



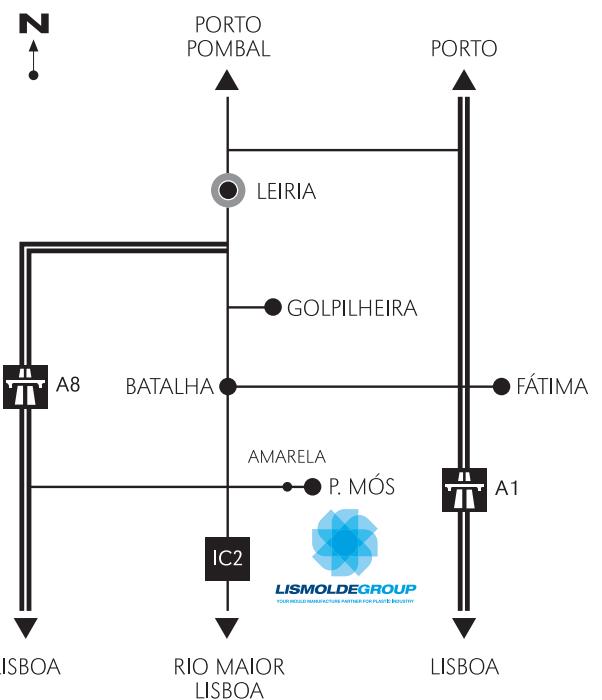
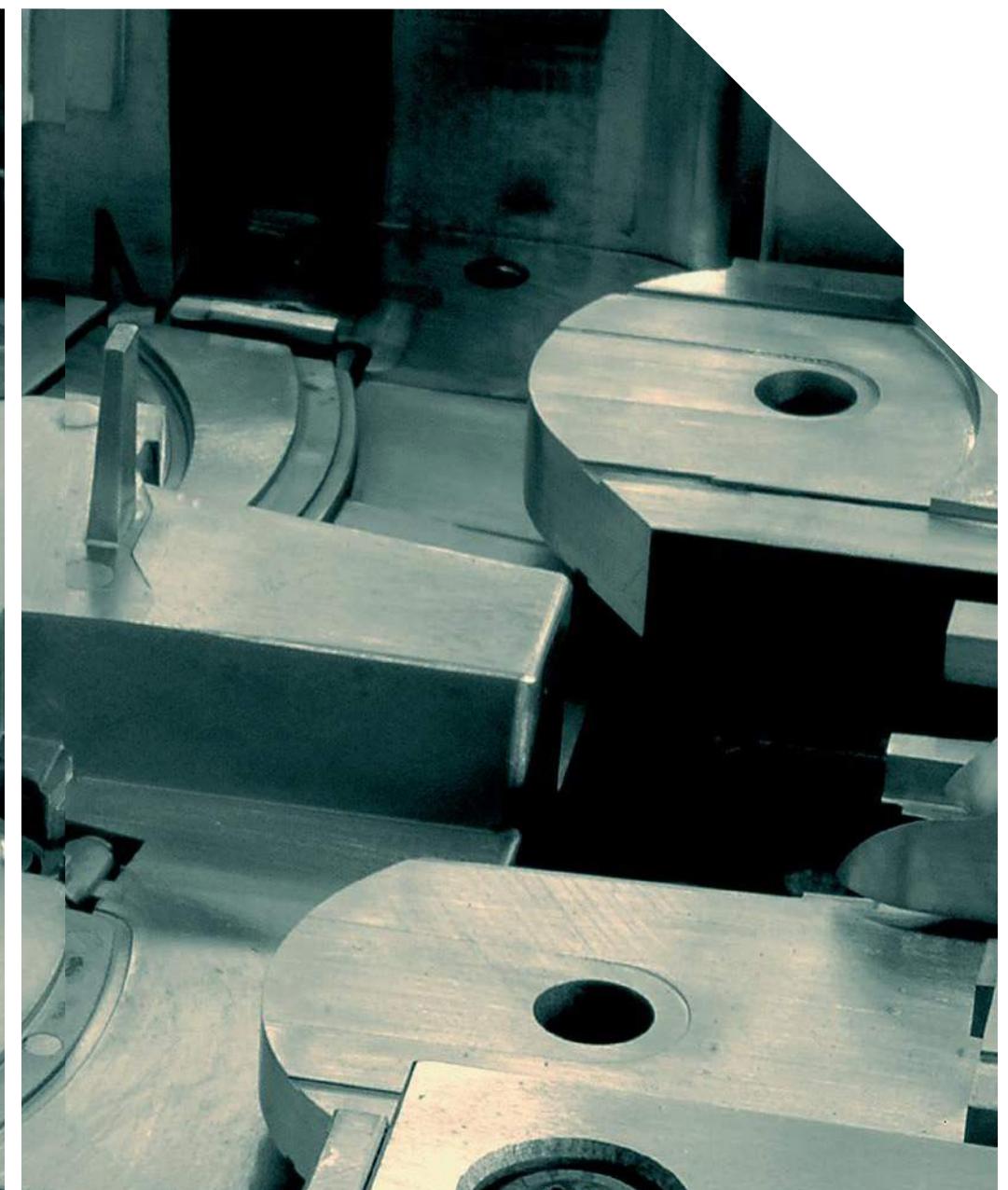
