk dimensions: 600 x 800 x 600h mm;
- net weight: 50 Kg;
- absorbed power: 0,4 KW (feeding 220V/50Hz).

Control panel:

- safety magneto-thermal switch;

- START-STOP-MANUAL switches;
- n°4 Acquatest systems;
- n°4 digital timers;
- n°4 acoustic warning alarms;
- programmable digital cycle-counter with 6 digits.

The equipment is in keeping with the European safety rules.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- 2 small pieces of furniture with 4 wheel,, dimensions 600 x 520 x 670 mm, with 1 shutter;
- bulk dimensions: 1800 x 900 x 900h mm.

6.24 Steam Permeability Test Device

This test determines the quantity of water, steam-shaped passing through leather, when on one side of leather air is saturated with humidity and on the other side air is completely dry. Like air permeability, steam permeability measures leather porosity index, and therefore the hygienic quality during use.

Test methods IUP/15; EN 344 item 5.13 others.

Constructive characteristics:

- sheet steel bearing frame with suitable thickness, acid-resistant, epoxy;
- ventilation unit in keeping with the international rules with Duralumin blades;
- Duralumin bottle holder unit equipped with spring for bottle's release;
- unit with adjustable friction for bottle's collection, once the test has been finished;
- movement unit with ratio-motor, in oil bath.

Technical characteristics:

- bulk dimensions: 500 x 600÷700 x 500÷550h mm;
- working stations: 6;
- net weight: 25÷28 Kg;
- electric power: 0,40 KW (feeding 220V/50Hz).

Control panel:

- safety magneto-thermal switch;
- START-STOP luminous buttons;
- multiscale: 1 self-programmable timer.

Accessories:

- normalized American-type cutting die, diameter 40 mm, specific of this kind of device.

The machine is in keeping with the European safety rules.

Support table

See previous paragraph.

6.25 Determination of Leather Insulating Power

The measurements of leather resistance to electric conduction (mass resistivity) provide an idea of the possible electrostatic load. It is measured by a digital voltmeter. The presence of a low conductivity may be detected, for example, when it is difficult to remove the trimming dust and fibre particles from leather. The rules for safety shoes establish that the mass resistivity must not overcome 10^8 Ohm.

The device used for such determination is equipped with 3 metal feelers. The measurement of the electric resistance carried out on antistatic and conductive shoes is in keeping with the standard EN 344 (BS 1050, item A 4.15).

Constructive characteristics:

- test booth made of steel treated with acid-resistant paints and safety door;
- support system for the metallic feeler;
- spheres with 5mm diameter and total mass 4kg.

Technical characteristics:

- bulk dimensions: 600 x 400 x 500h mm;
- net weight: 30 Kg;
- installed electric power: 0,07 KW.

Control panel:

- safety magneto-thermal switch;
- digital voltmeter;
- dielectric resistance recording system.

In keeping with the safety requisites required by the European set of rules.

Support table

Structural characteristics:

- C structure;
- postformate fireproof laminated surface;
- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 3 drawers;
- small furniture with 4 wheels, dimensions 430 x 520 x 670 mm, with 1 shutter;
- bulk dimensions: 900 x 900 x 900h mm.

6.26 Table Technical Balance

Precision electronic balance with inner gauging, to be placed on a table, whose dimensions are 1200 x 800 x 800 mm, with the following technical characteristics:

capacity:	6200 g
precision:	0,01 g
repeatability:	≤ 0,001 g
linearity:	± 0,02 g
answering time (s):	1,5 - 2,5
room temperature:	5÷40 °C
thermal sensibility coefficient:	± 3 (ppm/°C) (10-30 °C)
scale pan dimensions:	170 x 180 mm
dimensions:	190 x 317 x 78h mm
weight:	4,6 Kg
display	LCD backlit
consumption:	12V1A
I/O data:	RS-232C
incoming power:	100-250VAC, 47-63Hz, 0,3A / in uscita: 12VDC, 1A
other functions and characteristics:	WindowsDirect, CAL-watch, PSC, Conformity GLP/NBF/ISO, analogical display, display in %, PCS, measurement of the specific weight S/W

The device is equipped with anti-shock system.

6.27 Precision analytic balance

The electronic apparatus with inner gauging enables small routine operations like net/total reset, the percentage weighing, selectable measurement units, the count of the pieces with very short measurement times. Many aspects concerning the functionality:

- loading cell with electromagnetic compensation;
- calibration through integrated reference weight;
- equipped with screen;
- a RS 232 interface for the connection to the printer (not matrix-type);
- motorized inner gauging weight, that means maximum precision of the weighing;
- CE validation.

Technical characteristics:

capacity:	220 g
precision:	0,1 mg
repeatability:	≤ 0,1 mg
linearity:	± 0,2 mg
answering time (s):	3
room temperature:	5÷40 °C
thermal sensibility coefficient:	± 2 (ppm/°C) (10-30 °C)
scale pan dimensions:	diam. 80 mm
dimensions:	220 x 330 x 310h mm
weight:	7 Kg
display	LCD retroilluminato
consumption:	7VA
I/O data:	RS-232C
incoming power:	100-250VAC, 47-63Hz, 0,3A / in uscita: 12VDC, 1A
other functions and characteristics:	WindowsDirect, Conformity GLP/NBF/ISO, analogical display, display in %, PCS, measurement of the specific weight S/W

Support table

Structural characteristics:

- double frame and anti-vibrating supports in ethylene elastomer;
- marble plate;
- bulk dimensions: 1200 x 750 x 750h mm.

6.28 Cabinet

Collection of tests documentation, analyses relevance cards and others.

Structural characteristics:

- fire-resistant;
- 2 shutters, 8 shelves;
- bulk dimensions: 1200 x 520 x 2000h mm.

6.29 Sink

For different uses.

Structural characteristics:

- stainless steel basin;
- mono-control hot/cold water mixer;
- small furniture under the sink with 1 shutter;
- bulk dimensions: 850 x 600 x 900h mm.

APPENDIX 3: Recommendations on infrastructures

The following lines provide some recommendations/indications concerning the infrastructures in which the centre will be located.

Spaces

It is necessary to find a room, at least 400-450 m^2 , to locate the prototyping/sampling area (if provided) and at least as many in the offices/services area: such spaces should include, besides the plants and services generally provided, at least the following areas:

- hall / reception
- CAD / CAM area
- pattern-making peripherals area
- prototyping peripherals area
- classes (one or more than one)
- chemical/physical analyses lab
- direction/administration area
- prototyping/pre-series production and sampling area
- storehouse

Plants

The centre must be equipped with a switchboard with one or more incoming lines, fax and answering machine; offices' electric plant must have a separate line, possibly with an uninterruptable power supply; the power plant for the prototyping/sampling area must be suitable to machineries. This area must furthermore be equipped with a suitable compressed air unit.

Data net

All the CAD stations and the computers are linked one another (high-speed ETHERNET, at least 100 mbit / sec) as well as PC or NC enabling machines' functioning (a separate net is advisable). Cabled nets are better (if there aren't particular binds or structural difficulties) than the wireless ones. The different net points are managed by one or more net *switches* with suitable performances and dimensions. The external access to internet is warranted by a *firewall router*. The data line towards outside should warrant a band width of alt least 1 – 1,5 mbit / sec, with symmetric connection (DSL).

Different equipments

For the training activities, at least a overhead projector and a LCD projector are suggested, to be connected to a PC. A microphone plant must not to be excluded, with regard to room's dimensions and capacity.

