

## Technical Office

Over the years SMI invested strongly in its Technical Office specialising in high technical articles.

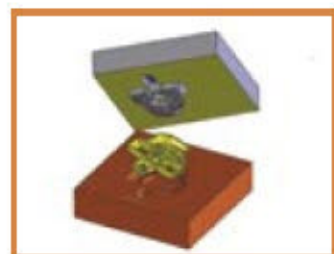
SMI Technical Office uses Cad 2D and 3D in order to study, design and project starting from Customer design and specification requests ending with the most appropriate mould to produce it.

Customers, who only purchase the mould, will receive highly qualified attached technical documentation explaining not only the moulding process in details but also how the mould works and how to do maintenance.

SMI Technical Office is also able to produce the documents for the maintenance of the mould and moulding process. SMI standards are appreciated worldwide due to our professionalism and experience in dealing with many different needs and problems.

SMI Technical Office works with

- CAD 2D: AUTOCAD 2002
- CAD 3D: SOLIDWORK 2004
- CAM: SURFCAM 2003



## Tool Room

SMI Tool Room is specialised in mosaic moulds constructions.

Our Tool Room works together with the Technical Office and enables SMI to produce high quality moulds in a relative short amount of time.

In addition SMI moulds are extremely resistant because they are built with the most advanced techniques using special steel and mosaic method with interchangeable metallic dowels refined with electro erosion.

SMI moulds thank to the high resistant raw materials and high quality production methodology are more reliable and resist at galling enabling to produce large quantities with low maintenance costs.

SMI Tool Room works using

- Electro Erosion using CNC with Thread and Tuff
- Three-dimensional Automatic Milling Machine with CNC
- Lathe with CNC
- Automatic Vertical Drilling Machine with Screen
- Grinding Machine with CNC

SMI Tool Room Production is continuously monitored and checked by SMI quality control department using Optical, Pulsed Surface Measurement and Laser control machines.



Your partner  
from raw material  
to final product



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## SMI s.p.a.

SMI is a supplier of measurement instrument services, strong in Gas Meters / Regulators, supplying worldwide for more than 40 years.

Founded in 1969, SMI is specialised in technical articles producing.

SMI works together with its Customer starting from the design and the project of the article, producing the mould for thermosettings, thermoplastics and elastomers, choosing the appropriate raw material, delivering the first set of samples for Customer approval and, once approval has been given, starting the production.

In addition each department works separately from the others for the maximum customer tailored service.

In the whole process Customers will receive all the experience and know-how of SMI and its ability to solve problems and suggest more efficient solutions. SMI synergic way of working among our sister company Elchi, our moulding lines, our tool room and our technical office enable SMI to guarantee a highly qualified service that pushes our Customers to consider us more as a partner than a supplier. Nevertheless service can vary widely in relation to Customer needs.



## Raw Material

SMI sister company Elchi, founded in 1974, has created and produce a wide range of High Quality Materials, mainly based on Thermoset resins. Elchi has developed an extensive range of moulding compounds to meet the most demanding Industry requirements.

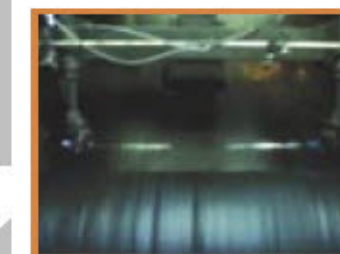


- 1974: Production of DELSI class materials, high percentage mineral moulding compound
- 1982: DELGRA (PF) material first formulation is developed
- 1986: Esthetic melamine (MF) material MELCAM
- 1993: Polyester compound (UP) POLYDUR formulation is defined
- 1998: Elchi is UNI EN ISO 9001:1994 certified by Det Norske Veritas
- 2000: DURALITE, MELCAM and POLYDUR are UL 94 V0 certified by UL - Underwriters Laboratories

Gas Meters and Fuel Meters application are Elchi core business. Based on thermosetting phenolic resin, DELGRA materials by Elchi became standard reference in gas and fuel meters field. DELGRA materials have their own force based on special graphite-mineral filled formulation, which leads to best performance in term of

- Dimensional Stability
- Lower Water / Moisture Absorbance
- Low Friction Coefficient and Wear
- Chemical Resistance

Parts moulded in DELGRA can be lapped and finished up to real tolerances of 4-5 micron, allowing optimal fit of gas and fuel meter measuring heart.





## Production Lines

### Thermosettings

The production of thermosetting parts run by 17 presses using transfer and compression technology. SMI worldwide production force counts 30 presses ranging from 100 Tons to 350 Tons.

During the years SMI specialised on highly technical articles which involve large quantities.

For this reason SMI main business is currently related to Gas Meter / Regulators and Petrol Meter.

Over the years SMI has also been able to satisfy difficult production such as ring sealing with or without metal insert. SMI is able to work together with Customers and solve their problems.

Working with Customers SMI has developed the noun of a problem solver due to its experience, high capable people and high quality equipment.

SMI, in order to guarantee the highest quality within very low tolerances, developed together with its sister company Elchi moulding compounds which after being moulded and after SMI special treatments was able to satisfy extremely low tolerances such as 3 micron.