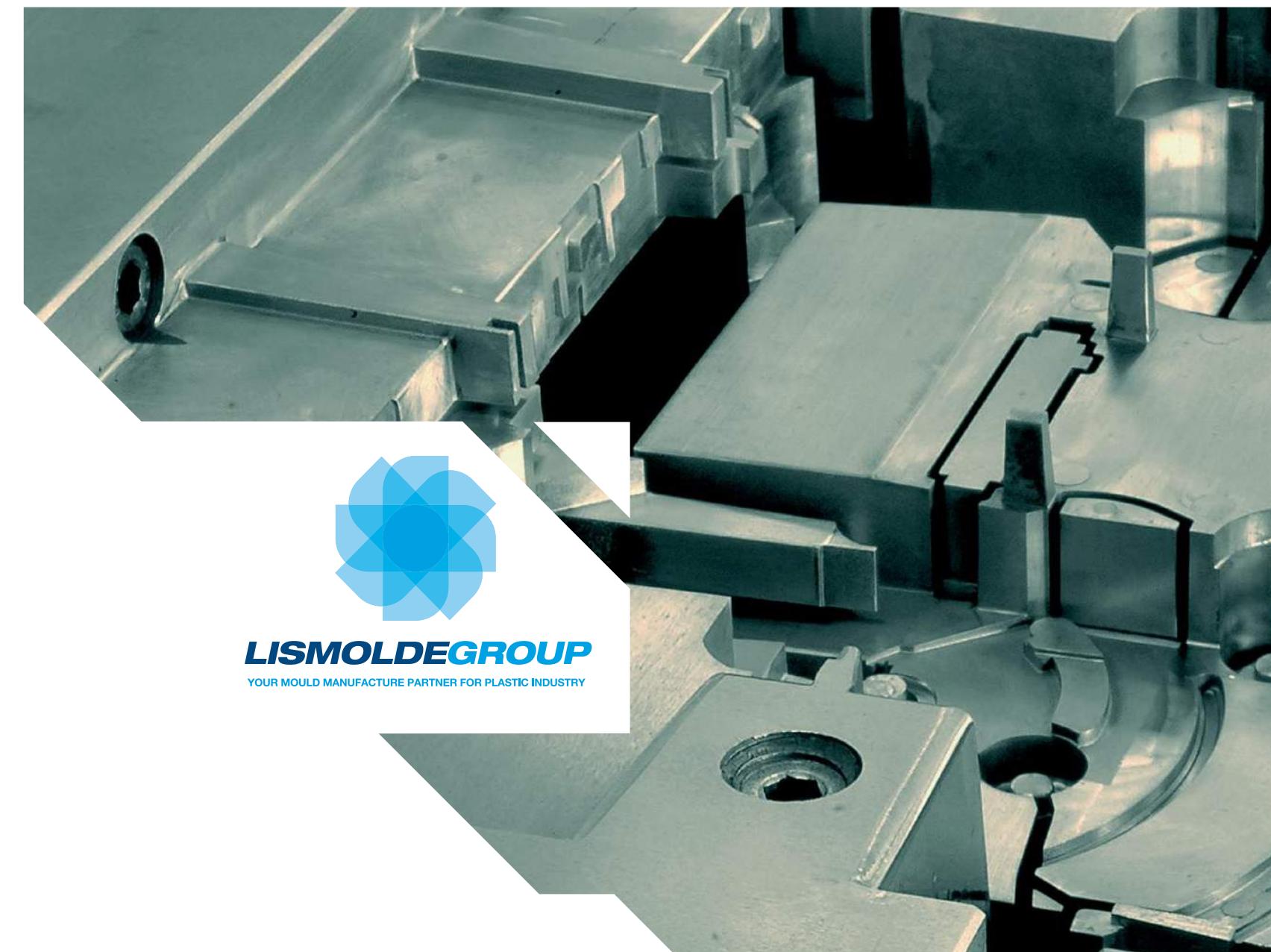
Zona Industrial "A Amarela"
2480-051 Porto de Mós
PORTUGAL