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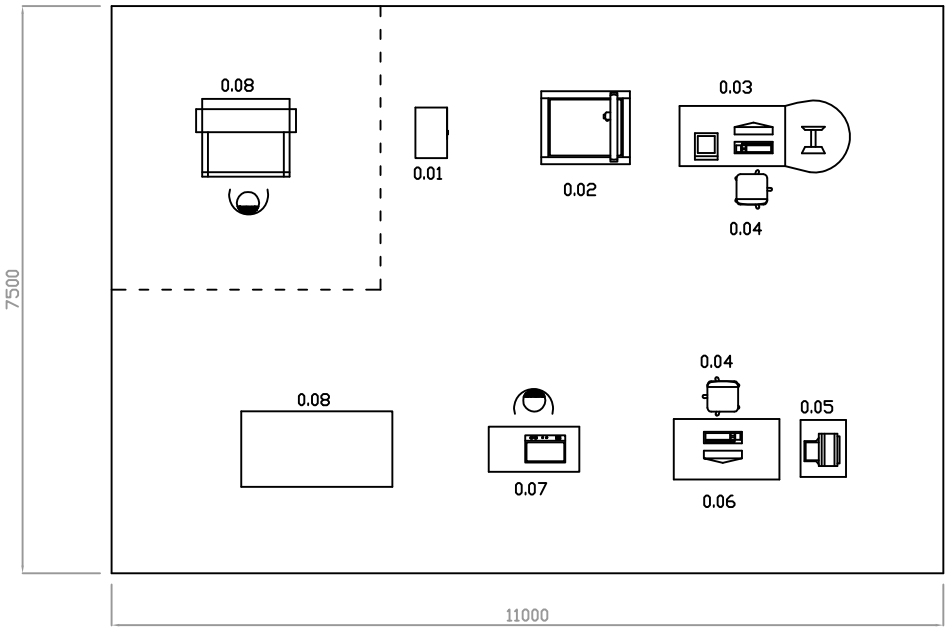
Annex 2