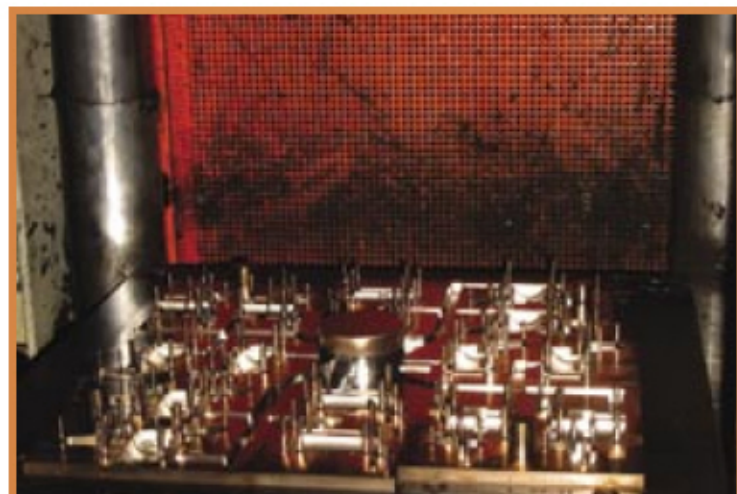


### Thermosetting Production Line

- Press Capacity Range: 100 Tons – 350 Tons
- Worldwide Number of Presses: 30
- Material Consumption Per Year: 1.200 Tons

SMI Thermosettings Production Line is continuously monitored and checked by SMI quality control department using Optical, Hardness Control, Pulled Surface Measurement and Laser control machines.

SMI in order to complete its service for every box delivered attach a quality control report explaining the quality and the characteristics of the article.



### Thermoplastics



SMI Thermoplastics line, based on SMI experience, is able to produce highly technical articles due to internal quality control procedures.

SMI Thermoplastics line moulds using many different European high quality plastic compounds producers and always working together with suppliers to implement quality of raw materials.

Continuous high level of investments in quality control and automation enable SMI to produce large quantities maintaining high quality level.

SMI Thermoplastics production line ranges from 45 Tons to 300 Tons.

In addition the presses are equipped with robots and manipulators, which are running automatically 24 hours a day and which lead the procedure of production, from the beginning, taking the raw material, till the end of the process, packing the article.

SMI worldwide presses workforce counts 20 machines which consume around 450 Tons of Raw Material.

SMI is able to mould Thermoplastics articles from 1 gr to almost 2 Kg.



### Thermoplastic Production Line

- Press Capacity Range: 45 Tons – 300 Tons
- Worldwide Number of Presses: 20
- Material Consumption Per Year: 450 Tons

SMI Thermoplastics Production Line is continuously monitored and checked by SMI quality control department using Optical, Pulled Surface Measurement and Laser control machines.

SMI in order to complete its service for every box delivered attach a quality control report explaining the quality and the characteristics of the article.

### Diaphragms

SMI developed over the years experience and know-how on the different methodologies to produce diaphragms mainly for Gas Meter / Regulators and technical instruments.

Nevertheless SMI has abilities and production capacity to produce all sorts of diaphragms.

SMI has the ability to produce large quantities with very low tolerances.

The material used is a natural bolt, which is coated with a specific type of rubber in order to satisfy the final product application.

In addition SMI in order to give a full service is one of the few worldwide diaphragms producers that produce a wide range of Diaphragms from 1 cm to 900 cm.

Worldwide SMI counts 32 presses, which consume 250.000 sqm. of coated rubber.

SMI developed a quality control and a good relation with raw material suppliers in order to supply a reliable service to all its clients.



### Diaphragms Production Line

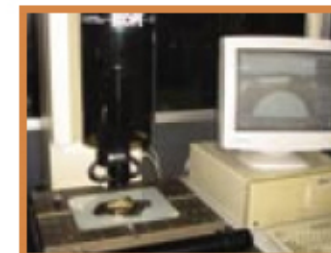
- Press Capacity Range: 1 cm – 900 cm
- Worldwide Number of Presses: 32
- Material Consumption Per Year: 250.000 sqm

SMI Diaphragms Production Line is continuously monitored and checked by SMI quality control department using Optical control machines.

SMI in order to complete its service for every box delivered attach a quality control report explaining the quality and the characteristics of the article.



## Quality Control



SMI operates business fully committed to total quality control and has obtained since 1995 the certification UNI ISO EN 9001 with Certificate SQ0634-IT signed by DET NORSKE VERITAS.

SMI quality control operations follow ISO 2859 regulation, which rule the quantity to check in relation to the quantity to produce.

ISO 2859 also states the Limit Quality Acceptance. SMI fixed its LQA equal 0,65%.

In addition quality control collects data and allows analysis on the production process and products characteristic.

Critical tolerances dimensional and attribute are analysed using widely accepted statistical calculation:

- Histogram
- Pareto analysis
- Production Capacity Detectors: Cp and Cpk
- Sigma process analysis

SMI sustained over the years constant investments to maintain the top level technology level in its quality control departments.

Our quality control equipment is based of:

- Optical Control Machine
- Touch Probe Control Machine
- Hardness Control Machine
- Pulled Surface Measurement Machine
- Linear Digital Instruments
- Laser Measurement Machine

SMI in order to complete its service for every box delivered attach a quality control report explaining the quality and the characteristics of the article.