tel. +351 244 499 190
fax.+351 244 499 199
e-mail. info@lismoldegroup.pt

www.blend.pt

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**Your Lismolde Group
Technical Guide**







After over 45 years in the market of the mould manufacture, Lismolde Group already counts on a significant know-how.

Our main goal has always been the complete satisfaction of our clients. To achieve that, we not only invest in technology, infrastructures and training but also in a trust relationship with our clients.

We are perfectly aware of the importance of communication during a project, that's why we are always available to answer the client's questions and we keep him informed of every step during the mould manufacture.

In Lismolde Group we believe that it is much more important to do a high quality job than many medium quality jobs, so we prefer to work with a limited number of clients and to guarantee each one of them a high quality job.

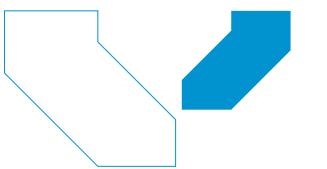
Our 55 years of experience give us confident to do a good job.



■ A NEW VISION OF THE MOULDS MANUFACTURE WORLD THAT PUTS THE CLIENT IN 1ST PLACE AND PRIVILEGES QUALITY

The first enterprise of Lismolde Group was founded in 1959. In Lismolde Group an engaged and specialized team supported by the latest technology, works continuously to fulfil delivery times and to guarantee the best solutions in the moulds manufacture. We offer different services, making means and resources available for the total satisfaction of the client. All projects are analyzed in order to achieve Innovation, Efficiency, Quality, Price and Deadlines. The Planning Department assures the efficiency of the mould construction process through a continuous monitoring and regular project revisions. The project is carried out by the best technicians with

the best mould project 3D - CAE/CAD/CAM systems. The moulds are produced by specialized staff, with flexible automated manufacturing cells and high performance equipments. The quality of our production is constantly monitored by the quality assurance team using ultra-precise measuring tools and machines. The Quality Assurance Department of Lismolde Group is continuously researching and improving, once it assumes a very big importance in the production process. Lismolde Group works for 4 main markets, Automotive, Household, Electronics and Cosmetics among others.