Collection of drawings

CAD 2D+3D Pattern-making



Area 83 sqm

Scale 1:100

DRAWING N°
Layout M-3

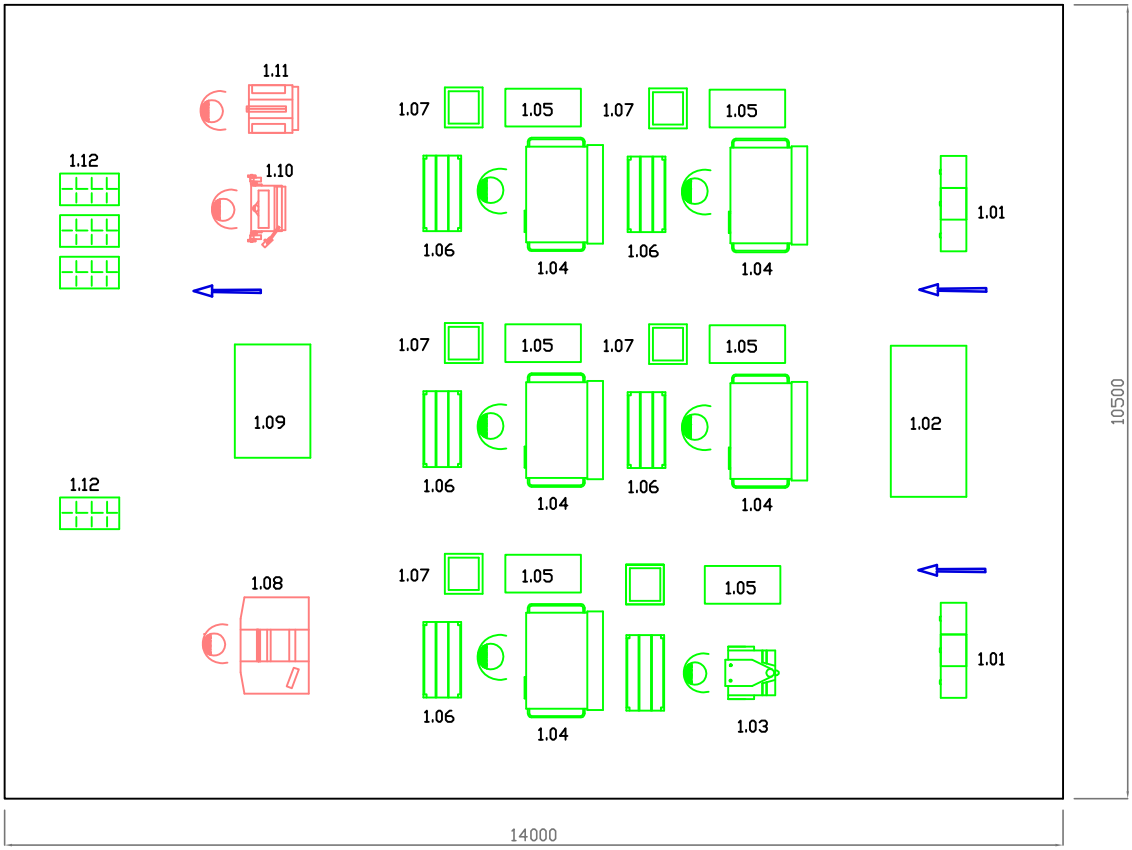
PISIE

Via Matteotti, 4/a
27029 Vigevano (PV) Italia
Tel. +39.0381.70137

CAD 2D+3D Pattern-making
Complete Module

DATE	DRAWER	VERIF.	SCALE
20.DEC.2010	AF	ATR	1 : 100

100 TRADITIONAL Cutting dept.



Area 150 sqm

Scale 1:100

DRAWING N°
Layout A-1a

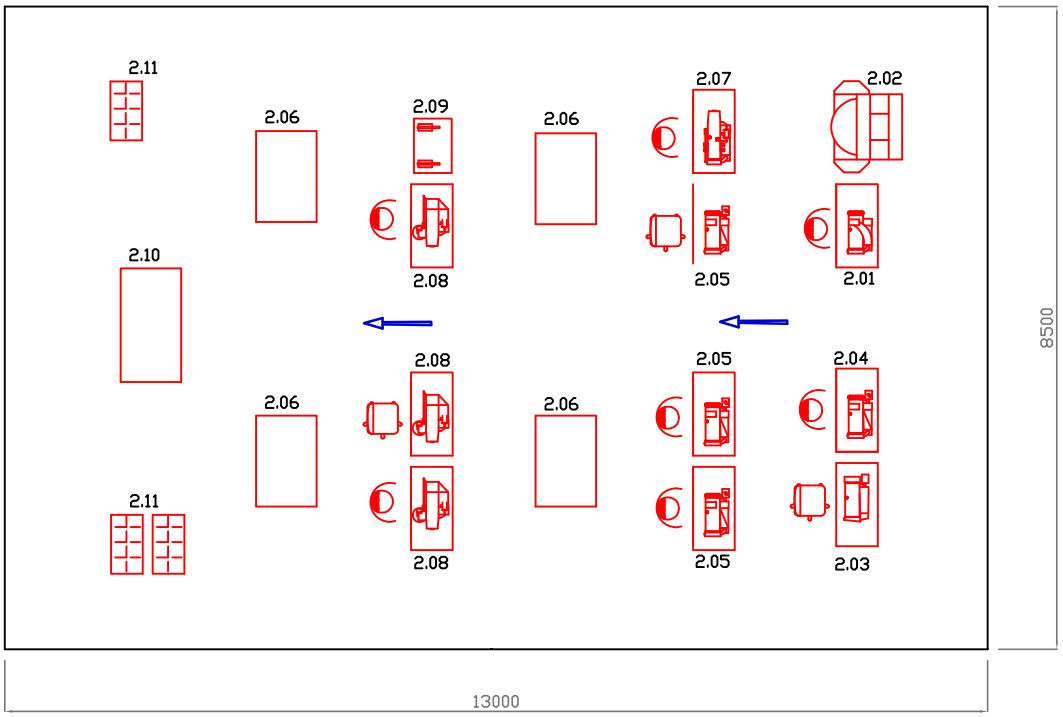
PISIE

Via Matteotti, 4/a
27029 Vigevano (PV) Italia
Tel. +39.0381.70137

Cutting department
Module 100 pairs Traditional

DATE	DRAWER	VERIF.	SCALE
20.DEC.2010	AF	ATR	1 : 100

100 TRADITIONAL Closing dept.



Area 110 sqm

Scale 1:100

DRAWING N°
Layout A–1b

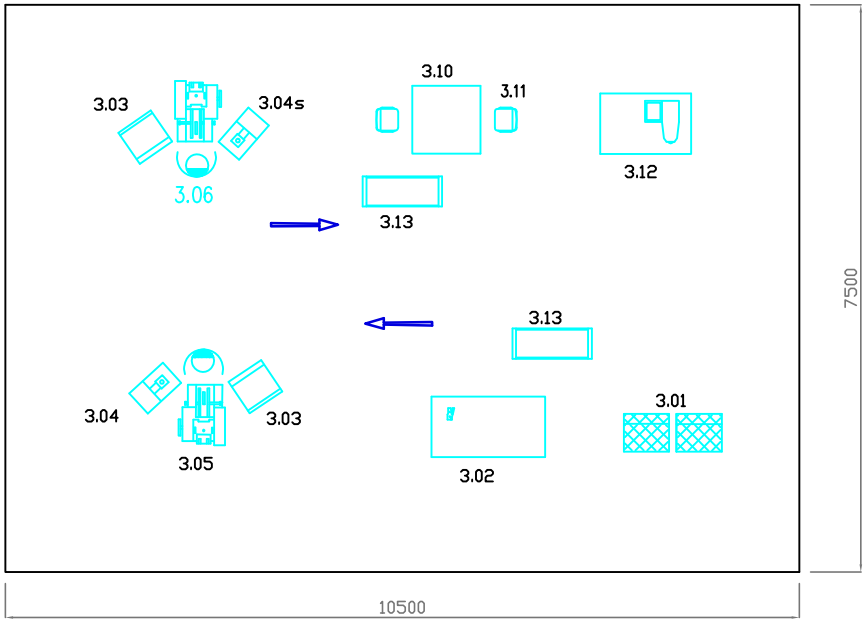
PISIE

Via Matteotti, 4/a
27029 Vigevano (PV) Italia
Tel. +39.0381.70137

Closing department
Module 100 pairs Traditional

DATE	DRAWER	VERIF.	SCALE
20.DEC.2010	AF	ATR	1 : 100

100 TRADITIONAL Lasting dept.

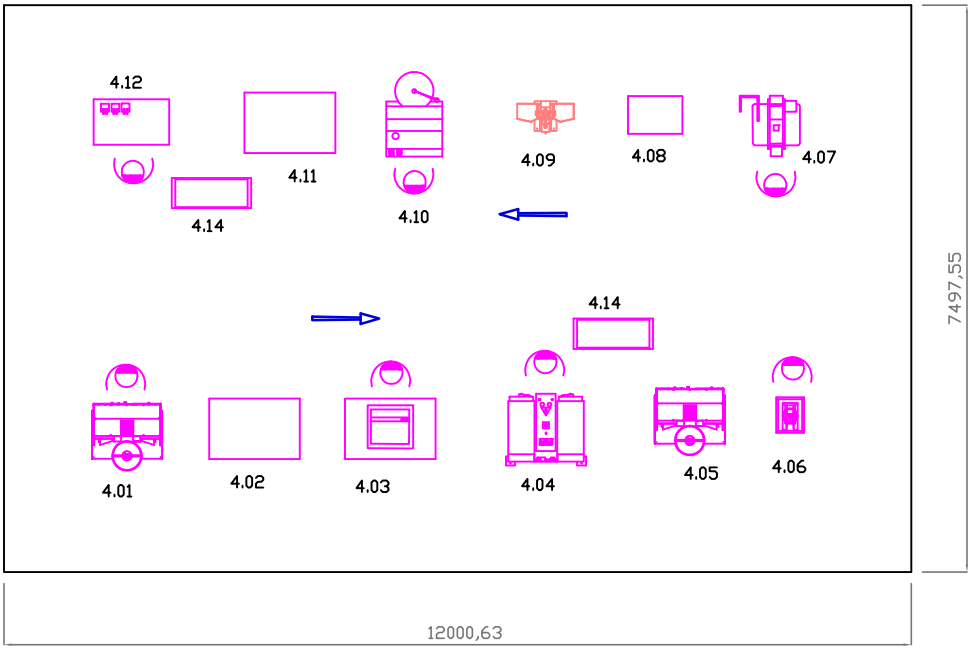


Area 80 sqm

Scale 1:100

DRAWING N° Layout A–1c	Lasting department Module 100 pairs Traditional		
PISIE Via Matteotti, 4/a 27029 Vigevano (PV) Italia Tel. +39.0381.70137	DATE 20.DEC.2010	DRAWER AF	VERIF. ATR	SCALE 1 : 100

100 TRADITIONAL Finishing dept.



Superficie 90 mq

Scala 1:100

DRAWING N°
Layout A-1d

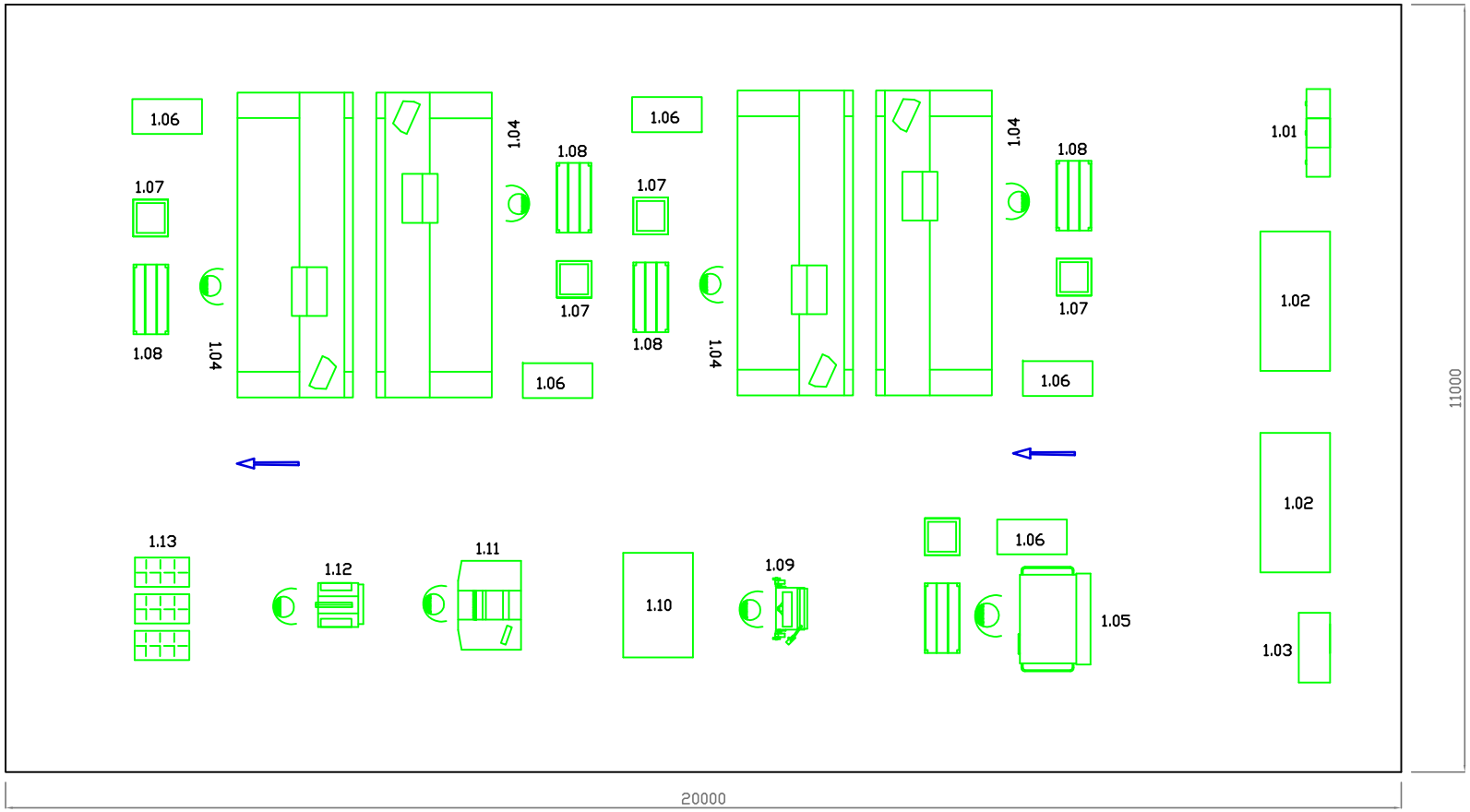
PISIE

Via Matteotti, 4/a
27029 Vigevano (PV) Italia
Tel. +39.0381.70137

Finishing department
Module 100 pairs Traditional

DATE	DRAWER	VERIF.	SCALE
20.DEC.2010	AF	ATR	1 : 100

500-ADVANCED Cutting dept.



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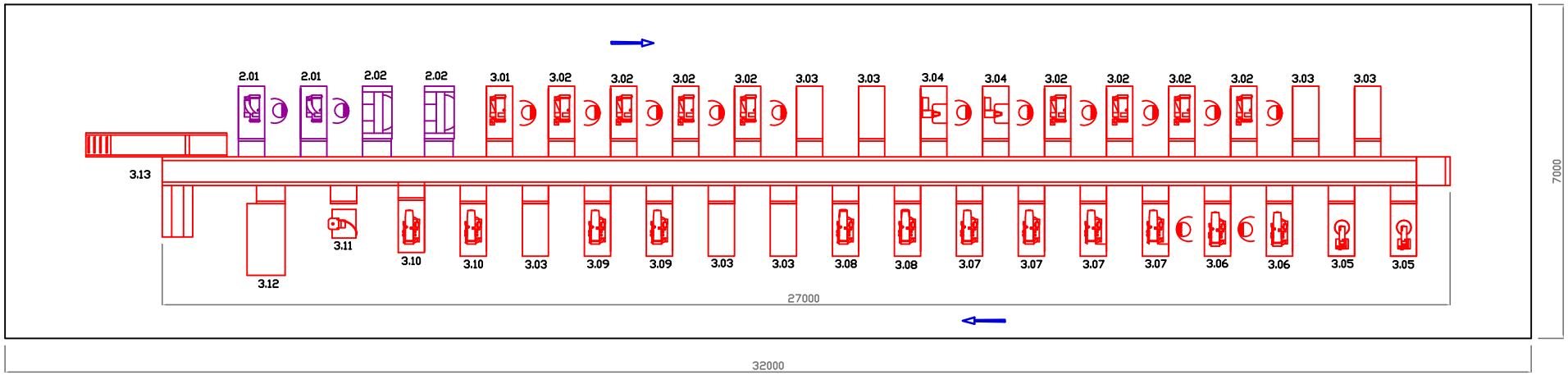
Scale 1:100

DRAWING N° Layout B-2a	Cutting department Module 500 pairs Advanced
PISIE Via Matteotti, 4/a 27029 Vigevano (PV) Italia Tel. +39.0381.70137	DATE 20.DEC.2010 · DRAWER AF · VERIF. ATR · SCALE 1 : 100

500-ADVANCED Closing dept.

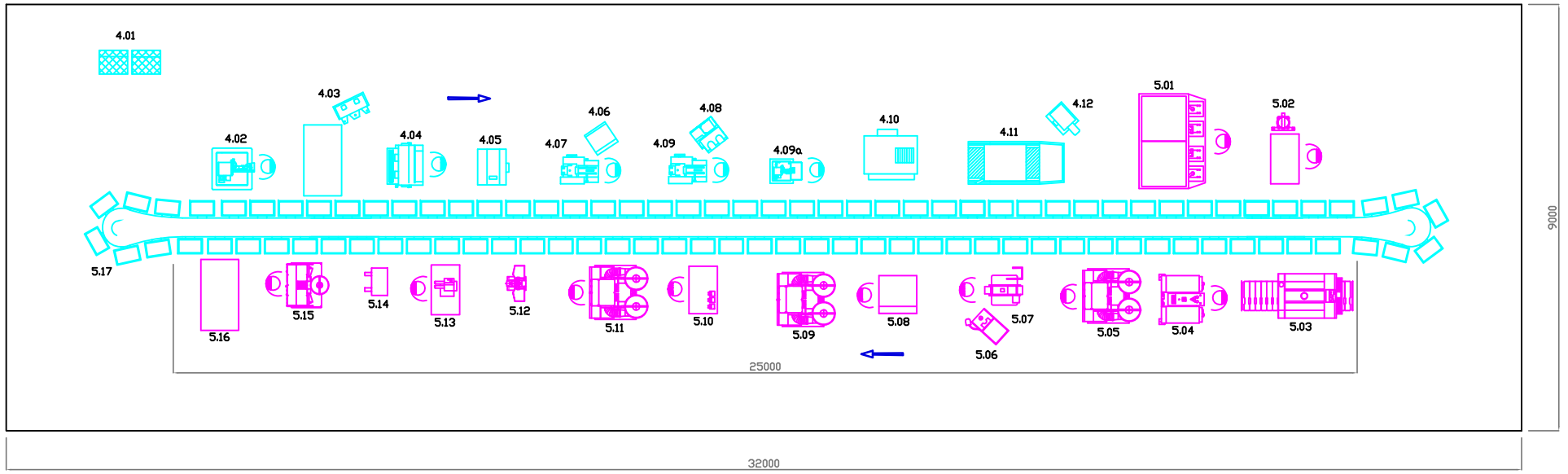


Area 224 sqm

Scale 1:130

DRAWING N° Layout B-2b	Closing department Module 500 pairs Advanced			
PISIE Via Matteotti, 4/a 27029 Vigevano (PV) Italia Tel. +39.0381.70137	DATE 20.DEC.2010	DRAWER AF	VERIF. ATR	SCALE 1 : 130

500-ADVANCED Lasting-Finishing dept.



Area 224 sqm

Scale 1:130

DRAWING N° Layout B-2c	Lasting-Finishing department Module 500 pairs Advanced			
PISIE Via Matteotti, 4/a 27029 Vigevano (PV) Italia Tel. +39.0381.70137	DATE 20.DEC.2010	DRAWER AF	VERIF. ATR	SCALE 1 : 130

www.pisie.org

Annex 3

Useful institutions and certification bodies and Guidelines for exporting footwear to the EU

TÜV ITALIA srl

Gruppo TÜV SÜD

I-20099 Sesto San Giovanni (MI)

via Carducci 125 Pal. 23

Tel.: +39 02 24130.1

Fax: +39 02 24130.397

Contatto: Emilia Pistone

E-mail: info@tuv.it

Web: www.tuv.it

http://www.aioici.org/en/Members/T%C3%9CVItaliaSrl/tabid/217/Default.aspx?PageContentMode=1

CISQ

CISQ is a Federation of the most important Italian Certification Bodies active in all production and services fields.