■ UNE NOUVELLE VISION DU MONDE DES MOULES INDUSTRIELS QUI FAIT DU CLIENT SA PRIORITÉ ET PRIVILÉGIE LA QUALITÉ

La première entité du Groupe Lismolde fut créée en 1959. Au sein du groupe Lismolde, une équipe engagée et spécialisée, formée aux dernières technologies, travaille continuellement pour garantir les délais et trouver les meilleures solutions pour la fabrication des moules. Nous offrons différents services, mettant à disposition du client les moyens et ressources nécessaires pour sa totale satisfaction. Tous les projets sont analysés dans une optique d'innovation, efficacité, qualité, compétitivité et respect des délais. Le département de planification garanti un processus de fabrication du moule efficace par un contrôle détaillé continu et des comptes-rendus réguliers des projets. Le projet est mené à bien avec les meilleurs logiciels 3D-CAE/CAD/CAM. En travaillant sur une base polyvalente, avec des cellules flexibles, un équipement performant, les dernières technologies et un personnel formé, nous garantissons l'optimisation du processus de production. La qualité de notre production est constamment contrôlée par l'équipe de la qualité, utilisant des machines et des outils de mesure ultra-précis. Le département Qualité de Lismolde Group assurant une part majeur dans le processus de production s'efforce de faire des recherches et d'améliorer en permanence celui-ci. Le Groupe Lismolde travaille essentiellement pour 4 marchés : Automobile, Électroménagers, Electronique et Cosmétiques, entre autres.

■ NEUE PERSPEKTIVE DER WERKZEUGHERSTELLUNG, DIE ZUM 1. PLATZ DER KUNDE UND DIE QUALITÄT BRINGT.

Die erste Firma der Lismolde Group wurde 1959 gegründet. In Lismolde Group ein engagiertes und spezialisiertes Team unterstützt von der modernsten Technologie, arbeitet um Lieferzeit und die beste Lösungen der Werkzeugherstellung zu garantieren.

Wir anbieten verschiedene Dienstleistungen. Für die total Zufriedenheit des Kunden stehen alle Mitteln zu Verfügung. Wir analysieren alle unsere Projekte konzentriert auf Innovation, Effizienz, Qualität, Preis und Lieferzeit. Die Planungsabteilung garantiert durch eine fortgesetzte detaillierte Betriebsüberwachung einen effizienten Werkzeugkonstruktionsprozess und reguläre Projektrevisionen. Das Projekt wird von den besten Technikern, mit den führenden 3D - CAE/CAD/CAM Werkzeugprojektsystemen ausgeführt. Die Werkzeuge werden von spezialisierten Technikern mit automatischen und flexibel Herstellungseinheiten und hoch leistungsfähigen Ausstattungen hergestellt. Die Qualität unserer Produktion wird kontinuierlich durch das Qualitätssicherungsteam und durch die Anwendung ultra-präziser Messwerkzeuge und Maschinen überwacht.

Die Qualitätsabteilung der Lismolde Group forscht und modernisiert sich kontinuierlich, weil sie ein sehr wichtige Schritt des Herstellungsprozesses ist. Lismolde Group produziert hauptsächlich für 4 Märkte: Automobilindustrie, Haushalt, Elektronik, Kosmetik u.a.

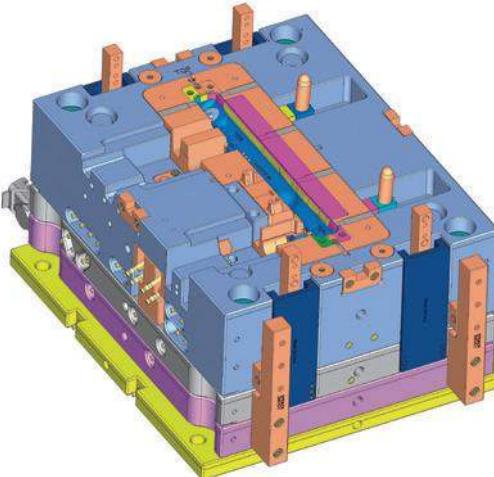
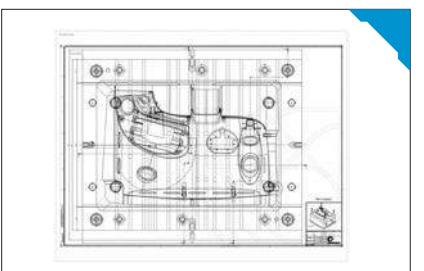
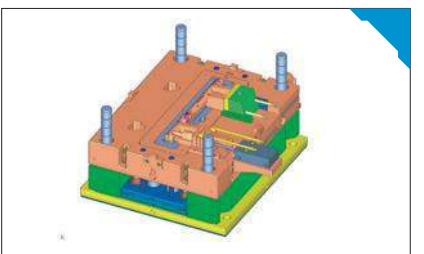
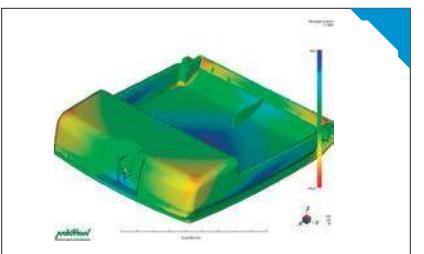
■ NUEVA VISIÓN DEL MUNDO DE FABRICACIÓN DE MOLDES, DANDO PRIORIDAD AL CLIENTE Y PRIVILEGIANDO LA CALIDAD.