CISQ
viale Sarca, 336 - 20126 Milano
Tel: +39 02 66117424
Fax: +39 02 66113066
e-mail: fedcisq@cisq.com

CBI EXPORT GUIDELINES

From survey to success. Guidelines for exporting footwear to the EU

Publication date: May 2010

CONTENTS

These guidelines were compiled for CBI by ***Searce***

Introduction

Are you already exporting to the EU, but do you want to enlarge your exports to the EU? Or, if you are not yet exporting to the EU, should your company start exporting to the EU?

Which (new) target market(s) should you aim for and which key product(s) should you choose? Which trade channel fits your company best and how do you promote yourselves to EU buyers? These are common concerns of exporters from developing countries (DC) who want to enlarge their exports to the EU or who are considering to start exporting to the EU but are not sure if it is right for them. That is what these export guidelines are all about: to help you to evaluate whether or not to get involved in the EU market or how to improve your approach of the EU market.

From survey to success: these guidelines are a practical add-on to the CBI market surveys for footwear. If you have not yet consulted the CBI market survey 'The footwear market in the EU', you are advised to do so before continuing with these guidelines. These guidelines are adapted to the specific challenges in the footwear industry and contain many practical suggestions that will help you in making decisions.

First, you are advised to define whether your company is ready to export or not. Chapter 1 helps you to answer this question. Then, if the answer to this question is positive, it is time to prioritise. Chapter 2 guides you through a process of country- and product selection, which helps you to focus your export efforts. Once you have defined a target country in the EU and some priority products, you will have to choose the right entry strategy and the appropriate sales channel. Chapter 3 deals with this sales channel assessment. Chapter 4 gives you a range of practical suggestions for your marketing tools and chapter 5 discusses the financial part of exporting.

These guidelines are an addition to related CBI information that covers the general theory of exporting, like the CBI export manual 'Export Planner' and the CBI export tool 'EMP Builder'. The market surveys, export manuals and export tools are available at http://www.cbi.eu/marketinfo

Although these guidelines are developed in particular for exporters, Business Support Organisations (BSOs) could also very well make use of it. Staff of BSOs in developing countries can use this document to support and advise their members about exporting to the EU.

1 Export: Yes or no?

Exporters from developing countries who have read the CBI market survey 'The footwear market in the EU' can see that there are a number of opportunities that exist if they choose to attempt to access the EU. There has been a major shift in footwear production in recent years to low-wage countries. Due to the high labour element in the manufacture of footwear, this makes sound economic sense. The other key factor is the high volumes involved in the manufacture of footwear. Although prices have been coming down, volumes have been increasing year on year. Signs that prices may be starting to increase again have not detracted from the opportunities that exist for exporters.

There are a number of important requirements that DC exporters have to meet before they should seriously consider whether to export. If your company is not able to meet these requirements, if not immediately, then certainly in the near future, then exporting may not be for you.

The key requirements are:

Comply with European market access requirements

A number of requirements are important in the supply of footwear:

- *Footwear labelling*. If you make, import or sell footwear you must ensure it is labelled to show the composition of its component parts: i.e. upper, the lining and sock, the outer sole. Materials must be labelled in one of four ways: leather, coated leather, textile or other.
- *Environmental issues* when producing footwear. The EU Directive (2002/61/EC) restricts the use of dangerous substances and preparations (azocolourants) in textile and leather products, including footwear.

A number of other requirements are important in the supply of footwear:

- The convention on trade in *endangered species (CITES),* which includes regulations (EC 338/97) on leather products containing material from endangered species.
- Packaging. All imported packaging must comply with European standards (be either reusable, recyclable, energy recoverable or compostable; have the minimum volume and weight to maintain necessary levels of safety, hygiene and acceptance by the consumer; contain no more than minimum levels of heavy metals and other hazardous substances). There are also maximum quantity levels, and specific regulations on wood packaging.
- Anti-dumping. This has been the major issue in the footwear industry in recent years between the EU and outside suppliers. Import restrictions have been imposed on certain countries. These are designed to protect the EU leather industry and prevent large-scale dumping of products on the EU market that may have the effect of distorting the normal operation of the market.

More information

- http://www.cbi.eu/marketinfo
  Select "footwear" and the EU. Under "legislation" you will see the various relevant documents that you can download. Under "non-legislation" you will find other relevant documents, such as occupational health and safety requirements or buyers requirements.
- http://exporthelp.europa.eu
  Use this source to find additional requirements, import tariffs and customs documents. Click, for example, on "requirements and taxes". Go to "search" to find the HS code for your product. Select it as well as your country and the EU destination country. Depending on your product, you will find a page with specific requirements for your product, general requirements and import procedures.
- http://www.cen.eu/cenorm/index.htm
  This source promotes voluntary technical harmonisation in Europe, and conformity assessment of products and their certification. Search on footwear to find relevant documents.
- http://www.intracen.org/ep/packaging/packit.htm
  This source gives information for exporters and their packaging supply chains. It includes advice on export packaging for hides and skins that also apply to footwear.

Meet industry specific challenges

Quality demands

EU customers are looking for reliable suppliers who can supply on a regular basis with a constant quality. DC exporters need to be able to supply this constant quality. Different markets have different requirements regarding quality, materials, sizes, colours etc. In this respect, minimum quality requirements have been formulated. Many tests exist to ensure that the materials (leather, textile etc) meet the standards required by consumers e.g. sturdiness. Testing methods are based on European norms (EN) or national standards or otherwise ISO standards.

Traceability
Another factor is traceability. The entire product must be capable of being traced back through the supply chain. This entails detailed record keeping and strict control procedures for the various production processes involved.

Reliability
The EU market is characterised by high *logistical demands*. Lead times are becoming shorter and shorter and delivery reliability is paramount. Suppliers' flexibility should be high and the response times (time between request for quote and purchase order) must be minimal and controlled. Consequently being able to supply at the agreed time and date is very important. Conformity to the *quality standard* must be continuous. In practice, this will often mean investing in new equipment and in the education and training of personnel.

Competitive prices
Competitive prices are expected from retailers or distributors when buying from a developing country. While price is very important, it is equally important that you should not be perceived purely as a source of a low cost product. Do not trade at a loss or with very low margins in order to be competitive.

Professional communication
EU customers expect that DC exporters possess good communication skills. Therefore, you should be open and clear in presentations, keep appointments, respond quickly to questions and deal with questions and problems adequately.

Understand the trends
The taste and preferences of consumers when buying footwear strongly relate to their lifestyles and trends. In the fashion industry, trends strongly influence footwear designs. So before designing and introducing your footwear, try to be aware of the latest trends in your target market.

You can identify the major trends in footwear by checking:
- ***Trends that are given in Chapter 1.3 of the CBI market survey*** 'The Footwear market in the EU' and in the Annexes of the CBI Footwear market surveys in Italy, France, Spain and Germany.
- *The websites of* ***international footwear trade fairs*** *such* as the Micam (http://www.micamonline.com) and GDS (http://www.gds-online.com) and local trade fairs that are given in CBI Footwear market surveys in the individual countries.
- The websites of ***footwear trade magazines*** and ***large footwear retailers*** of which the addresses can be also found in the surveys in the individual countries.
- *The sites of* ***consumer fashion magazines*** *e*.g. Collezioni at http://www.collezionionline.com or L'Officiel at http://www.jaloufashion.com, or check the sites of Marie Claire, Elle, Vogue and other magazines.
- ***International fashion blogs*** such as http://www.fashionising.com and search for 'Footwear' or http://www.thefashionpolice.net
- For total outfits you can check the ***seasonal trends in CBI fashion forecasts*** that can be downloaded from http://www.cbi.eu/marketinfo

Other ideas for trends can be found from free-lance footwear designers, trend agencies (such as http://www.trendwatching.com), or from popular series on TV in your target country or music programs similar to MTV.

How to translate these trends into opportunities can be found in CBI's 'Exporting to the EU' (chapter 2.6). How to link trends with the design of your footwear range can be found in CBI's 'Your guide to product and range development'.