La primera empresa de Lismolde Group fue fundada en 1959. En Lismolde Group un equipo dedicado y especializado, apoyado en la más moderna tecnología, trabaja continuamente para cumplir fechas de entrega y garantizar las mejores soluciones en la construcción de moldes. Ofrecemos varios servicios, poniendo a disposición los medios y recursos para la total satisfacción del cliente. Todos los proyectos se analizan con vistas a la Innovación, Eficacia, Calidad, Precio y Plazos. El departamento de planeamiento asegura la eficacia del proceso de construcción del molde a través de una monitorización continua y revisiones regulares del proyecto. El proyecto es realizado por los mejores técnicos a través de los mejores sistemas de proyección de moldes 3D - CAE/CAD/CAM. Los moldes son producidos por técnicos especializados, con ayuda de células de producción automatizadas y flexibles, y equipos de alta calidad. La calidad de nuestra producción es monitoreada constantemente por el equipo de control de calidad, por medio de máquinas y herramientas ultra precisas.

El Departamento de calidad del Grupo Lismolde, con importancia determinante en el proceso de producción del molde, está en constante investigación y actualización. Lismolde Group produce sobre todo para 4 grandes mercados: Automotor, Electrónica, Electrodomésticos, Cosméticos, entre otros.



TOOL CONCEPT



CONCEPT DEVELOPMENT

We start to develop the concept according to the client tool specifications, the concept development is done along with the client , every step is discussed, analyzed and always has to be approved by the client, if and when necessary meetings by phone conference or in person can be organized in our facilities or in the costumer facilities. Important is that the concept development of the tool is well understood by both sides and together we reach for the best Quality/Price result.

PREFERRED / MAINLY USED STANDARD PARTS AND STEELS

For the steels we prefer F. Ramada – Uddeholm, Thyssen, Eschmann, Meusburger and Hasco. For the standard parts we usually work with the Fa. HASCO, DME, CUMSA, RABOURDIN, STRACK, MOLDMASTER, INCOE, GÜNTHER, HP, STÄUBLI, MEUSBURGER.

INTERFACE TO INJECTION MOULDING MACHINES

We usually receive from the client the specifications of the injection machine in which the mould will work and we build a mould according to that type of machines. In our injection plant (only for tests) we have a 65 Ton, a 125 Ton, a 220 Ton and a 400 Ton machine. If another machine is required, we subcontract it in another company for the moulding test.

CONTACT TO MOULD SUPPLIER DURING PROJECT WORK

The client has always the possibility of staying in contact with Lismolde during the entire process. There is a contact person for each project in the commercial department always available to answer the client's questions.

We supply you every two weeks with mould status reports and photos till the end of the process.

TOOL DEVELOPMENT · OUR PATH TO ACHIEVE A QUALITY, LONG-TERM RUNNING PRODUCTION TOOL.



1ST STEP 3D FILE ANALYSIS

When a client delivers us a project for a mould construction, we make a detailed analysis of the 3D file of the part to verify if there are any negative areas or any other problems and we inform the client immediately about that. After having a 3D file OK the project on the tool starts.