Please take note of the following when analysing trends:
- In order to understand the trends, i.e. where they come from and how long they will last, try to recognize the underlying demographic changes and consumer lifestyles. Try to

identify a trend that may be suitable for your product, for example the increase in single households. They tend to be more open to footwear from developing countries.
- You should be aware that not everybody follows trends. For every trend, there is a counter trend that presents untapped growth opportunities as well as potential threats. For example, while there is a rapid increase in the number of people who are influenced by the wider fashion industry when buying footwear, there is another growing group of consumers who prefer quality and comfortable footwear, which they can use for a long time.
- It is important to know the trends that already are seen in Western and Northern EU States. The new member states lag behind the others in terms of the adoption of new innovations. However, their integration into the EU has meant that this process will be speeded up.

Identify your strengths and weaknesses
- The next step is to look into your own strengths and weaknesses. Topics to be assessed include: your specialty, your footwear range, design capabilities, product standards, production capacity, flexibility, logistics, sales force, financial strengths and the capabilities, experience and commitment of your company to approach overseas markets.
- Your own capabilities are crucial for success. For example, if you are trying to enter the Italian footwear market at the medium and fine segments, you should be able to offer a well designed footwear range in the right colours. Most Italian buyers regard trendiness and design most important, especially in the fine segment. So, as a new supplier, you must be able give him access to your designers who must be well informed about the latest trends and styles in international footwear. In this case, such strength is as important as your production skills and capacity.
- If you are able to do this, you have a good opportunity. However, as Italian fashion changes rapidly, buyers are not always loyal to particular overseas suppliers, so you may lose out to another supplier from your own country or neighbouring country. This is a major threat, especially when you already have made some initial investment.

Try to optimise your strengths and discover how to overcome weaknesses in the future and how to deal with threats in the market place. This analysis will be crucial for your decision whether or not to start exporting to the EU.

Prepare your company to be export ready
- Do the Export Readiness Checker at http://www.cbi.eu/tools (→ 'export checker');
- Have a first look at the online exercise to write an Export Marketing Plan (EMP Builder) at http://www.cbi.eu/tools (→ 'Export Marketing Plan'). Familiarise yourself with the demands and requirements of exporting;
- CBI's 'Export Planner', in particular chapter 1 and 2 (http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals).

Do a financial analysis
Exporting involves taking risks, and the financial part is certainly one of them. Chapter 5 deals with finance in more detail. The financial analysis should also be used to make the decision whether or not to export. If your profit and loss projection of the export venture is not positive, you can still decide not to export, as the financial risks are too high.

Yes or no?
If your company is not able to meet these mentioned minimum demands, is not export ready and/or is not able to adapt to them in the short run, then it is not advisable to start exporting to the EU. On the other hand, if you feel comfortable with these demands, you could consider exporting to the EU. Then, continue with chapters 2-5 of these guidelines.

2 Product – and country selection

Once you feel that your company is ready to export, then choose a priority product and EU country.

Product selection
In selecting your product, it is advisable to research a couple of possibilities in order to make a considered judgement, before focussing on a specific footwear item. There is no value in putting effort into analysing the European market for all your products if you are specialised in only one product e.g. sandals. Your priority product(s) could be for example your most profitable product or the one with the least up-front investment, with the least competition (e.g. eco-footwear) or matching well to EU fashion trends (e.g. evening footwear). There are many aspects to consider here. For example, can you produce branded sandals for specific customers, or are your products unique to yourself or your country, e.g. made of canvas/cork/textile, with special prints etc.? The EU market itself also plays a role, so try to analyse the EU imports and consumer demand (discussed below).

EU-country selection
The EU is not a homogeneous market. There are now 27 separate member states, and although there may be similarities between some states, the differences in some cases will outweigh the similarities. For this reason, it is important in the first instance to focus on a few or on a cluster of countries. Please note here that within EU countries there are important differences to appreciate. For example, the north of Italy is very different from the south, and in Germany there are still differences between the west and the east. The climate is very different in the north of the EU to the south. This has an important impact on the footwear styles that will be sold. How to proceed in your country selection depends on the type of footwear. For example when you offer boots, you could focus on Scandinavian countries. You could start your search initially to Sweden, the biggest market and its neighbouring countries Finland and Denmark. On the other hand, if you offer leather sandals or flipflops with a unique design from your country, being less sensitive to competition, you could try to approach several EU markets.
Also, be aware that there can be large differences between rural and urban areas within one EU country, especially in Eastern EU countries. See also under 'segmentation' in the CBI country surveys for Footwear.

In general, the following criteria can be used to make your EU country selection.

EU-imports
As a minimum do an analysis by comparing value and volume figures – as they can be quite different – of the following:
- EU-imports by product (which footwear products are imported?);
- EU-imports by country (which country is importing?);
- Share of developing countries in these imports (the higher the share of DC's in imports, the higher the acceptance of DC's as a supplier);
- What is the trend of imports, are they growing? Note the significance of footwear parts in the figures. This can sometimes disguise the extent of co-operation between countries, or provide clues as to gaps in the market for finished products.

Sources
- Chapter 4 of CBI's market survey 'The footwear market in the EU' (http://www.cbi.eu/marketinfo - select 'footwear and the EU → tap the box sector surveys);
- CBI market surveys on the market in EU countries (http://www.cbi.eu/marketinfo - select 'footwear and the EU country in question → tap the box sector surveys);
- EU helpdesk – http://www.exporthelp.europa.eu/. Go to 'trade statistics' and then use 'search' to find the HS code for your product. Then select a reporting country and the partner country (your country or all partners). In order to determine the most interesting EU countries for your product, select at least 3 consecutive years and click on value and/or

volume. The result is a list of all imports by the EU27, sorted by supplying country and by importing EU-country. Use it to determine the most interesting EU countries. You can also analyse the development of imports (in both quantity and value) and look at your competition: which other countries supply 'your' product and how do their supplies develop?

Consumption
At least try to answer the following questions:
- What is the demand for your footwear products in each EU-country?
- How has this developed? Which EU countries show the biggest growth?
- What are the most important trends and in what way do they fit your product?

Sources
- Chapter 1 of CBI's market survey 'The footwear market in the EU';
- Industry associations and trade press in EU countries (to be found in CBI market surveys on the footwear market in individual EU countries);

When analysing these criteria, please be aware that the biggest (importing) EU market does not always have to be the most interesting country for you. Although Germany is by far the biggest market in the EU in terms of value and volume, it may for example turn out that – based on growth rates and/or interest in your country - another country is far more interesting for your product. The other important point is the extent of domestic production in a particular country. Is it strong, or vulnerable to outside competition?

Primary research
Apart from Internet research, you are advised to do your own primary research. This requires you to talk to experts who are specialists in the footwear market in the EU. They can provide you with extremely valuable first hand information, which can inform your decision-making. Try to interview importers, industry specialists and other experts. In general, such information can best be gathered by talking to people (at trade fairs, or by phone).

Sources
- CBI's 'Your guide to market research' Part 1 'Your research assistant' chapter 2.2.3 (http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals).
- Industry associations in the EU (to be found in CBI market surveys on the individual countries).
- A very good footwear source is http://www.shoeinfonet.com

Competitor analysis
Look at your competition and learn from them. What can you find out about their strengths, success factors, price level, materials, finishing level of products and/or added value?). Do not forget that competitors can be found in your own country, in other developing countries and also in the EU. You can use chapter 4 of the CBI market survey (or chapter 3 of the individual country surveys) for a competitor analysis. This contains a table with leading suppliers to most EU countries. The market surveys also discuss the development of imports from developing countries by product group. You can also use the CBI market surveys to identify the EU competition. They discuss production (developments) and the most important players in each country. Visit their websites!

Sources
- Industry associations in the EU, look for member lists to identify EU competitors (to be found in CBI market surveys on the market in individual EU countries);
- CBI's 'Export planner' (chapter 2.5.4 and 3.3);
- CBI's 'Your guide to market research' Part 2 ' Your research practice' chapter 4.2;
- CBI's 'Research Action Plan 'RAP Builder' chapter 5.2;
- CBI's EMP Builder;
- Visiting trade fairs.

Common sense
Never underestimate the importance of common sense, and your own instincts for what is *the right decision.*

Priority
In the footwear market, consumer demand trends that you can find are very important. For consumer products, future trends are as important as statistics on what has happened in the past. While the statistics give you a good indication of the nature of the supply structure, this is always subject to change. Sometimes some trends take a long time before they actually show up in figures. The opinion of industry experts is very important; they provide first hand information, which you can use to make choices for your target countries- and products. The basic point is that the more recent the information, the more reliable it will be, particularly if it is from a trusted source.

The importance of the exact colour
The colours of fashion items generally change twice a year. Normally, the colour of leather products follows the colours of the clothing and footwear fashion industry. If you want to make footwear in fashionable colours, place your order at tanneries well in advance. To prevent discrepancies in desired colours, you could order the precise colours from tanneries in the EU. This is more expensive, but the risk of a slight difference in colour or in material can be minimised. Discrepancies in colours or materials are quickly recognised by buyers and consumers, and eliminating them can be crucial for success. Where there is likely to be a problem in purchasing the correct colours or materials, you could ask an importer or agent for help. The correct colour is also very important when sending production samples to buyers.

More information
Please also read the following:
- CBI's 'Exporting to the EU' (http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals);
- CBI's 'Your guide to market research' (http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals);
- CBI's 'Export Planner' (chapter 3.1) (http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals);
- CBI's 'Digging for gold - Internet as a source for marketing information' (http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals);
- CBI's export tool 'RAP Builder' at http://www.cbi.eu/tools (→ 'Research Action Plan').
- CBI's export tool 'EMP Builder' at http://www.cbi.eu/tools (→ 'Export Marketing Plan').

3 Market entry

Once you have selected a priority product and EU target market(s), it is time to focus on the appropriate distribution channel. This section helps you to assess which channels or trade partners suit your company best.

Selecting a suitable trade channel
Your possible trade channels for footwear in the EU are importers/wholesalers, agents, buying groups or department stores.

Importers/wholesalers
Most importers have a very wide range of customers with very diverse applications. If your products are applicable in a wide range of markets or sales channels, then an importer would be a good choice. Importers will be also a good trade channel in countries with many independent footwear retailers. Importers generally have a thorough knowledge of the market. Capital requirements are limited as the importer or wholesaler holds their own stocks, so there is less financial risk but you lose out on lack of direct contact with the principle buyers (retailers).

Agents
The decision whether or not to use an agent is a significant one. The agent is an independent intermediary between the (overseas) producer on one hand and importer/wholesaler, buying groups or large retailers on the other hand. The agent receives a commission from the producer. He would tend to cover a specific geographic area. Sometimes agents build up their own portfolio and sell from stock, thus acting in a similar way to a wholesaler.

Buying groups
The role of buying groups is important in the footwear market. They are individual dealers or retailers who join and co-operate as a single buying and marketing force. This channel may be of interest as you can ask a higher selling price and your footwear will be sold at many retail outlets under a well recognised brand/label. A disadvantage is that decision making processes is slow, which implies that it would take long before your footwear has the agreed distribution coverage. In addition, a high level of after sales service as well as special conditions are often required in labelling and packaging.

Retail chain stores and department stores
Large specialised (e.g. Deichmann, Vivarte, Stylo, Shoezone) and non-specialised footwear retailers such as clothing chain stores (H&M, New Look), department stores (El Corte Inglés, M&S, Hema) and hypermarkets (Carrefour, Tesco, Metro) increasingly buy footwear direct from producers. Some of these retailers have their own buyers in producer countries who constantly look for new and interesting footwear, and for reliable sources of supply. They have become the dominant force in the footwear business. Each has their own buying policy. An advantage is that you can sell high volumes at a high selling price. But be sure to be able to supply these high volumes and to deliver in time. A disadvantage is that it is often hard to establish a relationship with buyers as they often change or are hard to contact.

Always try to think twice
Always consider carefully the (dis)advantages of working with importers/wholesaler, agents, buying groups or retail chains. You could work with a long list and narrow down to a short list. Also, consider that choosing one channel may exclude another channel. For example, agents (as opposed to importers) are very well protected under EU legislation. Once you are engaged with them, it would be very hard to bypass them and to deal directly with the clients with whom they have established a relationship. This also applies to buying groups. When supplying one particular buying group, this may prevent you from accessing other channels.

Direct sourcing
Attempting to reach the EU market directly by focusing on consumers is theoretically an option, but it is very risky. Although consumers do buy footwear online, they would tend to use a trusted source. This is more likely to be from the Internet site of a well-known retailer or manufacturer. The form of direct sourcing which is more common is to approach one of the major retailers.

Selecting a suitable trade partner
This is a very important part of the export process. The relationship and empathy you can establish between yourself and your partner is as important as finding a contact that is suitable for you in terms of the range of products that you can supply. The essential element of any trading relationship is trust. In your selection, you must satisfy yourself that you will be happy to deal with the organisation in question over a long period. Your own judgement and instincts are most important in this respect.

Finding your partner
The best way to find a trading partner is usually to contact BSOs (Business Support Organisations) in your own country. You can also check the websites of the main trade sources in EU countries such as footwear trade associations, trade portals, trading platforms or chambers of commerce.

In several EU countries there are import promotion organisations like CBI, or similar organisation helping companies from developing countries to export to EU countries where potential trade partners can be found.
The best place to meet potential trading partners is at a footwear trade fair. During a visit, you can extensively look around at the stands of the main players and get a better idea of the latest fashions in footwear.

Are they the right partner?
At trade shows, you have an opportunity to talk to potential partners on a face-to-face basis and better judge whether you would like to work with them. You could also identify potential partners from the exhibition website beforehand or from a catalogue. When selecting them (e.g. importer or wholesaler) try to find out:
- What footwear they sell (focussed on casual, formal, evening or sports footwear).
- To which target groups they sell (women, men, children, different age groups etc.)
- In which areas they are well represented in their country. If they are exporting, to which other EU countries they sell.
- To whom they sell e.g. small or large retailers, department stores, buying groups etc..

You could also find this out by looking at their website or try to find a company profile through other hosted sites e.g. of a local Business Support Organisations or trading platform, or by finding their company brochure.

You should also do a credit check of your potential trade partner, especially when an investment from your side is involved. This credit check could be done by a specialist company such as Dun and Bradstreet (http://www.dnb.com). A bank usually does not give credit ratings of its customers.

Contacting partners
You can contact interesting trade partners by mail or e-mail and follow up by phone a few weeks later. See also chapter 3.1.3 of the CBI Export manual 'Exporting to the EU'.
Although you may initiate a communication by post or email, it is recommended that there is some personal communication before a trading partner is selected.

More information
- Chapter 3 of CBI's market survey 'The footwear market in the EU' (trade channels);

- Company databases, like http://www.kompass.com (use keyword), http://www.alibaba.com (search category) and http://www.europages.net (select language then search product)
- CBI's market survey on the market in the EU country of your choice;
- CBI's 'Export planner' (chapter 4.6, 4.7, 5);
- CBI's 'RAP Builder' (chapter 7);
- CBI's 'Your guide to market research' Part 2 (chapter 6);
- CBI's 'EMP Builder' (chapter 3 and 7).

4 Export marketing tools

The next step in your export plan is to choose your marketing tools. This section discusses industry specific tools for the export product, partner selection, costing and pricing and promotion.