2ND STEP PRELIMINARY TOOL CONCEPT

A preliminary mould drawing is made and sent to the client. Depending on the complexity of the tool, it takes between 1-2 weeks. On this stage it is important for the client to analyze the tool dimensions, as it is the critical timing to order the steel or aluminium. After the comments and analysis of the client we go for the 3rd step, the semi-final mould drawing. It takes also between 1-2 weeks, of course always depending on the complexity of the tool.



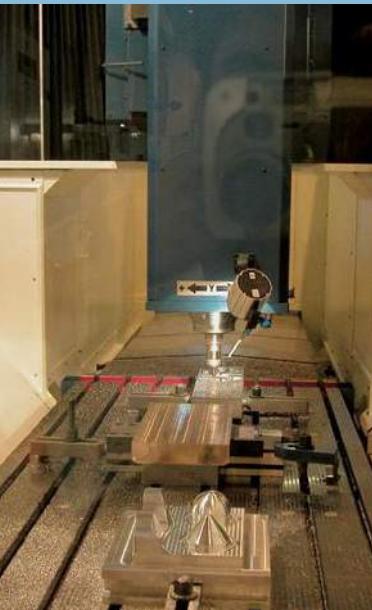


3RD STEP BEGINNING OF PRODUCTION

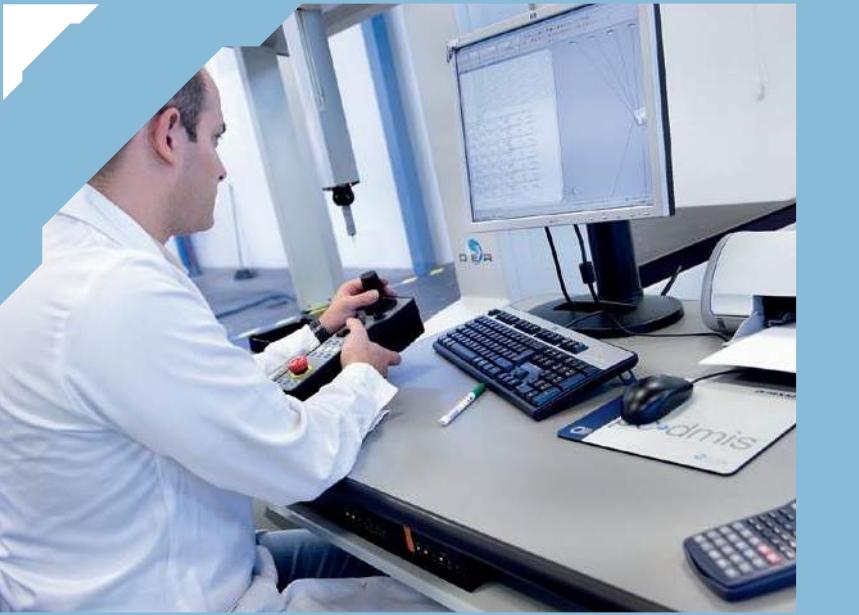
We only start working on the mould when we receive the client's approval of the semi-final drawing.

If approved, the mould construction starts. There is a person in charge of assuring that the construction goes exactly as it was decided on the project.

Inside Lismolde. We have a specialized plant to produce the mould bases, and we only subcontract any outside work when we don't have capacity to do it inside.



COST-EFFECTIVE
SOLUTIONS
FUTURE-VISION
POTENTIAL
HIGH-PERFORMANCE



5TH STEP TUNING LOOPS

After receiving the comments on the first part, we correct what is not ok, take parts again and send them to the client for new comments or approval and so on.
We bear the costs of all optimizations on the mould in order to put it according to the 3D part file.

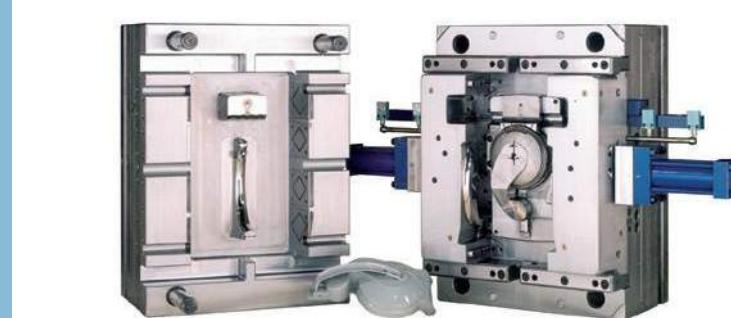


4TH STEP FIRST SAMPLES

The test usually takes place in temoinplas (our injection plant), however, if it is necessary, we subcontract an injection machine according to the client specifications.