Export product
First, you should design your product to suit the market requirements and with that to the EU-buyer. Quality standards play an important role in this as they will give potential clients trust. It is advisable, certainly for new exporters, to focus on one or two products and to specialise in these in order to be able to supply your customer with an outstanding product. Once the customer is satisfied, the product range could be expanded. As an example, table 4.1 could help exporters in specifying their supply. It outlines the basic prerequisites per product type for dealing with the EU.

Table 4.1 Example product requirements for export

Product	Type	Brand	Basic product requirements	Organisational requirements
• Sandals	Off the shelf	• Standard product • Own brand or • Under licence	• Comfort and fit • Styling • Environmental factors • Price and material	• Sales and marketing staff • Customer-friendly response • Speed and reliability
• Pumps	Tailor made	• Unique product • Own brand or • Under licence	• Casual use • Slip on • Correct fitting • Environmental factors • Price and material	• Sales and marketing staff • Close market contact • New product development dept

More information
- CBI's 'Export planner' (chapter 4.2 to 4.4);
- CBI's 'RAP Builder' (chapter 7.1, 7.2, 7.3.1 and 7.3.2) and the EMP Builder;
- CBI's 'Your guide to market research' Part 2 'Your research practice (chapter 6.1, 6.2 and 6.3).

Costing and pricing
Most exporters quote in Euros (€) to European clients. Prices and margins are influenced by a number of factors, depending on where you are selling in the distribution chain. Wholesalers and other importers base their costing on a CIF basis and apply their margins. The landed cost for the importer is the FOB (free on board) cost plus the cost of delivery, insurance and duty, if applicable. If exporters find their profit margins are too low, they should try to reduce costs or adjust margins. If this is not possible, exporting should not proceed. Margins vary greatly, depending on the type of product and retail channel. Footwear retailers mark up prices by 100% or more.

Suppliers can often be shocked by the level of mark ups charged by some retailers. Although production costs have come down, other costs (e.g. handling, overhead, transport, stock keeping, sales costs, promotion costs etc..) in the chain have gone up, and it is these costs, which tend to account for a larger part of the selling price than the bought-in production cost. From the point of view of exporters, the cost breakdown for leather shoes has been calculated at 70% for materials, 15% for labour costs and 15% for overheads and profit. See also chapter 3.2 of the CBI survey 'The footwear market in the EU'.

Some points of interest to consider when setting an export price are:
- Aim to charge the price the market will bear. Do not go above "price points", the price set by the market for similar products. It should be in line with competitor prices;
- The price should reflect the company's quality levels, delivery and promotion;
- Keep in mind that it is not easy to increase prices once you have agreed to deliver at a certain price;
- Pricing is a mix of knowing your domestic costs and calculating costs you will incur in delivering and supporting your activities in the market;
- The negotiated price depends on the INCOTERM, the means of payment, credit terms and currency risk, quantities and the means of transport (refer to Appendix 2 of CBI's Export Planner);
- Exchange rates fluctuate. Most buyers cover themselves in advance.
- For first time shipments a letter of credit (L/C) could be negotiated, whereas trade partners in the EU usually pay on 'open account', i.e. bank transfer after receipt of the invoice. This method requires no documents, has low cost and can be done quickly.
- The most common delivery terms for footwear are Free on Board (FOB) or Cost, Insurance, Freight (CIF).

Drawing up an offer
There are two different kinds of offers:

- *General offer – or company introduction*
  The purpose of a general offer is to attract the interest of prospective buyers or trade partners who you do not know well. A general offer consists of sending a short profile of your own company and an overview of your product range with a price indication. In a personal letter, briefly introduce your company and inform him/her of the advantages of starting up a business relationship with your company, what are your unique selling propositions (USPs) etc.

- *Specific offer*
  Once you know the business partner personally or after you have made the initial contact, you make a specific offer. This is legally binding for a certain period of time and is often based on a specific request from the business partner. You must therefore be able to fulfil its terms of contract. It is advisable to fully spell out the detailed product specifications and other terms of engagement.

More information
- CBI's 'Export Planner' (chapter 4.5);
- CBI's 'RAP Builder' (chapter 7.4);
- CBI's 'Your guide to market research' Part 2 'Your research practice (chapter 6.4).

Promotion
In the footwear industry, there are a number of important promotional techniques, which you should aim to cover in your marketing activities. This is not an exhaustive list, but the key elements are:

Catalogue or brochure
It is essential that you are able to show a good clear photograph of each of your products, together with the main technical specifications and functional benefits that relate to each

product. You will use this to send to customers (perhaps in a mailing campaign) or to show them in a presentation.

More information
Find out how your competitors have produced their brochure. You will see many different types of brochures at trade fairs (see below).

Website
Going online is fundamental. Especially when taking into account that trust and credibility are major challenges for DC exporters, a good website could overcome this issue. A website offering well-defined products, competitive advantages (e.g. USP, quality, cost reduction and delivery reliability) and a list of other customers helps create a trustworthy environment.

More information
CBI's 'How to promote your website in the EU' at http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals.

Advertising
Advertising can be expensive, but careful selection of the most suitable footwear trade magazine can be an effective targeted method of reaching potential new customers. Be careful that the cost of producing your advertisement does not outweigh the cost of advertising space. Alternatively, the trade press could also be used to get free publicity by supplying them with a press release. However, you are not always guaranteed to be given space.

More information
- Trade journals (to be found in CBI market survey in the EU country of your choice);
- http://www.prweb.com/pressreleasetips.php - how to write a press release that gets noticed by the media;
- http://www.netpress.org/careandfeeding.html - the care and feeding of the press;
- http://www.internetbasedmoms.com/press-releases/ - writing a press release & free publicity for your website.

Participation at trade fairs
Participating in trade fairs can be expensive, so it would be better to first visit an exhibition a few times before making a commitment. Once you decide to participate in a trade fair, a proper planning is required to maximise the outcome of attendance. For example you will need to compile a potential list of customers who may be attending the fair, you need to contact them in advance and try to arrange appointments for them to visit your stand, you will need to discuss with experts how your stand should be presented, you should also keep a record of all your contacts and properly follow them up after the fair.

There are many footwear fairs in the EU but the main ones are:
- GDS (International Shoe Fair) in Düsseldorf, Germany, twice a year in March and September (http://www.gds-online.com).
- MIDEC in Paris, France, twice a year in February and September http://www.midec-paris.tm.fr/fr/indexfr.html
- MICAM in Milan, Italy, twice a year in March and September (http://www.micamonline.com).

More information
- CBI's 'Exporting to the EU' (Chapter 3) at http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals
- CBI's Export Planner (chapter 4.8).
- CBI's 'RAP Builder' (chapter 7.6);
- CBI's 'Your guide to market research' Part 2 'Your research practice (chapter 6.6).
- CBI market surveys on the market in the EU country of your choice (chapter 6 contains trade fairs per country);

- German Trade Fair Association - http://www.auma.de
- CBI's interactive Export Manual 'Trade fair manager-Your expo coach';
- CBI's 'Your image builder - A guide for establishing and improving commercial images' at http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals.

5 Finances

Obviously, you want to know whether exporting is profitable. In fact, that comes down to a simple calculation: turnover minus costs should equal profit target. Unfortunately, the mathematical simplicity disguises the fact that such a calculation is subject to interpretation. Examples on how to calculate whether export is profitable can be found in CBI's export planner (chapter 6.4).

More information

- CBI's Export Planner (chapter 6) (http://www.cbi.eu/marketinfo → 'search CBI publications' → export manuals);
- CBI's export tool 'EMP builder' at http://www.cbi.eu/tools (→ Export Marketing Plan).
- CBI's export tool 'RAP builder' at http://www.cbi.eu/tools (→ Research Action Plan).