We take the number of shots agreed on the tool purchasing order, we send them to the costumer by an express delivery service and the parts arrive at the costumer's facilities on the following day.

If the customer decides to come to the trials, a trip is organized.



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6TH STEP PART APPROVED AND TOOL APPROVE FOR SHIPMENT

We deliver a dossier together with the mould that contains:

IN PAPER:

- The drawing of the mould
- The drawing of the mould with list of materials
- The detail drawings of cavities and cores
- The drawings of the plates
- The drawings of the accessories
- The drawings of the electrodes
- The certifications for steel and treatments
- The metrology
- The injection specifications

IN CD:

- The mould in 3D
- The mould in 2D
- The electrodes in 3D

TOOL TRANSFER

The tool transfer from Lismolde to the client's facilities in Europe per lorry takes around 1 Week and is included on the price. The lorry leaves on Fridays and it can arrive between Wednesday and Friday.

If necessary a special Taxi can be organized, it takes 3 days, but it is not included on the tool price, only the normal transport.

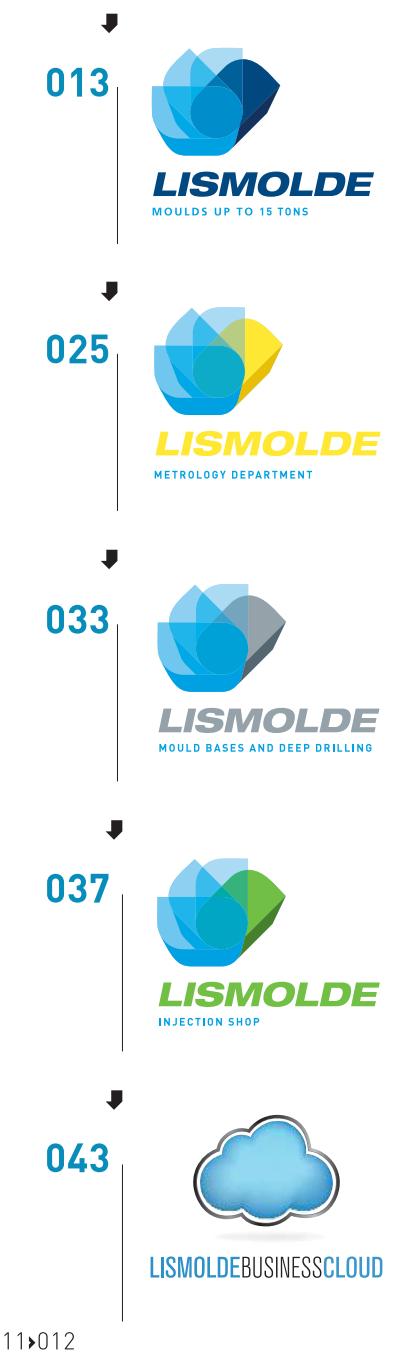
For non European countries the transport conditions must be negotiated.



MAIN MARKETS

WE MAKE MOULDS MAINLY FOR 4 MARKETS: AUTOMOTIVE, ELECTRICAL, HOUSEHOLD AND COSMETICS.

- AUTOMOTIVE: components for the car interior, engine, exterior, electrical components. Some examples are: airbags, support back seats, electric components, etc..
- ELECTRICAL: frames, plugs, all the type of electro components. etc..
- HOUSEHOLD: vacuum cleaners, irons, coffee machines, etc..
- COSMETICS: packaging but mainly parts for the packaging function, etc...



To assure a high quality level of our **moulds** and the total control of the manufacture process, Lismolde Group is formed by five main departments.